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Abstract

This article explores how close attention to sound can help to rethink literacy in early childhood education. Through an analysis of text, audio, video and photographic data from a sound walk undertaken with a parent and a child, we make two arguments. First, contrary to skills-based approaches that abstract literacy from context, we show how literacy emerges from vibrational entanglements between bodies and places. We provide examples of how listening and sound-making unfold together in place, as sound moves between different material bodies, including children, animals, objects, buildings, and landscapes. Our analysis suggests that a wide range of sound-making and listening practices, not just those focussed on words, should be valued in early childhood literacy. Second, we demonstrate how sound also transcends bodies and places through its multiplicity, ephemerality and fluidity. We draw on the more-than-human semiotics of Eduardo Kohn to analyse how sounds operate as relational signs between human and non-human entities, using his ideas to move beyond human-centred, symbol-centred practices of literacy.

Introduction

While sound is an important medium of symbolic communication and representation, sound always does more than this. This paper is based on the premise that this 'more than' is worth listening to. We attempt to 'listen differently' (Gallagher et al, 2017) to sound in relation to early childhood literacy. Literacy curricula in early childhood education promote practices of speaking and listening centred on auditory comprehension of recognisable, representational vocabulary. Speech and language interventions encourage children to make non-linguistic sounds only insofar as these are a precursor to words (e.g. Hamer, 2012). Yet children's non-linguistic sounds are a notable and pervasive characteristic of early childhood (MacLure, 2016; Rosen, 2015). Moreover, these sounds occur within wider soundscapes which, as Gershon (2011, p.66) has argued, are "rife with information" about material objects, physical processes, spatial relations, sociocultural norms and tacit meanings, and as such form educational systems. Despite well-established criticisms of narrow, fixed and decontextualized conceptualisations of literacy, there has been insufficient attention paid within early years pedagogies to the materiality of sound, the role of environmental sound in learning, and the ways in which sound transcends both human perception and human meaning.

Drawing on data from the 'Sounds of Childhood' project, which took place in a primary school in the town of Doncaster, England, we argue that non-linguistic sounds ought to be valued as part of children's expressive and communicative practices, and as a vital force in how they forge relations with the wider world, rather than merely a precursor to words. The project explored 3-5 year old children's perceptions of sound in the environment through sound walks, drawing and mapping sounds. The data on which this paper is based were generated through sound walks with parents and children; we focus on one walk in particular that seemed particularly generative of different ways of relating to sound. Our analysis draws attention to how, through this walk, a child's articulations of sound were shaped by relations between the materialities of her body and the wider environment. These articulations were notable for how they blended the mundane with the fantastical. Throughout the project, children's responses suggested firstly that environmental sounds represented elements of their everyday spaces (e.g. rumbling tummies, aeroplanes, metal railings) and secondly that this intra-action with sound and place sparked imaginative worlds populated by various sounding creatures and forces (e.g. splashing monsters, dancing

centipedes, sunshine noise, rivers making magic). Thus, children's sound making was both entangled in place, and also transcended the materiality of the place they were in.

This tendency to slip between different registers of sense, meaning and affect is central to how sound moves bodies, forges relations and makes worlds. Sounds, like words, are "overflowing with meaning" (Rosen, 2015, p.40; see also Gershon, 2011). However, unlike words, non-linguistic sounds (both human and nonhuman) seem to offer greater potential for slippage between different kinds of representation and non-representation. Thus, we argue, a greater attention to sounds beyond words has the potential to expand literacy pedagogy in ways that generate the novelty and surprise required for learning to be transformative rather than narrowly instrumental.

Context

There is a well established divide in the field of literacy studies between understandings of literacy as autonomous, a fixed set of skills to be learnt and then applied in any new situation, and literacy as a social practice. Children speaking and vocalising tends to be understood either as an autonomous skillset to be deployed in any or all situations, or as a social practice, fluid and ideological (Pahl & Rowsell, 2006; Street, 1984). The autonomous model is dominant within literacy education, both in the UK (where we are based) and elsewhere, focussing on children's ability to correctly apply vocabulary and use expressive language, such as asking for things they need, at a young age. Little provision is made for these communicative practices to look different in different social contexts; rather these early literacy practices are assumed to be a fixed and measurable set of abilities that all children need to acquire as early as possible (Clarke, 2016; Flewitt and Roberts-Holmes, 2015). For example, UK schools currently carry out a phonics screening check for 6 and 7 year olds, which Flewitt and Roberts-Holmes (2015) describe as an example of the regulation and datafication of childhood. The inclusion of nonsense words, that is, phonetic sounds for which there is no established social meaning, is intended to provide "the purest assessment of phonic decoding", according to the UK government Department for Education. The notion of 'purity' here implies that literacy skills exist separately from a social or environmental context.

