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Listening through Lines: Mark making, sound and the hospital

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A B S T R A C T

This article explores sound in the hospital environment, using the drawing of lines to understand sound as process and agent in spaces of wellbeing. It builds on and extends the work of Tim Ingold on lines and sounds, exploring lines/sound in relation to the specific context of healthcare spaces. The article presents the methodology, process, and interpretation of lines from a workshop called 'Listening to the Hospital' as part of the research project 'Sensing Spaces of Healthcare'. It focuses on engagement with recorded sounds from hospitals, showing that line-drawing might be productive in specific ways. The process aids an understanding of how sound shapes hospital 'affective atmospheres', and can encourage participants to engage in close listening. We argue that these routes to understanding are also potential routes to improving the wellbeing of people in hospitals, whether through hospital design or care. We also offer line-drawing as a valuable methodological and theoretical tool for scholars interested in embodied experiences of listening, of atmospheres and wellbeing, and of sound.

Introduction

The 'Sensing Spaces of Healthcare' project rethinks National Health Service (NHS) hospital environments through its focus on sensory experiences. Using approaches ranging from historical archival research to creative research methods, the project seeks to identify and address sensory challenges and opportunities within specific hospital environments. Sensory experiences can be difficult to articulate and explore, and this project harnesses the opportunities that creative approaches afford in exploring sensory encounters with hospital spaces. This article presents a 'Sensing Spaces of Healthcare' workshop titled 'Listening to the Hospital' to examine the potential opportunities that line-drawing might offer in relation to hospital sound, space, and wellbeing.

Line-drawing and mark-making methods helpfully break away from the restrictive concept of 'noise' in hospitals. For researchers, they provide a way to explore the more complex atmospheric qualities of sound and their relationship to wellbeing. A better understanding of hospital sound and the listening experience might also offer a way to support people's wellbeing in sensorially overwhelming spaces. The idea of 'wellbeing' is complex and contested, though it remains a useful framework for exploring people's responses not only to physical health but also to a range of psychological, social, physical and environmental factors. Wellbeing is an even more complex idea in the context of healthcare settings, where many people – staff, visitors, and patients alike – are under huge strain and often experience 'ill-being'. It would be remiss to suggest that these strains, which are structural as well as often physical and emotional, can simply be removed through close listening or tweaking soundscapes. As Nic Marks of the New Economics Foundation notes, 'wellbeing is not a beach you go and lie on. It's a sort of dynamic dance' (cited in Dodge et al., 2012:230). That said, we do suggest that close listening is a route to a better *understanding* of the impact of hospital soundscapes on wellbeing. Sound is one of the environmental factors that can inform wellbeing, either as a resource or a challenge (Dodge et al., 2012). Therefore, we discuss the idea of improving 'wellbeing' throughout this article, but do so in the context of these complexities; here, 'wellbeing' is often a shorthand for the environmental factors that can impact the perception of wellbeing at any given time. Understanding the affective and emotional aspects of sound, we argue here, can itself be a route towards better care and ultimately to better hospital design.

This article moves through the 'Listening to the Hospital' workshop in its three parts: listening to hospital sounds; reflecting on our lines; and, finally, using lines to imagine 'dream' soundscapes. We explain the different stages of the workshop, and pause to consider their potential implications for wellbeing. Each of the three co-authors participated in the creative workshop in April 2021 and this forms the basis of our analysis: Victoria Bates is PI of 'Sensing Spaces of Healthcare', the project that led the workshop; Rebecka Fleetwood-Smith is the project's Research Associate, who developed the workshop methodology; and Georgina Wilson is a Senior Biomedical Scientist at our partner site (Southmead Hospital, Bristol) and was a workshop participant.

In this article, we draw on our experiences of the workshop to

Authors are listed as per humanities conventions in alphabetical order as co-authors who all contributed to the writing of the piece; this is not a hierarchical order.

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explore how line-drawing can facilitate new understandings of sound, space, and wellbeing in hospitals. We demonstrate that each part of the workshop offers insights about the relationship of hospital sounds to space and wellbeing, and presents opportunities for those working to improve people's experience of these spaces.

The workshop, devised as a creative public engagement event, was advertised to NHS staff and was free to attend. The invitation to participate was circulated via the project's social media channels and through the project's arts and health networks. No prior creative experience was required and the invitation explained that all attendees would receive a pack of materials to take part in the workshop. In total, ten members of NHS staff participated in the online workshop. Participants worked in different areas of the NHS, from clinical care to hospital arts and research, in hospitals across England and Wales. Our analysis focusses on the reflections and drawings of co-author GW as an NHS employee who participated in the workshop. We do not claim that one person's experience is representative of how everybody reacted to this process, but rather offer an in-depth walkthrough to show some of the opportunities that line-drawing might offer.

