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Extending Soundwalking Practice: Soundsitting as an Inclusive and Complementary Method to Soundwalking

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Abstract: This paper proposes the '*soundsit*' as an alternative method to be used independently or in conjunction with current soundwalking methodological practice. The soundsit seeks to address the limits of the soundwalking method in relation to issues of transition, changing context, event occurrence, temporality, and inclusivity. Soundwalking and soundsitting are both methods of experiencing soundscape: soundwalking involves exploring and listening to the sounds of the environment while moving through it, while soundsitting involves sitting still in a particular place and listening to the sounds that exist in situ. The soundsit provides the participant or researcher with a fixed perspective and place to observe and experience sounds, within a defined soundscape context, enabling them to gain a longer-term experiential understanding of a space. Analogous with acoustic measurements, soundsitting is comparable to capturing average energy equivalent sound level LAeq measurements in allowing the perception of and activities within a soundscape to settle into a steady state. Beyond obtaining a longer-term impression of a chosen sound environment, soundsitting allows for a participant to disengage with the visual, which allows for deeper engagement and focus when listening to a soundscape; in addition, soundsitting removes the safety implications and distractions of walking practice and, as such, is a more inclusive form of activity, allowing those who are unable to walk to engage in the practice. The static nature of the listening experience allows for a different type of immersion through engaged active listening, something which is not possible on a soundwalk, allowing for deeper qualitative analysis and insight into the soundscape of a specific space or location. The primary findings show with test group of n = 6 that both methods are effective soundscape study tools, and further work with diverse groups is required.

Keywords: soundscape; urban planning; soundwalking; soundsitting; soundscape methods; auditory perception

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1. Introduction

> "...*people do not sit on the beach and listen to the steady roar of the pounding surf. They sit on the beach and listen to the aperiodic atmospheric compression waves produced as the coherent energy of the ocean waves is audibly redistributed in the chaotic turbulence of the shadows*..." [1], pp. 29–30

Soundscape research has often struggled to develop methods that tackle the multidimensional experience of a phenomenological perception of a sound environment whilst simultaneously considering repeatable empirical quantitative methods. Within soundscape research, there has been a large increase in both impact and academic outputs from soundscape research [2], including several large multidisciplinary projects consisting of researchers from a wide range of stakeholder disciplines and the formation of the COST action network [3,4] and SSID project [5]. Outputs from these projects have often been split between interpreting data from the complex empirical, phenomenological experience of soundscape versus a positivist, objectivist approach of reductionism using quantitative measurements. An example of a discipline-centred attitude is highlighted by Truax who notes that acoustic engineers favour 'even less the quagmire of listener attitudes', when

considering dealing with qualitative data [6]. Truax raises a further point, that the importance of the individual and their phenomenological experience is 'the last frontier' [6] when understanding soundscapes. This gives rise to the question of how we form methods which address the complexity of listening and experience.

This issue is shared by R. Murray Schafer, who recognised in 'The Tuning of the World' that it is crucial for many branches of the sciences and the arts to find ways to work together, 'The true acoustic designer must thoroughly understand the environment he is tackling; he must have training in acoustics, psychology, sociology, music and a great deal more besides, as the occasion demands' [7]. Whilst the challenge of working across the schism of disciplines is not new or unique to soundscape studies, many research approaches have utilised soundwalking as a method to collect both qualitative and quantitative data which 'has been employed over the past 40 years as a designated and dependable, even vital sonic method' [8].

With such a wide range of stakeholder disciplines in soundscape research coming from varying methodological standpoints, finding a universal approach and methodology is an issue that can and has provided a barrier to developing a cohesive and clear definition of and approach to soundscape. Soundwalking as a method, however, is often used across epistemological differences as it inhabits 'themes of participation, social context, aesthetic listening, environmental sensitization, interpretation, pedagogy, awareness raising, psychogeographic musings and even catharsis' [9]. The soundwalk is a multifunctional tool, adaptable to meet the requirements of different disciplines, and provides data from which findings can be made. Radicchi notes that the soundwalk 'can be seen as one of the most appropriate tools to allow for analysing and evaluating the city starting from the perceptual relationship between the inhabitants and the city itself through its sonic component' [10], providing rich qualitative data for analysis and serving as a useful tool for encouraging pedagogical engagement in understanding the sound environment and how it is perceived by participants.