This narrow, decontextualised approach to young children's literacy and language has been heavily critiqued by linguistic anthropologists, who point out that a focus on nouns, labelling the world, and parent-child talk is unusual anthropologically and a specifically western, middle class approach to socialising young children (Avineri et al, 2015). Thus conceptualising literacies as skills-based practices separate young children's communication not only from its socio-political context (Heath, 1983), but from the materiality of literacy practices, which are always about parts of a physical body (hands, vocal cords, mouths, tongues and feet) moving and vibrating in place (MacLure, 2013).

Conceptualising sound

To help us hear sound beyond the narrow focus on language in literacy pedagogies, we draw on the overlapping fields of sound art and sound studies. From the 1950s onwards, sound artists and experimental musicians have explored sounds normally excluded from the dominant frames of language and music, bringing silence, noise, environmental and ambient sounds into the circuits of culture, positioning them as worthy of attention (Cox, 2009), and thereby raising questions about their functions and significance. Applying this expanded sonic sensibility to early childhood literacy, our first proposition is that sounds are always created by vibrations in place, and that these vibrations extend far beyond the word-sounds that dominate literacy education (Gershon, 2011, 2013). Understanding that sound occurs without humans, and that it may be beyond or at the limits of human perception, decentres words, repositioning them as just one small subset of a wider world of vibration.

One key distinction in sound art is between soundscape composition, which uses environmental recordings representationally to produce sonic ethnographies (Drever, 2002; Rennie, 2014), and musique concrete or acousmatic music, which promotes what Schaeffer (2004) called reduced listening, whereby sounds are approached as 'sound objects': pure sounds, to be listened to as sounds in themselves, shorn of indexical links with the world. By leaving open questions of what a sound indicates, signifies or represents, reduced listening makes space for the play of the imagination and the production of new associations. This freedom comes at the cost, however, of

separation from the bodies that created the sounds, with all their extra-sonic materialities, histories and politics (Kim-Cohen, 2009).

These radically different approaches demonstrate our second proposition: that sound is multiplicious, working in different ways across different bodies, materials and environments. Sound always exceeds any attempt to pin down what it is and does. As such, there may be merit in cultivating a *range* of modes of listening, rather than closing down the agenda around one privileged type of audition. Sound studies "reminds us of the inclusive nature of sound, both in its perception and the sources that trigger reception." (Gershon, 2011, p.72) Sound can be heard as a subjective perception, but it also functions as an external force independent of its audition; it can represent and communicate meanings, but it also works on more visceral, asignifying registers by affecting bodies (Duffy & Waitt, 2013; Gallagher, 2016; Waitt, Ryan, & Farbotko, 2014). It arises from the movements of material bodies, but it also escapes those bodies, leaving them behind. This multiplicity is what makes sound so generative (Gallagher, Kanngieser, & Prior, 2016).

In relation to literacy, sound can be heard as meaningful, but also as more than that – floating free of its moorings in specific words and worlds, becoming a spark for the imagination, a carrier wave for all kinds of affects and associations, and a way of reconfiguring relations through the play of vibration.

Early childhood literacies and more-than-human semiotics

In both autonomous and social understandings of literacy practices, sound is generally equated with words, and how these are acquired by children through interactions with other humans. Yet non-linguistic, non-human sounds also play an important part in children's expressive and communicative practices, in ways that reveal the limits of both autonomous skills-based and social-multimodal approaches to literacy. Both approach literacy as a functional human activity, grounded in rationality, intentionality and purpose (see also critique from Kuby, 2017; Leander and Boldt, 2013; Rowsell, 2014). Recent research in early childhood literacies considers children's playful enactments of sound and movement as examples of embodied literacies (Wohlwend, 2013), or "knowledge-in-motion" (Wargo, 2017, p. 393).