Sound, wellbeing, and hospitals

From anthropology to geography, there is an extensive literature on the relationship between sound, space, place, and wellbeing. This literature covers natural and built environments, showing how soundscapes can influence wellbeing for better and for worse (for example Bell, 2017; Kingsbury et al., 2016; Graham, 2019; Pink et al., 2019). Such scholarship tackles a range of different types of space and place, and considers how sound is experienced by people with differing levels of health and sensory abilities, but it does have some points of commonality. There is a tendency in this literature broadly to approach the sounds of 'natural' environments as good for wellbeing, including when they are brought into the built environment, and to treat urban and built environments as 'problem' or 'noisy' soundscapes in need of solution. Hospitals are no exception to this approach; they are often viewed as 'noisy', and solutions to the 'noise problem' in hospitals have included the incorporation of more pleasant natural sounds such as waterfalls or birdsong (for example Mackrill et al., 2014; Iyendo, 2016). The 'problem' of sound in hospitals is thus widely acknowledged, but there is a tendency to jump straight from the 'noise problem' to attempts to reduce noise or introduce more pleasant sounds. We suggest that there is value in pausing to listen closely to the qualities and nature of hospital sound before categorising it as 'noise' or reaching for alternative soundscapes. Close listening might itself be a valuable part of understanding and improving the relationship between sound and wellbeing.

There is much potential for improving the wellbeing of all who spend time in hospitals, by better understanding how sounds are experienced. Patients, visitors and staff have a range of different relationships to sound in the hospital, which can be experienced as anything from a nuisance that impedes recovery to a reassuring backdrop of care and work. There is widespread recognition that sound is necessary for hospital work and that it can affect the wellbeing of patients and staff alike, with the focus of research often being the hospital 'noise problem' or 'noise pollution' (see Xyrichis et al., 2018). Ways of understanding the 'noise problem' in this context have tended to fall into two categories: measured sound levels, and questionnaires (Bates, 2021). The measurement of 'noise' as a problem of sound levels reduces it to an apparently objective, material phenomena. Questionnaires, on the other hand, often focus on specific 'noise' sources – whether people or hospital trolleys – without digging into the experience of listening or the qualities of sound. Our method (listening through lines) involves going beyond broad complaints about these fairly restrictive concepts of measurable 'noise'. The acoustic environment, and its relationship to wellbeing, is entwined with factors such as emotion and environment. These are often intangible and difficult to measure effectively, thus methods that allow us to explore and understand such issues better are crucial. We show the importance of listening closely to hospital environments, as part of better understanding and (ultimately, we hope) improving their design.

The online workshop that we present is a product of COVID-19 restrictions on in-person research, and should not be taken to imply that we dismiss the value of listening in place. Researchers exploring sensory experiences cite the importance of in situ, mobile, and creative methodologies. For example, health geographies research demonstrates that such approaches can enable the production of new knowledge through the 'foreclosing of health and wellbeing in and through place' (Foley et al., 2020:515). Methods such as walk-along interviews enable researchers and participants to co-produce understandings together. Such approaches are of value and interest in health and social care settings. For example, Pink et al. (2020) highlight the importance of in situ design-led and sensory ethnographic methods when working in healthcare settings, stating that such methods lead to nuanced understandings that can result in improving healthcare environments. In situ and mobile methodologies are 'messy' and 'unpredictable': they are inherently creative and typically draw upon a range of disciplines, leading to, as de Leeuw et al. (2018) note, otherwise 'unknowable' knowledge.

At the height of the pandemic, it was impossible to work on site within NHS settings and so the method presented involved listening to sounds outside the hospital using recordings from the Texture of Air archive (2019). Texture of Air was an arts and heritage project commissioned by University College London Hospitals. The recordings were made at Eastman Dental Hospital and the Royal National Throat, Nose and Ear Hospital. In work on field recordings, Michael Gallagher argues that such recordings rip 'sounds out of context and displac[e] them from their source, scrambling the meanings and associations they had in situ' (Gallagher, 2015:566). Listening to sounds removed from context in this way, he argues, encourages greater attention to 'aesthetics' and less attention to the 'source' of the sound. Victoria Bates et al. further argue, based on research into recorded sounds of nature, that recorded sounds 'have particular implications for imagination and memory' and that 'the lack of context to recorded soundscapes might allow for a process of deliberate re-placement, rather than displacement' (2020:2). They argue that recorded sounds are not 'inauthentic' or an attempt to simulate sounds in situ, but must be treated as part of a distinct form of listening experience. In this article we present some of the specific productive disorientation that recorded sounds might offer, in the sense of being 'hospital' sounds but not those of a known or familiar hospital environment. We do not claim that our findings would be the same if we conducted research in situ, and intend to expand our work to conduct such research separately in due course.

To attend to the nuanced and intangible aspects of the recorded hospital sounds and to explore broader issues associated with hospital noise, we sought an approach that allowed people to listen in different ways and forms, which led us to the work of Tim Ingold. In *The Life of Lines*, Ingold argues that lines can help to represent the 'in-between' and atmospheric qualities of sound. Sounds and feelings alike are 'qualities of experience', he notes, which 'do not go from point to point but loop and twist around one another' (Ingold, 2015:20). Ingold's work invites a way of rethinking sound, as something that 'swirls around' (Ingold, 2015:93) rather than being neatly transmitted in linear fashion from point A [object or activity] to point B [listener]. This work is extremely valuable in encouraging scholars of sound, space and place to explore the 'atmospheric' and relational aspects of sound. It remains, though, largely conceptual. Few scholars have applied the line-drawing method to specific contexts, or used it as a form of applied research method. In our workshop, we use lines – or, rather, the process of drawing lines – to explore sound in a specific context: the NHS Hospital. In so doing, we offer a case study grounded in a specific type of atmosphere, in which sound is interwoven with concerns about emotions, wellbeing and health.