With the wide range of approaches and applications of soundwalking, Radicchi produced a comprehensive list [10] of the many forms and methods that a soundwalk may take, including the author's and Adams' methodology for soundwalking as a qualitative method for researching participants' responses to soundscape perception at several fixed points by incorporating quantitative interviews with single or multi participants [11]. It was these fixed interviews and listening points which formed the basis of the soundsitting methodology. Westerkamp was an early adopter of the soundwalk as part of the World Soundscape Project and described a soundwalk to be: 'a listening exercise that helps us become aware of our immediate acoustic environment. It is also about the aesthetic pleasures of listening. Listening to sounds we might otherwise have missed; listening to the rhythm of sounds; listening for the unique voice of a city' [12], which does consider the idea of the 'immediate' location but an immediacy which is not fully experienced if a participant is walking or transitioning through a space.

The qualitative phenomenological approach derived from soundwalking provides, as Carras describes, a form that encourages 'an aural perception of the environment', not just as the physical embodiment of the space, but 'as a space of social and political tensions, divisions, and flows, it can act as an experiential foundation for understanding how sound reflects our thoughts about and our relationships to agencies, human or not, that we interact with . . . it obliges us to critically reflect upon the meditations of our experience and their implications' [13], a deep insight into the experiences and perceptions of participants to the soundscape and factors which influence their response and expectation of the sonic environment [14]. Again, the concept of immersion and time for immersion, as well as participant activity (walking) does not implicitly feature in the consideration of the walk. The sense that a soundwalk is an effective method of soundscape engagement is not in doubt, but the consideration of a temporal degree of immersion, in allowing time for thoughts and memories to develop, is not explicitly stated.

The ability to engage with environmental listening suggests that alongside the in situ experiential awareness of the soundscape, the participant may also form the following summary: 'sensory memory or the mediation on the historical substance of experience is not mere repetition but transformation that brings the past into the present' [15]. Feld developed the term Acoustemology 'to argue the potential of acoustic knowing, of sounding as a condition of and for knowing, of sonic presence and awareness as potent shaping forces in how people make sense of experiences' [16]. All of this serves to highlight how the soundscape and interpersonal relationship of participants with a space contains a complex conscious and subconscious, social, and psychological series of interactions that determine their sonic attraction or repulsion. The act of walking, however, does provide issues, which, due to the transitory nature of walking practice, mean that a participant's time to mediate and process experience, memory, and knowing may only be fleeting. Soundwalking is an effective methodology for engaging with soundscape, encouraging learning and participation, and collecting qualitative data, but within the method, there are issues of focus, transition, and inclusivity which need to be addressed, with the alternative of soundsitting proposed to overcome these issues.

2. Limitations of the Soundwalking Methodology

Since soundwalking usually takes the form of a 'walk-scape' [17], accessing both urban and rural soundscapes for analysis and study, soundwalking is seen as a highly positive method to engage with the sound environment; there are some limitations and ramifications, however, which restrict inclusivity and soundscape immersion [18]. The primary limitation of soundwalking is that the method is formulated by the activity of walking and, as such, it can exclude those who are unable to walk or require access to mobility aids [18,19]. Knowing a participant's mobility before a walk means that, on occasion, a route can be altered to allow participation for such conveyances. However, this can mean limiting access to places that may be of sonic interest, importance, and/or relevant to a research question by having to exclude certain areas due to accessibility constraints. This can often make soundwalks in some urban and many rural areas inaccessible in this respect. In addition, if a route has been set to obtain quantitative data, altering the route for a participant would mean the introduction of additional variables, which would make data correlation or assumptions based on equivalence not possible. The requirement of walking for often up to an hour or more [8] provides a further barrier to those with limited walking ability and stamina from taking part in the research.