Whilst Wohlwend draws attention to multiple communicative modes as texts (albeit action texts, played not written), Wargo (2017) experiments instead with reading "sounds-as-sounds" (p. 406). More recently, Wohlwend et al. (2017) discuss play and design as literacies that are both sense-making and *sensory*, describing 'sense' not only in relation to social meaning-making and cultural histories, but as suggestive of bodily response to histories with the material environment; "the sense our bodies make of experienced materiality" (p. 446). Building on this work, we call specifically for a greater attention to the materiality of sound-making, through children's bodies in places (Hackett and Somerville, 2017; Maclure, 2013). As we have argued above, sound is both grounded in place, and can transcend place; voices and sounds arise from the movements of materials but always escape their material origins.

As a way to navigate a path through this multiplicity of sound in relation to children's literacy, we turn to Kohn's (2013) work on more-than-human representation. Kohn, drawing on Peirce, offers concepts for analysing meaning making beyond the human, through the interplays between the symbolic, indexical and iconic functions of sounds within relations between humans and more-than-human forms of life. While Kohn's work focuses on signs between 'living' entities such as animals and plants, we are interested in what his ideas might afford for the analysis of sounds as they arise from any kind of material body, including objects and things. While theoretical developments such as non-representational theory, new materialism and speculative realism attempt to go beyond a focus on meaning by pointing towards a-signifying forces outside the ambit of the conscious humanist subject, Kohn addresses anthropocentrism in a different way, not by jettisoning semiotics but by extending it beyond the human.

For Kohn, all living beings are constitutively semiotic. Living beings participate in the production and circulation of signs, which Kohn considers to be the basis of thought. He draws on Peirce's distinction between three kinds of representation: the icon, the index, and the symbol. The symbol is situated squarely within the human domain, as a type of sign whose meaning is formalised through abstract cultural conventions, particularly language. In symbols, there is no intrinsic relationship between the sign and its meaning; the relation is socio-culturally produced, in relation to other symbols. For example, the word-sound *tree* could in principle be attached to

anything, but in the English language is used to indicate a type of *plant* that has *branches* and *leaves*, rises up from the *ground* and so on. Symbolic representation dominates early years literacy, which focuses on increasing the quantity of vocabulary children can use, independent of context.

Iconic and indexical representation are, for Kohn, more capacious in their ability to describe how signs also circulate amongst non-human entities. An icon involves some kind of physical resemblance between the sign and what it means. That water *splashes* and twigs *crack* are representations that take their meanings from the movements they describe, rather than their relationships to other words. In this sense, icons are about continuity or habit. Indices, meanwhile, involve an empirical sensory experience that serves to focus the attention, and are "in some way affected by or otherwise correlate with those things they represent" (ibid., p.22). For example, a knock on the door of a home may indicate to a pet dog that a human is close to their territory, stirring them to bark. This focus of attention is associated with a change, an otherness or a "radical discontinuity" in what is being experienced.

These ideas are useful in rethinking how sound functions in literacy practices. Both iconic and indexical representations rely heavily on aesthetic or affective elements, such as sounds, for their impact or meaning. Icons aesthetically replicate or mimic something else, and this is at the core of how they represent. Indexes gain their meaning from the way in which they create change, otherness, a shift, and in this sense, affect is key to how they represent. Therefore, in our use of Kohn, we want to extend his categories of semiotic representation to more deeply consider the role of aesthetics and affects in children's sound making and hearing.

Research methods

The data presented in this paper were produced through the 'Sounds of Childhood' research project, which explored how young children experience sound in the environment. Based in Doncaster, a large market town in the north of England, the project was a collaboration between Doncaster Civic Trust, a charity dedicated to improving the quality of the town's built environment through educational initiatives, and academics from early years education, architectural acoustics and the sociology

of childhood. The participants were children aged three and four (i.e. within the UK's Early Years Foundation Stage curriculum) and their parents, recruited from a primary school with which the Doncaster Civic Trust had a pre-existing relationship from previous projects. The project researcher and a collaborating artist worked intensively with three children and their parents; the research was small-scale, in-depth and qualitative.

In order to investigate how children experienced sound in the environment, the children and parents were invited to go on sound walks, to describe and imitate sounds, to draw and map sounds and tell stories. We wanted to explore:

- How do young children experience sound in the environment?
- What is the relationship between environmental sounds, the sounds young children make with their bodies, and words?
- How can thinking more widely about all sorts of sounds support young children's learning?