Part 1. Listening to hospital sounds

The activity was an hour-long creative workshop held via Zoom.

Specialist drawing materials were sent to each attendee prior to the workshop. The structure and facilitation of the workshop drew upon a process developed by RFS in response to the remote working brought in by the pandemic. The workshop consisted of three stages: mark-making and close listening through drawing; a process of reflection; and inviting attendees to create their dream hospital soundscape. In this section, we outline the first process of close listening and how line-drawing supported this. We argue that line-drawing not only facilitated attending more closely to the complex qualities and layers of hospital sounds, but also revealed their connection to embodied and emotional responses to those sounds.

RFS guided attendees through the activities. The initial task did not involve listening to a recording and instead involved exploring and working with the drawing materials. The activity involved making three continuous line drawings using each of the fine-liner pens (Fig. 1: Exercise 1). A continuous line-drawing involves keeping a pen/pencil in constant contact with the page and the practice is typically improvisatory and spontaneous. The process of making a continuous line drawing is absorbing as it can be difficult to draw without removing pen from paper. It requires a particular focus and we found that it helped to settle thoughts and allow those of us who are hospital workers to carve out space and leave our working day behind: to stop, slow down and engage creatively in the workshop.

For GW, the first exercise was very freeing – it was a good way to start the workshop as it 'gave permission', in a way, to focus on being creative in a way that had been unconsidered before. She tends to doodle, anyway, and having three pieces of paper to use for the continuous line drawings was an opportunity to try out new styles and images.

The main body of the workshop involved listening to recordings from the Texture of Air project archive (2019). Selected field recordings from the archive were played via Zoom to attendees, who either listened via headphones or their devices' speakers. Although this workshop did not take place on site, it remains important that the participants knew that they were listening to hospital recordings, and that participants were all NHS workers. They were not listening *in place*, but the sounds were *of place* and heard in the context of hospitals and healthcare. This context is crucial, as the experience of listening would have been entirely different if the sounds were presented without the hospital context, and/or to people with little experience of hospital settings. We used recordings from the Texture of Air project archive (2019) as an opportunity to engage in exploratory work with NHS staff to consider the hospital soundscape in different ways and forms.

Recordings were selected for their different qualities, and this included considering where the recordings were made, what the recordings were, and the extent to which recordings were recognizable as being made in a hospital setting. We used the following from the archive: 'Walnut Tree', 'Rattling Lift', 'Fountain, underwater' and 'EDH Café at Lunchtime' (Texture of Air, 2019). Each recording lasted 90-180 seconds. In keeping with our focus on process and the value of decontextualization, we did not share the titles of the recordings with attendees, though we did inform them that the recordings were from hospital sites.

The focused close listening activity was scaffolded with a series of prompts. The practice of listening (and thinking) through drawing was unique to everyone, and the process began before the pen marked the page. RFS invited attendees to explore what they were listening to by first selecting their drawing materials. This process involved considering and selecting the texture, weight, size, and colour of the surface, and selecting the pen(s) that participants wished to use. The packs of specialist drawing materials were made up of a range of fine-liner pens and different surfaces: there were varying textures, weights, colours, and sizes of paper/card, which supported thinking through, for example, texture, scale, and spatial and auditory qualities. The variously sized pieces of paper and card also promoted quick mark-making to alleviate nervousness around filling a blank white A4 page. In the workshop we considered how to choose the most appropriate paper and pen to represent our listening experience. For example, we reflected on the 'fullness' of the recording, to decide whether we needed a large page and a thicker pen to fill the space to explore all-consuming sounds, or whether we should choose a small, lightweight piece of paper and a fine pen to explore barely perceptible sounds.

When listening to the first recording, attendees were invited to close their eyes and draw as they listened, a practice designed to emphasize the process of listening (and thinking) through drawing, as opposed to focusing on the creation of an image. After the first recordings, attendees chose whether to adopt the process of listening and drawing with their eyes closed or not. Our drawings entailed embodied engagement, regarding, for instance, movement, pressure, pace and density of the marks and lines. For example, soft, quiet sounds could be explored through subtle marks on the page, with the pen barely skimming the surface of the paper, whilst loud, distinctive, punctuated sounds could be explored through swift, spiky, disconnected marks. Rather than consider this as a process of making an image, we consider the lines and marks as entangled explorations of sounds, thoughts, and feelings. For example, co-author GW engaged in much closer listening because of the line-drawing process. She found that she wanted simultaneously to represent what she was hearing, so that the line correlated with the qualities of the sounds on the recording, and to explore how the sounds made her feel:

> The process of line drawing prompted me to listen with more attention, so that I could reflect the sound in the mark-making. The sounds were ones that could be readily absorbed in the background noise of the day and, as such, be ignored most of the time. Actively listening to them so that I could create images that could represent the sounds allowed me to hear further elements of the sounds that would otherwise have been missed.

Fig. 1. exercise 1.

The lines I drew were intended to represent what I was hearing, correlating directly to the sound itself. They also were intended to represent feelings, such as anxiety and fear of the unknown (especially for sound B) with jagged elements, or calmness and normality (especially for sound C) with smoother, free-flowing marks.

Looking back at the lines created during this process, they can be 'read' as the complex intermingling of a range of factors: the acoustic qualities of the sound, the embodied experience of listening, and the emotional response to sound. Each of these is part of the relationship between sound and wellbeing in a given space or place, but it is often difficult to understand the relationship between them using conventional research methods such as noise surveys.