Limitations of soundwalking also extend to the consideration of the safety of working with visually impaired participants, whose insight into sound perception would be extremely useful to soundscape research [19]. Whilst it is possible to work with these groups, it additionally makes risk assessments much harder to obtain. Whilst soundwalking is a safe activity in urban spaces overall, there is the requirement for both the researcher and the participant to have a continual awareness of potential hazards in their immediate surroundings [8], such as benign everyday urban activities, for example, traffic, crossing roads, pedestrians, street furniture, and potential trip hazards. With a participant being encouraged to focus on listening and perceiving the soundscape, walking practice requires the use of cognition of the location and surrounding activities. This also requires contemplation of more serious hazards and dangers which could be faced within a modern urban environment. All of these additional cognitive functions reduce a participant's concentration on the act of active listening.

Soundwalking allows for the exploration of differing soundscapes throughout the walk and focuses on how spaces change as they are passed through. With the soundwalk, the participant is transitioning through sound environments, and events that occur are often categorised as part of that transition. This, of course, may be a requirement of the research being undertaken; in which case, soundwalking is the correct method in these scenarios, but consideration should be made if the research requirement is to study individual places or for longer-term immersion in a range of places. The requirement here is to allow the

participant to experience a space for a longer time period and is comparable to acoustic measurements of average energy equivalent sound levels (or LAeq) [20,21], which considers the total sound energy received by the ear over a fixed period of time irrespective of the form or distribution of that energy [22]. The use of an a-weighting is an adjustment to the measurement to replicate the sensitivity of the ear across the frequency spectrum [20]. Acoustic measurements can and are taken on soundwalks, but the energy distribution is relational to the spaces walked through on the route, rather than in situ in one location, denoting the average sound level exposure of a participant throughout the route.

3. Soundsitting

Whilst soundsitting has been hinted at in the literature [23,24], a method has not formally been described or developed, and it is usually described under the nomenclature of soundwalking, such as a stationary soundwalk [9,10] or 'sitting on a bench' to determine how the soundscape may change as part of a soundwalk [8]. Soundsitting is a neologism of soundwalk and sitting, creating a complementary method to soundwalking for listening practice and research. The application of soundsitting rather than soundwalking depends on the focus of the research, and, as highlighted in the previous section, not only are there several limitations to soundwalking, but soundwalking also lends itself to studying different and changing soundscapes, whereas soundsitting enables the in-depth study of a single soundscape.

Sitting is often considered better for concentrated listening compared to standing for several reasons, primarily stability and comfort. Through sitting, we can achieve a more stable and relaxed posture compared to standing, which allows us to focus our attention and minimise physical distractions. Standing for prolonged periods may lead to muscle fatigue or discomfort, diverting our attention from the act of listening. As sitting requires less physical effort and energy expenditure compared to standing, we can allocate more mental resources to the act of listening, enabling us to concentrate and engage more deeply with the soundscape. Finally, sitting is often associated with relaxation, attentiveness, and focused activities such as reading or studying. This psychological association can focus the mind on listening, creating a state conducive to deep listening with to soundscape.

One could argue that John Cage's composition 4′′33′ [25] is the precursor of a soundsitting method, Cage's work, also known as the 'silent piece' where the audience sits in silence listening to a three-movement piano performance where the pianist makes no sounds. The concept of the performance is to prompt an audience to listen to the environmental sounds normally thought of as 'ambient in performance environments' [26] to attempt to make the audience experience their immediate soundscape and to use sound to draw attention to the sounds occurring in their urban landscape [27]. A sitting practice is where participants engage with listening to their immediate surroundings and become aware of the sonic detail in, as well as their own contribution to, the soundscape.

Considered in this way, soundsitting allows for a specific soundscape to be studied longitudinally rather than multiple different soundscapes which would be transitioned through on a traditional soundwalk. A participant sits in one place where the sound environment, layout, and physicality of the space are fixed and sound objects transition around the participant, allowing for an in situ study of that specific place, unlike the soundwalk which does not allow for the participant to be temporally immersed in a space. Their presence is usually fleeting, transitioning through without the time to focus on all aspects of the space they are inhabiting; a participant may still be hearing or thinking about a sound encountered in a previous part of the route. This is a key differential between the two methods and would be the main criteria used when selecting whether a soundwalk or soundsit is the right method for a research project. Soundsitting, for example, would be suited to the study of a fixed place, such as a new building or amenity to describe what the existing elements and perceptions of that place are.