All the data presented in this paper were produced through one of the sound walks. These walks began with the negotiation of informed consent, after which the parent and child were invited to pick their own improvised route through the local neighbourhood surrounding their school, with the aim of exploring and listening to sounds happening in the environment. The researcher and artist followed along behind the parent and child but, as far as possible, did not speak; almost all the spoken interactions were between parent and child. The walks were recorded using (i) video, using iPods attached to the arms of the parent and the child; (ii) audio, using professional recording equipment operated by the artist, with omnidirectional microphones to gather sound from all directions; and (iii) photographs, from a digital camera operated by the researcher, with photos taken when the child and parent stopped to listen. The data set produced was thus both multimedia and multimodal.

In this paper, we present analysis of data from one walk, chosen because these data seemed to us to reveal particularly interesting relations between sound and literacy –

relations which were also apparent in data from the other walks, but in a less richly detailed way.

Our analysis involved reading transcripts of the discussions that took place during the walks, listening back to the audio recordings, watching the video recordings, examining the photos, and shifting between these different media to make sense of the events that were registered. The authors did this both individually and collectively, followed by email dialogue to identify and discuss what we felt were moments of significance in the data, in which we could hear sound functioning in relation to literacy in particular ways.

One notable facet of this process was how these different media gave us different impressions of what had happened. Within the transcripts, children seemed to be encouraged by their parents to identify, name, describe and ascribe causes to sounds, by the adult asking questions such as 'What's that? Did you hear that one? What made the sound?' The audio recordings, meanwhile, registered the multiplicity of sounds encountered on the walks, in a way that revealed the inadequacy of textual transcription as a way of working with sound (Gallagher & Prior, 2014; Gershon, 2011). The time-based nature of audio, as compared to text, meant that pauses in particular came to life, disrupting the ways in which we read the transcript, where it was easy to assume that the conversation was a more continuous flow. The videos and photos provided additional perspectives, particularly revealing marked contrasts in the different heights at which adults and children were moving through the world. For example, photos taken by the researcher while walking through tall grass showed the scene from above, looking down on the landscape, whereas the video shows how the child stood amongst the grass, enveloped by its mass. Both the video and audio recordings brought to our attention the slow pace of the walk, and gave us the impression that the parent was more open to the child's imaginative interpretation and anticipation of certain sounds than the transcripts had led us to believe.

Our analysis thus confirmed the importance in multisensory ethnographies of working across multiple forms of data. Just as the field of literacy studies is working towards more contextualised understandings of the role of the human and nonhuman in terms of how literacy is experienced, so audio-visual data, as representations of an event,

offer different possibilities for what aspects of (non)human (non)representations are made visible and audible (Daza & Gershon, 2015; Garrett, 2010; Gershon, 2011).

Machines that 'grumble' and 'grrr': icons, indices and symbols and different registers of listening

Claire (the parent) and Rosie (the child) begin their walk inside the school. The audio and video recordings register how Rosie looks into rooms, pauses and then declares "none in there". As they walk outside through the school entrance, Claire's voice can be heard, mentioning how quiet it is outside. A distant humming sound, increasing in volume, can then be heard in the audio recording as Claire and Rosie walk across the school grounds.

> Claire: What's that?
>
> What's that?
>
> What does that sound like? What is it?
>
> Rosie: Cutting the grass.

Chion (1994) uses the term causal listening to denote these kinds of listening practices that are directed towards identifying the source of the sounds that can be heard. Causal listening is a taken for granted, dominant mode of everyday listening, which does not dwell on sonic qualities but is instead focussed on gathering knowledge about the listener's immediate environment. Yet while causal listening often strives to impute sounds to objects (in this case, a lawnmower), Rosie's response to Claire's question describes an action. As such, Rosie's causal listening stays closer to the vibrational movement of sound, as something generated by the physical action of grass being cut, rather than hearing it as an index of an object. Claire then asks further questions, shifting away from causes towards an appreciation of the texture and timbre of the sound:

> Claire: Are they cutting the grass? What sort of noise is it? Is it a squeaky noise, is it a rattily noise, is it a grumbly noise…?
>
> Rosie: Grumbly noise.
>
> C: A grumbly noise. What does it sound like? What else grumbles?

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R: Our tummies.

C: Your tummy. It does a lot, doesn't it?

R: Yeah. Because it might say, it might say, 'I want some food', wouldn't it?

C: [Laughing] It might do, yeah.