Ingold's (2013) extensive writing on 'drawings that tell', underpins our approach to the lines drawn during this activity. In distinguishing between 'drawings that tell' and 'drawings that specify and articulate,' Ingold writes that 'every hand-drawn line is the trace of a gesture…Yet not every line has as its purpose to express that gesture' (2013:129). He explores, for example, the ways in which architectural drawings typically 'become ends in themselves' (2013:128), whereas 'drawings that tell' are never finished, but are instead a process of correspondence. We consider the practice of listening through drawing to be an embodied process of thinking, feeling, and reflecting. The practice of creating a line or a mark whilst listening involves improvisation; there is a 'live' quality to the process of putting pen to paper as you listen (and think) through drawing. Nisha Sajnani writes that creative practice 'invites fleeting, emergent and evolving discoveries unfolding' (Sajnani, 2012:84). Listening through drawing was a process of thinking and feeling. Ingold (2013) writes that drawing can be transformative, for both the person making the line and those that follow and look at it. This practice is something that was reflected during the activity.

Most of the marks were made instinctively, with their meaning brought into being through the process of line-drawing itself; the lines and marks were not carefully cognised drawings, but intuitive embodied responses. Meanings were ascribed to them later (anxiety, calmness) but in the moment, the line represented 'what I was hearing' and the correlation between mood and sound. Below, we present GW's reflections alongside her drawings, to show specifically how she was also at times 'transported' to specific hospital environments. This stage of the process was designed to be instinctual, and the descriptions relate to GW's own embodied and emotional response to sounds as an NHS staff member. This embodied drawing mode differs from the more analytical mode of thinking, discussed in the next section, during which GW focused on the implications of the sounds for patients. As noted above, while these recordings differ from in situ listening, they still enable us to explore and understand some of the relationships between sound and wellbeing for hospital staff and in specific hospital spaces. The sounds that were non-institutional, for example, were experienced as much less distressing than those that were clearly related to hospital emergencies or were disorienting and unrecognisable.

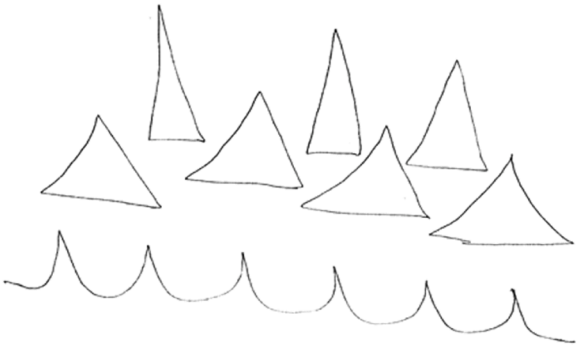

Fig. 2. response to Sound A.

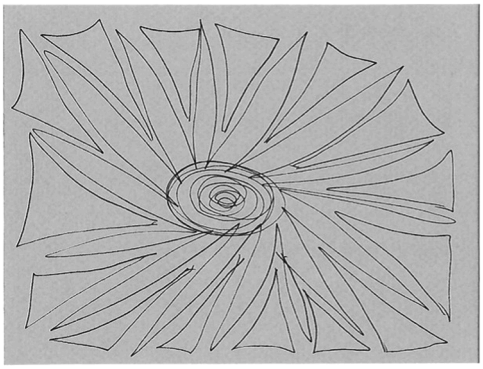

Fig. 3. response to Sound B.

Fig. 4. response to Sound C.

The four sounds we listened to were very different – the first one (sound A/Fig. 2) was quiet, almost incidental, until an emergency vehicle siren interrupted it! The sound was unobtrusive and had flowing qualities, punctuated by some clicking noises, almost like punctuation points, dividing up the sound. The siren in the background was intrusive, underlining the emergency work of the hospital and the possibility that it was bringing a seriously ill person into the area.[1]

Sound B (Fig. 3) included more mechanical elements to it, jarring and clunky, not a sound that would be routinely associated with a hospital setting. Hearing the sound in isolation was a little disconcerting and formed jagged, rough images in my mind and I chose a coarser piece of paper for my mark-making.

In total contrast, sound C (Fig. 4) was far easier to identify, in principle, as flowing water, whether it was a sink or bath filling, or a fountain. The marks relating to this sound were free, flowing, natural marks, that could be associated with anywhere where water could be heard in a soothing environment (unlike pounding rain on a window or roof!). I chose a smooth piece of paper and used a pen with a wider tip, as it would be easier to make sweeping images.

The final sound, sound D,[2] was of many people talking in a communal area, such as a cafeteria, or tea room. This could be staff only, or patients/visitors, although the conversations seemed to be relaxed, a more social environment, rather than a specific 'work' environment. Mark-making for this sound included smooth images, to create a relaxed image with no jarring elements.

We offer the line-drawings here alongside GW's interpretations to show what might be considered a 'jagged' or 'smooth' line/sound/emotion and how they intersect. The interpretation also shows the particular meanings that these sounds had in relation to the hospital,

[1] All of these sounds are available to listen to at the Texture of Air archive (https://www.thetextureofair.uk), to give context to this analysis. 'Walnut Tree' is Sound A, 'Rattling Lift' is Sound B, 'Fountain, underwater' is Sound C and 'EDH Café at Lunchtime' is Sound D.