The soundsit allows for short-term habituation [11,24] of the participant to the surrounding sonic environment to occur, which can provide further evidence of soundscape

elements that may be perceptually consciously ignored as part of the auditory scene analysis process [28] often to be rediscovered when listening back to a field recording of the soundsit. Recording and relistening to soundwalks has often been used as part of the method, with binaural recordings being the most favoured method [29,30]. Recording allows for reflection and further analysis of the soundwalk with or without the participant [31]; recordings can be made on a soundsit without interfering with the participant or requiring them to focus on and use additional recording equipment. With soundsitting, simultaneous recordings, using larger and more cumbersome equipment, such as a binaural head, and ambisonic recordings [32,33] can be made without issues around moving the equipment and self-noise from the recordist being present in the recording.

Analogous to acoustic measurements of average energy equivalent sound levels or LAeq, the soundsit enables a soundscape to obtain its 'average steady state', and the participant experiences an 'average' of the events occurring within the soundscape at that point in time; a momentary 'peak' or one-off events are not given as much precedence or importance. This contrasts with a participant transitioning through a space on a soundwalk and, for example, an ambulance passing through the space; this could be the dominant or only sound event they hear in that space, whereas in a soundsit, the event which occurs may not last for a long period of time and therefore may not contribute to their perception of the space. The stationary method of the soundsit allows for acoustic measurements such as LAeq to be taken at the location of the soundsit, which is not possible on a soundwalk, where any LAeq measurement taken relates to the overall averaged exposure of the moving participant and is averaged out over the different spaces that the walking route takes them through.

Several soundscape studies have tried to look at the physiological effects of soundscape on participants [34–36], measuring common factors such as heart rate and galvanic skin response (GSR). Many of these methods must be carried out in a laboratory setting, or without the participant partaking in any strenuous movement such as walking, which would give erroneous data, as such in situ experience must be replaced with ecologically valid soundscape reproduction, usually using binaural recordings [37]. Whilst ambisonic playback would lead to a more immersive experience, and thus a more ecologically valid experience for the participant [37], the method removes many of the additional experiential aspects of in situ perception of a soundscape such as the haptic sensations felt through the body or the relationships between the soundscape and the landscape in which it is occurring.

Addressing safety concerns enables participants to sit in safer, more secure locations, and their focus can be solely on perceiving and listening to the soundscape. Soundsitting enables a participant to close their eyes and focus more deeply on their listening state, removing the visual and focusing solely on sound objects and sound elements within the environment and allowing them to hear deeper and further into the soundscape. Soundsitting also removes the risks associated with walking and is therefore an easier method to risk assess. A stationary soundsit also makes the method a more inclusive and accessible form of research to any potential participants and therefore extends soundwalking practice by allowing inclusive participation. On some occasions, depending on the type of participant, group locations with suitable seating can be considered, or portable chairs or mats can be provided by the researcher.

In addition to research-focused outcomes, soundsitting itself can be extended to form a mediative exercise, in line with Oliveros' deep listening practice [38]. Oliveros does not explicitly name soundsitting as a method but does suggest that practitioners of deep listening sit whilst attempting the exercises and activities described in the book. This forms a secondary benefit of soundsitting where active listening becomes a meditative process, a part of mindfulness that helps to reduce stress. Further analysis and work need to be performed to investigate as to whether stress can be reduced through the process of active listening in a preferred soundscape context.

4. Method

The current method used with the participant or participants starts with a three-minute 'warm up' or acclimatisation sit. The three-minute period was chosen as a suitable acclimatisation and practice period before the actual soundsit begins; experience of conducting soundwalks [11,24] has shown that it is beneficial to provide participants with a short amount of time to engage with listening, as many are participating in soundscape research for the first time. This acclimatisation period allows for a discussion to occur after the three-minute period to ensure that the participant knows what they are doing and are not confused by the process. Leaving participants without any intervention has been shown to cause some participants to be unsure of the method and to stop engaging with the task. Three minutes is long enough to test the process and understanding with the participant. Participants are told to listen to the environment and focus on what elements they can hear.