In this instance, Claire tries to categorise the noise using a symbolic vocabulary of adjectives. Yet these words also have onomatopoeic qualities, moving towards an iconic mode that begins to mimic the sound itself rather than addressing what the sound symbolises, represents or indexes. When Rosie settles on the suggestion of a 'grumbly' noise, Claire switches back to causal listening, trying to pin this sound onto other objects that make grumbly sounds. In response, however, Rosie makes a tangential leap, between 'cutting the grass' and her own body. Throughout the data, we found repeated instances of this kind, in which children's listening produced associations between disparate things. As LaBelle (2010) argues, sound constantly moves between bodies rather than being tied to them, and as such has a tendency to cross boundaries and forge unexpected relations. Rosie articulates that the grumbling of her tummy indexes hunger; it communicates that her body wants food. As Claire and Rosie talk about and explore sound together, their interactions shift across these different listening registers.

Of relevance to Rosie's sense of sound as bodily movement is Maclure's (2016) critique of language for the way in which it overlooks bodily functions. Sounds emerge materially; voices come from the body, through mouths, tongues and vocal cords. Sound is always material, and never belongs solely to one person or object. MacLure advocates for the potential of bodily noisea on the edge of language, such as laughter, sighs and snorts, as offering points of entry for analysing the materiality of language. Yet these bodily sounds always exist within and in relation to a wider sonic environment. We can hear something of this entanglement in the extract that follows.

Rosie and Claire are walking on a pavement with a road on one side and railings that bound shrubs growing behind them on the other. Claire is walking on the side of the pavement next to the road, and Rosie next to the railings. In the audio recording, an

inharmonic droning sound can be heard, increasing in volume. Based on the conversation between Rosie and Claire, the source of this sound is not yet visible:

> Claire: Can you hear anything coming?
>
> Rosie: Mmm hmm.
>
> C: What does that sound like?
>
> R: A car.
>
> C: A car. Do you think it's a little car or a big car?
>
> R: A big car.
>
> C: A big car.

Claire defaults to causal listening again, inviting Rosie to pin down the sound she can hear as indicating the presence of a particular type of object. The sound gets louder, the vehicle then comes around the corner and onto the road, at which point an element of surprise arises:

> Claire: It's better than a big car. Look at that! It's a bin lorry, isn't it? What sort of noise is that? What sort of noise does a car make?
>
> Rosie: [Makes a short humming 'grrr' sound]
>
> Claire: [Imitating Rosie] Grrr. Yeah. Let's see what we can hear down here.

From the point of view of the transcript, this interaction between Rosie and Clare reads as an example of 'wordism' (Avineri et al, 2015), whereby children are encouraged to label their world through words. However, listening to the audio data it becomes clear that the sound of the lorry also operates as an index, indicating something not present but that which may happen (a vehicle coming past). As index, it focusses attention on a particular version of an absent future, through its sense of otherness, shock or change (Kohn, 2013). As the noise of the lorry becomes louder, it dominates the soundscape. Claire then asks Rosie about the sound, and Rosie mimics the grrrrrr sound with her voice, representing the lorry through an iconic sign that is physically similar to the noise the lorry itself makes. In this moment, Rosie is representing the event itself, rather than using a more symbolic means of representing the sound of a vehicle (such as 'brum brum'). Claire enters into Rosie's listening as she mimics the sound made by her child. Commonly in the transcripts from the sound

walks, adults name sounds, and children tend to both name and imitate them. However, in this case the Rosie's sound-making practice encouraged Claire to move beyond the symbolic, disrupting a focus on the symbolic patterning of sound.

In these two extracts, we have noticed how Claire and Rosie move across a variety of different listening modes as they engage with various sounds and with each other. Their listening often begins with and returns to causal listening, through which Claire encourages symbolic representation, inviting Rosie to name sounds and objects with words. Through Rosie and Claire's entanglement with place, however, their listening is drawn into indexical and iconic modes. Kohn argues that these different forms of representation are nested within each other; the symbolic requires the iconic in order to emerge. We would add, with their less severe abstraction between sign and meaning, iconic and indexical representations frequently evoke affect more strongly than symbolic words. In the case of sound, iconic representations are onomatopoetic: they have a physical continuity with the movement of the sound being represented, and hence with its embodied materiality. As such, iconic representations lend themselves to generating relations and associations between bodies, as Rosie did when she linked the grumbling sound of a lawnmower to the rumbling of her own tummy in hunger.

'We might see tigers': sound and the movement of material bodies

Claire and Rosie are walking towards some scrubland. Rosie ponders upon what they might hear when they get to the scrubland:

> Rosie: We might see ti [pronounced 'tie', i.e. tigers], and they might be
> through this bit.
> Claire: We might see tigers? Well, you let me know if you hear a tiger, OK?
> Rosie: Mmm hmm, 'K [OK].