[2] Unfortunately the line drawing for this sound is unavailable.

particularly in the case of Sound A, which was the most recognisable hospital soundscape. However, as we have noted, much of this process of meaning-making happened both *during* the process of drawing and afterwards. The line is not, therefore, the representation of a cognised experience, but rather an embodied and affective response to sound. Each drawing is also, significantly, the response of a *specific* person, at a specific time, to a specific sound, that was informed by that person's emotional state, environment and their social/cultural contexts. This is crucial to remember also in regard to hospital environments, where the same sound might be experienced differently by the range of people in the space, and indeed by the same person at different times depending on their emotional state and their state of health (Bates, 2019; Conradson, 2005). Sounds not only create emotions: they also meet emotions, and line-drawing helps us to explore these relations.

This way of understanding line-drawing opens up some exciting opportunities. The affective and atmospheric qualities of sound, and their impact on wellbeing, are extremely hard to reach because they are so often intangible. By asking somebody to describe sound in words – for example, by asking them what noises upset them – we skip over an important part of the experience of listening. The lines drawn above *could* even be separated from the text and taken on their own terms as the qualities of sound in a given space or place, and/or as the experience of listening. This process would involve responding to the lines as spatial and temporal markers of a listening process, though it would be important not to fall into overly structuralist ways of thinking (e.g., jagged = triangular shapes = stressed) in so doing. Taking words alongside drawings – as we do above – helps to situate these lines in more personal, embodied experiences that we should not sweep past in pursuit of finding common good/bad soundscapes. The line itself is, though, of equal importance and not just a route to verbal and linguistic expression.

Scholars of non-representational theory have long sought ways to move beyond 'culture' and representation to, as in Nigel Thrift's work, focus on 'everyday' lived practices and their affective qualities (Thrift, 2007; see also Andrews, 2018). Such theoretical frameworks provide a way of understanding sound as an active and shifting set of relationships between a hospital's human and non-human elements; affect, in this context, refers to encounters between different actors in a space and how they are *affected by* each other, and should not be confused with the psychological concept of affect. These theories are often difficult to explore in practice or beyond the conceptual, as inevitably the act of interpretation itself interferes with the principle of the non-representational. It is possible to treat sound as an agent in hospitals, as an active force in the making of space, place and wellbeing, but we tend to filter it through human concepts such as 'noise'. These line drawings might offer a way to capture the embodied human/non-human in a way that avoids such linguistic trappings.

As embodiment, emotions, sound, and thought were intertwined in the drawing of these lines, they might help us to reach some of the complex atmospheric aspects of sound and particularly what might be known as 'affective atmospheres' (Anderson, 2009). To cite Deborah Lupton, 'affective atmospheres' are produced by 'relations between humans and nonhumans, perceived and felt through the body' (Lupton, 2017:10). They are constantly changing as the assemblage of humans and nonhumans shifts and, to continue to use Lupton's clear summary of this complex concept, are 'often felt or sensed by humans entering a place rather than directly observed or represented in words or images' (Lupton, 2017:10). Atmospheres, and affective atmospheres, are co-produced between people and the many shifting components of the non-human world, of which sound is one. As Kimberley Peters argues, in relation to the role of sound in atmospheres, 'sound comes together with subjects, objects, events, memories, moments, places, spaces, and times to create moments of crescendo and silence that generate spatial atmospheres that are felt and lived' (Peters, 2018:61). Many aspects of atmospheres are very difficult to identify or explain, partly as they are often not cognised, and because they are so unstable. Lines allow for this complexity and instability; the practice of listening (and thinking) through drawing allowed us to explore how we felt through and with the marks we made, whilst the process of interpreting them was an act of recognising and giving meaning to those atmospheric qualities. To return to Ingold, lines evoke the 'swirling' qualities of lines-of-sound and help us to – in the words of artist Andy Goldsworthy – explore 'changes of rhythm and feelings of surface and space' (1994 quoted in Ingold, 2007:129).

The line-drawing method offers us a way to break free from the rather blunt tools of surveys and noise meters in understanding hospital sound, and provides a route into understanding the more complex role of sound in creating affective atmospheres. A better understanding of the relationship between sound, space, embodiment and emotion is a precondition for improving hospital soundscapes and by extension the wellbeing of staff and patients alike.

Part 2. Reflecting on our line-drawings

In the second part of the workshop, we looked at our drawings and asked what story they told. We reflected on the process of instinctual, embodied drawing, and added a new layer of meaning by switching into a more analytical mode. For hospital staff, this offered particular opportunities. For GW, in this part of the workshop, it became increasingly clear that – in addition to the affective, close listening outlined above – there was another layer to the line-drawing exercise: the opportunity for imaginative and empathetic listening. This experience offers another way in which line-drawing could support the promotion of wellbeing in hospital spaces, by encouraging staff to listen in new ways to support the patient experience. This support is not necessarily about sound design: it could take the form of adjustments to hospital soundscapes where that is possible, but it could also take the form of emotional support through the recognition of difficulty and distress.