Three minutes was chosen as testing of the method has shown that participants new to soundwalking or sitting may not fully understand the method or have questions about the activity; as such, it is best to stop the activity and reflect on their experience and then discuss aspects that are brought up in the discussion. At this point, further considerations of listening to the environment can be discussed, for example, getting the participant to think about where sounds are in relation to their location, near, mid, or far, or considering sound elements which seem constant, rhythmic, or transient. It is also useful to reassure the participant that it is okay for their mind to wander, and this will happen from time to time during the soundsit; they are encouraged to try to bring their concentration back to listening and the soundscape they are situated in.

The soundsit is conducted in silence, and participants are asked to concentrate on what they can hear in the environment, thinking about sound sources, the location of the sources, and if there were near, mid, or far (background) distances. Following the sitting period, questions are then asked about the experience, without referring to sounds at this point; also, the participants are asked how the location made them feel. These questions are asked in the form of a semi-structured interview in order for the researcher to be able to ask for more detailed explanations when it is felt necessary and to allow for the conversation to follow the participants' thoughts and experiences. They were also asked if the soundsitting experience had changed their perception of the soundscape in any way and if they were likely to consider thinking about sound and soundscapes in the future. Soundsitting, similarly to soundwalking, can involve any number of participants; however, six participants were involved in the first trial of soundsitting in a semi-rural post-industrial area in Northern England.

In line with LAeq(15) measurements, the soundsit lasts for fifteen minutes, whereby the participant or participants sit in silence. Unlike on a soundwalk, the participant may wish to make occasional notes on what they are hearing or what they are feeling. If they are recording the soundwalk, they may also mark the recording at specific time points by pressing the appropriate button on the field recording (NB: not all recorders have this function). After the soundsitting period is finished, a post soundsit questionnaire can be completed, either as a formalised questionnaire or with a less structured interview. After the subjective data collection has taken place, an open-ended discussion can take place. It is usual for the researcher to feed their own experience and findings into a discussion; this should also be recorded. This highlights one of the key advantages of soundsitting in that the listener can focus on granular exploration of a space, exploring the differences between sound sources which ordinarily would be labelled at a higher level of abstraction, e.g., trees or nature sounds.

Soundsitting can be undertaken indoors, allowing for the study of internal soundscapes. Of course, soundwalks can take place indoors, but once again, they move the participant through differing spaces, whereas soundsitting allows a participant to focus on the soundscape of one room, like Cage's 4′33′.

The proposed soundsitting method has been tested over several years as part of the author's research and pedagogical practice, incorporating a range of student participants,

and is currently used as part of an exploratory research process of the Our Dee Estuary Coastlives project of which the author is a volunteer. The 'Our Dee Estuary' project aims to instruct 'citizen scientists' in the art of field recording and listening, allowing them to develop their own ethnographic study of the Dee River estuary. The work is being carried out in collaboration with the University of Manchester, the University of Liverpool, and the Our Dee Estuary project. Some preliminary findings are presented in the discussion below.

5. Discussion

Whilst soundsitting as a method has been considered before [39], it has not been formalised by an etymological definition or into a methodology. The uniqueness of soundsitting is that it offers an approach to experiencing the soundscape by focusing on a specific location. By sitting and listening to the sounds that surround a particular location, soundsitting can help to develop a deeper understanding of the soundscape in that space and to create a sense of connection with that location. Moreover, soundsitting can also be used as a tool for contemplation and mindfulness, as it requires individuals to be still and present in the moment while listening to the sounds around them. This can help to reduce stress and increase relaxation and promote a sense of well-being. Soundsitting allows for acoustic monitoring to occur at the same time, in particular, LAeq, which would give the level of exposure in the space rather than the exposure of the person as they move through spaces and would not really mean anything. Soundsitting is an inclusive method for those who are unable to walk, allowing for further diversity in soundscape research.