Claire and Rosie walk along a small path bounded by long grasses and wild plants. Rosie's view is below the height of the vegetation, and she is surrounded by this landscape. Rosie's imagining that they might see tigers (whether she believes that they are there or not), seems more understandable when looking at the video footage

taken from her vantage point, which shows a dense mass of plants all around. This viewpoint contrasts with the adult vantage point, which can be seen in a photograph taken by the project researcher, whose height gives a more elevated overview of the path, the grasses and trees that rise above them, and a lamppost in the distance.
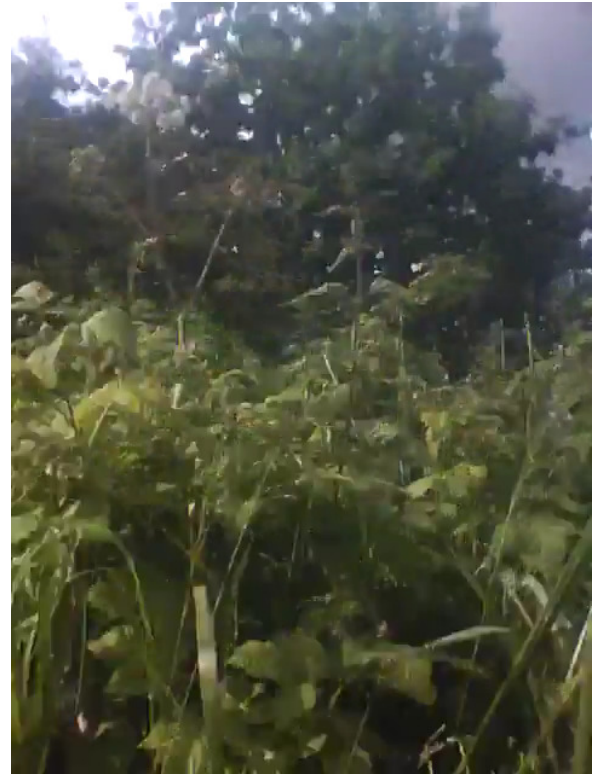
Claire encourages Rosie to think about what might live above the grasses beyond the realm of the tigers:

Claire: Can you hear anything up in the trees?

Rosie: Yeah.

C: What are they?

R: They're making a whistling noise.

C: What do you think they're telling each other?

R: Don't know.

C: What's that noise? [Stops walking] Did you hear that one? What did that sound like?

R: A birdie.

C: Did it sound like a birdie?

R: Yeah.

In this instance, Claire is prompting Rosie to identify the sounds of birds, which can be heard as a high pitched chirping and twittering in the audio recording. Claire also encourages Rosie to pick out this sound later in the walk too. Once again Claire is using causal listening, encouraging Rosie towards the logic of interpreting the twittering sound as an index of the presence of birds, which can then be named symbolically. Initially, however, Rosie's listening is closer to Schaeffer's reduced listening, in which, as discussed above, attention is focused on the sonic qualities of a sound rather than on its causes or meanings. Rosie's answer to Claire's question 'what are they?' stays with the timbre of the sound, which she describes ('whistling'), rather than interpreting it causally as a sign of birds. Claire then invites Rosie to anthropomorphise the birds by imputing semiotic communication to their calls – 'What do you think they're telling each other?' – but again Rosie does not enter into this interpretive game. Her 'Don't know' response leaves the whistling sound in a world of non-human otherness, of sounds that do not straightforwardly index knowable objects or convey comprehensible messages. Claire continues to incite Rosie to causal listening and symbolic naming, however, asking 'What did that sound like?' Rosie then finally joins with her mother's listening, providing the 'correct' answer: that the whistling signifies a bird.

Adults often socialise children to focus on a single object of attention (or small number of carefully, rationally selected objects), which is then connected to fixed and concrete meanings (it is a tree, it is green), in a "reflexive act of labeling that signals to the infant that the world is discrete and categorizable" (Avineri et al, 2015, p.73). As such, these specific western middle class literacy practices foreground not only words (or symbolic representation) but a curation of the world, in which particular aspects of the milieu are selected to be symbolically represented. As Maclure (2016, p.176) points out, this curation communicates to children

> what is normal and meaningful, and thereby demonstrates the
> very possibility of pinning meaning to the body of the world,
> and the body of oneself…..[It invites children] to think in
> terms of the fixed relations of similarity and difference

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afforded by the logic of representation…. At the same time

[indicating] that it is possible to stand 'outside' this world in

order to observe and comment on it.