After drawing our lines, RFS invited workshop participants to share their drawings on camera and verbally to reflect on how they found the process. We talked through how the sounds felt, and then revealed their sources. We discussed whether people could identify the sounds, whether they were recognisable as the sounds of the hospital, whether this mattered, and how it felt to listen closely to them. It was clear from this stage of the workshop that the experience of listening was highly individual, but that the shared context of working in hospitals shaped people's experiences. The act of interpretation helped us to understand how we feel about sound and noise, specifically in relation to the hospital environment. As Shanti Sumartojo and Sarah Pink argue, 'it is the way that people feel about things that make atmospheres perceptible' (2018:5).

At this point in the workshop, another layer of reflection and analysis became evident. Rather than the initial response to the sounds, and how they made her feel, GW began to reflect on how other people in the hospital might experience them. These reflections were not prompted by workshop organisers, but were the outcome of sensory defamiliarization:

> Sound A: As a hospital worker, I would probably ignore the sounds heard, but as a patient, I would be more alert to the sound, not knowing the implications of the sound and if it would directly affect me. The sound of the siren is a normal part of the workplace, but as a patient, it could conjure up feelings of anxiety – why is a vehicle sounding the siren? Are they in a hurry to get to an emergency, or coming to the hospital bringing a seriously ill patient with them? What is wrong with them? Is it less or more serious than the reason I am a patient for?

> Sound B: As a member of staff, it could be something familiar, but as a patient, it could heighten the sense of apprehension caused by being unwell and in hospital. I now understand (as I was told during the workshop) that the sound was of a lift, which would become a background sound to a member of staff but could be quite upsetting to a patient.

The decontextualized recordings and the lack of 'visual context' when referring to Sound B is of interest when we consider (1) the ways in which we understand and contextualise the hospital soundscape through our knowledge of 'things' within the environment; and (2) what this practice offers in terms of empathic engagement with the hospital soundscape. For example, listening (and thinking) through drawing allowed us to consider the ways in which we may take our surroundings for granted. The normality of sounds stems from understanding their context. Sounds that are familiar to hospital workers form part of the ambience of the workplace, yet for a patient or visitor these sounds may be abnormal and lead to a more heightened awareness of their environment. When working in the hospital, it is typically only the 'different' or 'urgent' sounds that penetrate the 'normal background' noise, yet the process of listening (and thinking) through drawing acted as a sensory attunement, permitting us to listen closely and shift our attention and focus as we drew.

Listening to recorded sounds out of context created a productive sense of disorientation, which helped some healthcare staff consider the subjective experience of patients in a new way. This could be labelled 'empathetic listening' because of the perceived intersubjectivity that this form of listening prompted. For GW, the experience of being placed into a position of uncertainty and confusion created a sense of 'listening as' somebody else, which allowed her to step outside a staff role that demands capability and knowledge in the hospital setting. Whether empathy is the correct term here is debatable. Jane McNaughton (2009) calls for us to replace the term 'empathy' with 'sympathy', as a form of 'feeling for' the patient or 'momentary mirroring' of experience rather than true intersubjectivity. Whether or not our process was what McNaughton (Macnaughton, 2009) calls 'true empathy' is perhaps, though, beside the point; it was a process that *felt* empathetic, and the process of 'listening as' somebody else was highly productive.

This argument – about the value of decontextualised sounds – might relate to some of the arguments in the field of medical humanities about the potential value that the arts and creativity offer for 'tolerance of ambiguity' and productive forms of uncertainty (see, for example, Bleakley, 2015). In the context of hospitals, this uncertainty is particularly important. Uncertainty about the sounds of hospitals is symbolic of, and exacerbated by, many other forms of uncertainty that negatively affect wellbeing. As one letter to the Patient Association publication *Patient Voice* summed up in the 1990s, in relation to experiences of hospitals, '[t]he biggest fear is fear of the unknown, as one's imagination can run riot' (London, Wellcome Library, 1991:5). This close entwining of the unknown and imagination has long negatively affected people's experiences of hospitals. In our listening and line-drawing activity, the 'unknown' similarly stimulated imagination, but in this context as a productive empathetic force.

Overall, it is almost impossible to separate the process of line-drawing from the question of interpretation. The line as 'product' or 'data' can only be given meaning in relation to the processes of listening, thinking, feeling, and drawing outlined above. Each instinctual gestural mark made, each representation of a feeling or sound, and even the selections of pen and paper, are part of the meaning of the line and the process of interpreting it. We also continue to add layers of meaning and understanding to the drawings created. We therefore do not engage in a process of analysing the qualities of each drawing, but rather engage with the lasting trace of the lines (Ingold, 2016), considering the ways in which the rhythm, pace, temporality, fluidity, and density of each line tells a reflective, imaginative story that offers alternative routes to understanding the hospital soundscape. The lines that we present in this article started as thinking-through-drawing and then became a way of reading (and re-reading) the experience of listening. Through this process of re-reading, we have added new layers of meaning and ways of understanding the listening process. In switching 'modes' from the instinctual and embodied, to the reflective, we explore new ways of thinking about hospital sound. In relation to wellbeing, we have offered the example of 'listening as' and productive disorientation as a route to better patient support in hospitals.

Part 3. Imagining our dream soundscapes

The final stage of the workshop invited attendees to draw an aspirational hospital soundscape by reflecting on the mark-making or drawings that they had already created. This process encouraged attendees to be imaginative and explore their 'dream' hospital soundscape through mark-making and drawing. It was anticipated that attendees would create their drawings in response to marks that they had made whilst listening to the recordings. The extent to which their 'dream' soundscapes were like their existing drawings therefore depended, in part, on their feelings about their previous drawings. Although we had talked previously about the different people in hospitals and how they might experience sounds, this part of the workshop was focused on participants' *own* dream hospital. The word 'dream' was selected to be deliberately open to interpretation, as something that might not have to be literal or even feasible, with a focus on imagination; participants were not overly directed or given much instruction about what to draw in this activity.