The next stage in this work is the collection and further analysis of the Coastlives project discussions, which will inform the development and formalisation of the soundsitting method, for use with participants in a new research project using soundsitting rather than soundwalking as the primary methodology. The research will additionally investigate differences between the qualitative soundscape analysis and perceptual data provided by participants utilising both methods in the same soundscape context to look for the strengths and weaknesses of both soundwalking and soundsitting with participants. "(Soundsitting). . .it does help you to tune into a lot of those much smaller (bird) songs and sort of pinpoint the direction they are in, like you can focus more"—ODE P2—Soundsitting reflection. Soundsitting allows for deeper active listening for deep topographical analysis as described by Self, allowing for a 'minutely detailed, multi-level examinations of select locales that impact upon the writer's own microscopic inner-eye combining ecology, history, poetry and sociology' [40] to be formed in a participant's qualitative assessment of the soundscape. Deeper listening states can be achieved, with participants able to 'close their eyes' and disengage with visual stimuli, allowing participants to focus their listening on details, spatiality, and temporality within the chosen soundscape context.

With fewer motor skills required by the participant, their focus and concentration can be fully attributed to the soundscape. The lack of movement also reduces the self-noise present in field recordings, making soundsitting recordings directly comparable with the participant's experience, with fewer distractions from their own footsteps or breathing, providing deeper analysis. The recording of the participants' physiological data was made possible and without additional variables, e.g., movement. In addition, acoustic measurements and physiological data can be captured, which directly correlate with the qualitative data from the participant recorded in situ.

6. Conclusions

Soundsitting is not to be considered as a replacement of soundwalking, nor should it be seen simply as a stationary soundwalk, which would undermine the practical and methodological differences between the two methods. Soundsitting should be seen as an additional tool in soundscape research and as a companion method to soundwalking practice and, as such, deserves to have its own conventions and methodological identity. Soundsitting has not been described as such in much of the literature, and it feels pertinent to now develop a robust methodology or a set methodology to enable soundsitting to be a

further tool in soundscape research in investigating different aspects of the soundscape. The method is a valuable tool which is not only more inclusive to potential participants but also enables a deeper listening study of fixed place and soundscape contexts.

Soundsitting in a space and listening to a specific soundscape context focused the participants attention and allowed the participants to have a significant change in attitude to their sound environment, thus enabling a developed exploration of those spaces, including the temporality of sounds, the amount of and types of sounds present in the space, along with the perceptual relationship between the environment, spatiality, and infrastructure (urban and rural). Differing from a soundwalk, where a participant experiences a variety of soundscapes on the same walk, soundsitting makes it possible to allow a participants' ears to adapt to and focus on the depth, changes, and characteristics of a single soundscape context, highlighting the subtle and obvious layers within that space.

'The practice of soundwalking with professionals was found to be an instructive way of collaborating with professionals working in the field of urban design and development' [11]. Soundsitting has so far been trialled with students and research participants, 'non-professionals', of the Our Dee Estuary project and has shown similar findings. The participants commented that they 'had not considered the sounds or soundscape of their environments' and the impact it had on their lives and that was an instructive way of discussing and understanding the soundscape of specific urban and rural spaces in greater detail. An additional benefit discussed by the participants was the effects that sitting and listening had on their perceived health and well-being, often suggesting that going out and listening had a positive effect on their physical and mental health. "I work in a school so I have all summer to just go out on increasingly and especially in terms of like wellbeing as well. Just getting out was really helpful for me"—ODE P4—Soundsitting reflection.

This is comparable to soundwalking in this regard, where a by-product of the method is a contribution, however fleeting, to the health and well-being of the practitioner, with similarities drawn to holistic mindfulness. Soundsitting can make soundscape research accessible to those unable to participate in walking-based methods, thus making it a more inclusive practice when looking to work with participants who may not have been able to contribute to research activities in the past, including those who are 'aurally diverse' [40]. Soundsitting and soundwalking, when used alone or in conjunction with one another, contribute rich phenomenological insights into the ways in which a participant interacts and perceives their sound environment and contribute to a deeper insight into context, expectation, memory, and a sense of place. It is hoped that a trial with urban design professionals and architects will be occurring soon and will be further reported.

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