Such 'narrating of the world' by the adult for the child results in an auditory narrowing, in which particular sounds are mapped onto particular imputed causes, and these causes named with symbolic language. A rhythmic, repeating, staccato sound, rapidly sweeping through mid to high frequencies, varying in intensity, coming from above, perhaps arriving from several directions at the same time, variously reflecting off and being absorbed by the surrounding environment – all of this sonic richness is reduced down to the word 'birdie'. Yet Rosie's listening in the scrubland was not wholly subordinated to this symbolic labelling. Initially she heard the bird calls as whistling sounds, rather than as chirps or tweets; we wonder what other kinds of learning might have been afforded, both for Rosie and Claire, if the conversation had explored these aesthetic aspects of more-than-human sounding, rather than moving so quickly onto the symbolic register.

The multi-sensoriality of these encounters is also evident from our data. Rosie's listening is part of a wider sense of place, evident in her comments about finding tigers when moving through long grass. Returning to Kohn, the form of the long grass is indexically representing something about the absent future – perhaps the presence of creatures (potentially monstrous creatures such as tigers) hiding within it. It is questionable in this example whether Rosie is suggesting that tigers are actually hiding there. It seems more likely that she is engaging in playful storytelling, perhaps making use of tropes from western children's fiction in which exotic animals frequently feature as key characters. The imagined presence of tigers, lions and bears was a recurring theme weaving its way through the walk, and this is something we interrogate further in the following final section of our analysis.

"It must be a lion in home": sound propagates beyond the material

As described above, Rosie and Claire's walk elicited a mixture of comments prompted directly by their surrounding environment and more imaginative departures. These are instigated by Rosie and are registered throughout the data. Specifically, at

seven distinct points in the transcript, Rosie returns unprompted to the topic of wild animals, including monsters with rumbling tummies, looking for tigers, seeing bears in the sky, and lions snoring, roaring and eating their breakfast. Towards the end of the transcript, Claire acknowledges this recurring theme, commenting 'Oh, dear. That's tigers in the woods, lions in the woods and bears in the sky!'

Here is another example of this imaginative narrative, where, on leaving the scrubland, Rosie says to Claire:

Rosie: Didn't hear tigers, did we?

Claire: Pardon?

R: Didn't hear tigers, did we?

C: Have you been hearing fairies?

R: No. We didn't hear tigers.

C: No, we didn't hear tigers.

R: Because [inaudible] must have not been through this way.

In the previous section, we showed how Rosie's comments about tigers seemed to be entangled with place, particularly the long grass as seen from a child's eye view. However, there also seemed to be something excessive, transcending both the materiality of place and Rosie and Claire's responses to it, in Rosie's repeated return to stories and comments connected with wild animals (lions, tigers, bears). The focus of Rosie's attention is on the sounds that were not there, but which she seemed to have been listening out for. As such, Rosie's listening practice is entangled both with the real and the imagined. Her experience of the scrublands brings forth imaginings of tigers. The sensory encounter between Rosie and the scrubland influence how she storied her walk, whilst at the same time, these stories depart from a logical description of what could be observed or evidenced.

Claire and Rosie walk along a footpath bounded by redbrick houses on one side and a road on the other. Rosie is walking along the side next to the road. Just after they pass a telegraph pole, which looks like it has been carved with a knife (see images below), they both stop. Claire encourages Rosie to identify a loud sound that has captured Claire's attention. Rosie looks ahead beyond the telegraph pole as her mum asks her

what she can hear. There are pauses between Claire's questions and Rosie's responses, suggesting that Rosie is engaging with the questions and a practice of listening:

Claire: What is it?

Rosie: Don't know.

C: What do you think that is? What does it sound like?

R: Don't know.

C: It's loud, isn't it? What do you think that could be?

R: A lion.

C: A lion. There's lots of animals today, isn't there?

R: A lion snoring.

C: A lion snoring? Oh, dear, we'd best be quiet, then, so we don't wake him up, hadn't we? [Pause] I don't think I'd want a lion on top of my house.

Claire and Rosie continue to walk down the street. Rosie starts to talk about where the lion might be as she walks past the houses:

    Rosie: It must be a lion in home.

Claire: Was it a lion in a home? A lion in the ground, here?

R: Yeah. Must be in the woods.