These lines were produced with much more awareness, though again they often represent a combination of sound, emotion, and embodiment; more than one of us chose a wave shape, for example. This does not mean that we want hospitals to have wave sounds. Such lines should not be interpreted quite so literally. These shapes represented a sensory-emotional *quality* associated with – to take the words from one of our cards – qualities such as 'soft', 'gentle', 'flow', 'soothing', 'restful', 'smooth', 'safe', and 'calm'.

> For GW, the final exercise – the dream hospital soundscape (Fig. 5) – was one that required a certain amount of soul-searching. What would I like my dream hospital to sound like? We take for granted the surroundings we meet very day and what sounded alien at first becomes normal and ignored and the impact of those sounds is underestimated for people who encounter them for the first time. It is only the 'different' or 'urgent' sounds that penetrate the normal background noise and raises our attention to them. My dream hospital would sound welcoming, calming, non-threatening, efficient, caring, and safe.

These wave-like sounds are atmospheric qualities, not just acoustic ones, though the two are intertwined. Again, this kind of exercise could produce data for researchers and designers, particularly those seeking to 'stage' certain atmospheric conditions or qualities in order to improve the hospital environment. Though atmospheres themselves are 'in between' and often intangible, Gernot Böhme argues that it is possible to arrange 'the conditions under which an atmosphere can appear' (Böhme and Engels-Schwarzpaul, 2018:161). Acoustic design might be one such condition (or 'generator', in Böhme's term), and we can learn from such exercises what acoustic qualities might help to *generate* desired atmospheres. Atmospheres associated with feelings of wellbeing in healthcare settings might be one such goal.

Ultimately, this exercise is intended as a route to improving the soundscape of hospitals. We closed with a 'dream hospital' activity because we are keen to explore the sonic qualities of environments that people associate with wellbeing. It is clear, though, that line-drawing represents a complex interrelationship between sound and feeling. The

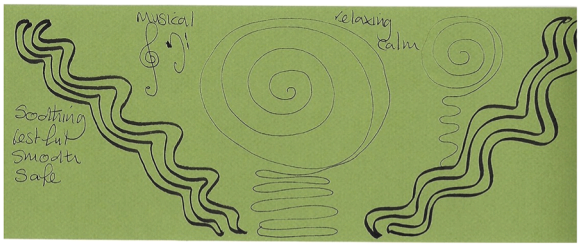

Fig. 5. The 'Dream Soundscape' activity.

'dream hospital' drawings should be read no more literally than those represented in Figs. 1-4. It would be a mistake to read Fig. 5 as straightforward 'data' to conclude that hospital atmospheres could be improved by adding the sound of water or music. Such drawings are better recognised as part of a process of thinking-through-drawing rather than the representation of an idea. They represent the ideal *feeling* of a hospital and the acoustic *qualities* associated with that feeling – for example evoking softness, calm, and quietness through the use of soft, curving lines and swirls. In addition to the ideal acoustic qualities of a relaxing hospital, the 'dream hospital' lines might also be read as part of the story of the workshop. Workshop participants reacted to the sounds of hospital environments by reaching for the opposite in terms of the natural world.

Biophilic design – including sounds of the natural world – is increasingly popular in hospitals, and there is certainly some evidence here to support its use. As already noted, the natural world was a repeated feature of our 'dream hospital' soundscapes. However, line-drawing invites us to think in more complex and critical ways about what such lines actually *mean*. As argued throughout this article, line-drawing is a process of exploring and thinking-through-making. It is also a symbolic process that represents the relationship between sound and feeling. To take wave drawings as literally expressing a desire for wave sounds in hospitals is to miss this. Instead, we might look at the drawings, their shapes, and their atmospheric qualities in order to understand how people want to *feel* in hospitals. This argument builds on research elsewhere that shows that people commonly respond with 'waves' when asked for the sounds associated with wellbeing, but that in practice this is a broad category that might mean lapping water for one person and crashing waves for another (Bates et al., 2020). By looking closely at the line drawn in Fig. 5, we can move beyond such simple answers to think more carefully about the acoustic and emotional *qualities* of the ideal soundscapes of hospitals.

Legacies: line-drawing and storytelling

Each time we return to the lines we read the story differently, as the way we feel about hospital soundscapes changes – in part because of the process of listening, thinking, and returning to the lines. The act of interpretation is not a case of imposing a clear-cut meaning onto specific shapes and textures. It is an ongoing act of co-production and re-reading. Stenslund refers to the practice of collaging atmospheres whereby the person 'receiving' the collage is not a passive viewer; they feel and sense an impression of a place co-produced via the collage (Stenslund, 2021:5). This process was made particularly clear in the writing of this article, as we all returned to the drawings that we made many months previously. For some of us, the drawings had been stored since April 2021, and we returned to them in October. They were not all labelled, and for some we had to return to the recordings to match them to the lines as part of the act of remembering. This act of revisiting the recordings, including closely listening to them again in dialogue with the different already-drawn lines, became part of the process of re-reading and re-interpretation of the lines. This process was much more than an act of matching soundscapes to their drawings, as we also brought with us six months of reflection. Since the workshop, we have all found ourselves engaging in closer listening when physically in hospital buildings, and in some of the acts of 'listening as' another person that the activity encouraged.