[Pause, bird noises, a car alarm]

C: Can you hear anything else?

R: No.

C: No? Just the lion, still?

R: Yeah. The lion and the mummy lion. And the baby lions.

C: Is that why some are louder than others?

R: Yeah. Bet they're in their beds.

C: I hope so, if they're snoring.

R: Baby lions are snored.

C: Oh? What are they doing?

R: They're eating breakfast now.

Rosie and Claire are walking through these streets early in the morning, past homes in which families are getting up and preparing for the day. It is possible that this context has some bearing on the lions in Rosie's account: they live as a family, they are in bed, snoring, then eating breakfast. Thus Rosie's narration of her soundscape seems both entangled with place, and transcending a rational narration of what can be perceived and described with words. We might understand this kind of listening-story telling using Ingold's (2007) account of how lines of narration unfold in the moment, resisting either a beginning or end, as movement, gesture and story lines are taken up and passed between people. Thus, myths and stories represent a distinct form of telling, in which articulation and specification are not the purpose (Ingold, 2013). Rather, myths and stories are non-articulated ways of telling, in that they bely the logic of symbolic representation.

Conclusion

This paper has explored how close attention to sound can help to rethink early childhood literacy. We have attempted to hear how children's sound making and listening practices (i) are entangled in place, and produced through material bodies; and (ii) go beyond the rational, transcending or exceeding materiality. In their argument for interdisciplinary work across arts practice and education, Holmes and

Jones (2013) propose a process of decomposition, in which the juxtaposition of different theories and disciplines can interrupt banality to make something new. Inspired by these potentials, in this paper we have interrogated what happens when sound art and sound studies are brought into contact with early childhood literacy.

The aim of this experiment is to interrupt the skills-based conceptualisations of early childhood literacy which continue to dominate policy, and which abstract literacy practices from the materiality of bodies-in-place. As MacLure (2013) points out, language used in this way runs the risk of obscuring the reality of the world that it purports to represent. We have drawn on Kohn to provide a framework for understanding how representation can take place in other ways. Iconic representations, such as noises children make to imitate sounds they hear, and indexical representations, such as the sound of an approaching vehicle, evoke the world aesthetically and affectively rather than symbolically. They make use of bodily sound-making in less formally structured and scripted ways than words, and remind us that literacy is entangled with the materialities of bodies.

In our data, iconic and indexical representation caused the process of casual listening to stutter (Maclure, 2013), as children made non-linguistic sounds that blended with a wider sonic landscape, creating leaps between objects and processes that could be heard in the environment, and more unexpected associative or imaginative connections. Understanding non-linguistic noises as iconic forms of representation is a useful counter to the tendency within early childhood pedagogy to encourage young children to make non-linguistic noises only as a precursor to words. Young children's iconic noises may also be a way of connecting research on early childhood literacy more strongly with the materiality of language itself.

In conclusion, we want to argue that a wide range of sound-making and listening practices, not just the pronunciation and comprehension of words, should be valued in early childhood literacy. We also want to oppose the abstraction of language from vibrations in place. Listening and sound-making dynamically unfold together, and cannot be considered as isolated from the milieus in which they happen. Sound moves across, between and beyond different bodies, including children, animals, objects, buildings and landscape. Sound always comes from bodies in places, but it can also

transcend these bodies and places, escaping their confines to cross thresholds between different materials, registers and modes of response. These qualities of multiplicity and fluidity make sound difficult to pin down analytically, but they are central to how sound functions – doing multiple things, often at the same time, in ways that extend far beyond the narrow conception of the auditory that dominates literacy curricula. Children's literacy emerges from the unfolding vibrational relations between breath, mouth shapes, vocal cords, ears, cognition, memory, sign systems, objects, materials in the environment, embodied sonic affects, and so on.

Sound, in this sense, acts as a kind of everyday magic: a flow spilling from the outside in and the inside out, that is available for all kinds of actions, signals, meaning-making, power games, imaginative play and monstrous fantasies. What we are arguing for is not a wallowing in the amorphous chaos of sound, but rather practices of listening that allow a little more space for this chaos to play, to generate the kinds of novelty and surprise that make learning transformative rather than a narrowly instrumental development of predetermined skills. Such practices interrupt, disrupt or slow down the drive to fix sounds to knowable, nameable things, to hook clearly defined word sounds onto clearly defined objects. This is not to deny the usefulness of symbolic representation, but to recognise that sound always does more than this, and that this 'more than' is worth listening to.

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