It was impossible to return to our drawings and soundscapes with the same ears. Atmospheres, as we have already noted, are co-produced between human and non-human elements. When we returned to our line-drawings and the hospital recordings that prompted them, we were changed entities ourselves with a different relationship to sound. We also now knew what the sounds were, as they were revealed at the end of the workshop. One of us engaged with the 'Listening to the Hospital' soundscape in the immediate aftermath of a long working day, but returned to the sounds to reflect on them from a relatively relaxed state on holiday. These factors, and the changed human and environmental contexts of listening, mean that we were not listening to the *same* atmospheres when we returned to the sounds. Instead, we were engaging in a process of remembering, revisiting, and rewriting the story. The process of revisiting our lines to write this article thus became an act of reflection itself, on how our listening practices and relationship to hospital sounds had changed in the last six months, and the lines themselves were read through this lens. Our lines were fixed in a particular point of time, but their meanings continue to evolve in dialogue with the changes to us, both as listeners and as readers of the story.

Since the workshop, we have all listened to hospitals differently. The line-drawing activity prompted us to listen, with more attention, to sounds that are so often absorbed into the background noise of the day and ignored most of the time. It also highlighted the relationship between emotions and our perception of sound, including the impact of starting from a place of uncertainty, as well as the heightened emotions (such as fear and anxiety) linked to a situation that contains many unknowns. There is of course extensive research on the impacts of sound on health and wellbeing in hospitals, particularly in relation to 'noise' and patients (see Fillary et al., 2015). All of us were already familiar with this research and knew the importance of good sound design and noise reduction in hospitals from an *objective* perspective. However, the process of line-drawing changed our *subjective* relationship to sound. It encouraged us to listen differently, and to hear more imaginatively: how would this hospital sound to an ear unfamiliar with its origins, or to a staff member under stress?

To describe how we now 'listen differently' is not just a means to narrate the impact of the line-drawing workshop, or even to make a case for the value of line-drawing as a tool of empathy. Instead, it is to give an example of how the workshop itself and the process of participating changed *how we listen* in hospitals. When we return now to the lines we drew in April 2021, we cannot read them in the same way. The story of the line has changed. It no longer represents only a listening experience, or the illustration of atmospheric conditions (or atmospheric imagination), but is read now as the story of a change in perspective. The line now represents, to us, a new kind of process: the attunement of our ears to a different kind of active and imaginative listening. Lines, then, are worth revisiting and re-reading, just as texts are, as they change meaning with time and context. This kind of continual re-visiting and re-vision of the story is in itself important, and changes the line from being a 'snapshot' of a moment in time to part of a conversation about hospital sound. Line-drawing can be a long-term tool for reflection and change, rather than a 'one-off' activity that is quickly discarded or forgotten.

Conclusions

In this article we have used lines to engage with what Gallagher et al. call 'expanded listening', which builds in the multiplicity of sound:

Aesthetic, compositional and timbral qualities; affective, material and embodied characteristics; the ways in which sound is both spatial and temporal, evoking a sense of time, distance, direction or movement; sound's capacity to produce knowledge of events and processes; and the semiotic associations produced by listening, including the tendency of sound to trigger memories (Gallagher et al., 2017: 621–22).

We have avoided the potentially 'diffused' nature of such 'expanded listening' by focusing on a specific context and on a limited selection of recorded sounds. In this way we show that close attention to listening as process, and creating a dialogue with lines as stories of that process, can be highly revealing of how people think and feel about specific spaces, places and their sounds.

In the specific context of hospitals, we have shown that the different phases of our workshop – and the legacy of the workshop – have offered different routes into understanding the relationship between hospital sound and wellbeing. The process of close listening, through line-drawing, helped to understand the entanglement between embodiment, emotion, and sound. It also offered the opportunity to move

beyond the potential constraints of language, offering a method of potential value to scholars interested in non-representational theory and affective atmospheres. This is an important pre-condition to a more complex and nuanced understanding of the impact of sound in hospital environments, that helps us to reach *feeling* as something somewhat intangible and beyond the restrictive concept of 'noise'. The second part of the workshop, which engaged in more explicit reflection and analysis, offered another opportunity. In our specific example, it put a hospital worker in an unusual position of acoustic uncertainty. This prompted an imaginative process of 'listening as' hospital patients and thinking through the role of uncertainty in wellbeing. Thirdly, we showed that these two opportunities (representation of feeling, and reflection) could be brought together in the generation of a 'dream hospital' line-drawing. This kind of drawing offers particular opportunities for improving hospital soundscapes – for example, by introducing new types of sound or managing those already in place – particularly if they are not interpreted too literally, but are analysed in the spirit of 'atmospheric' thinking outlined above. Finally, we suggest that the act of returning to and re-interpreting our lines offers an ongoing legacy of the workshop. Overall, we have taken forward Ingold's work to show that lines have value as an applied research method for the study of sound, space, place, and wellbeing.

Declaration of Competing Interest

There are no conflicts of interest to declare.

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Data access statement

All underlying data are contained in full within this paper.

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