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What Does it Mean to Sing With the Earth?

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Biography

Dr. Dave Camlin's musical practice spans performance, composition, teaching, Community Music (CM) and research. He lectures in music education at the Royal College of Music and Trinity-Laban Conservatoire and was Head of HE / Research at Sage Gateshead from 2010-19. His research interests include: CM, especially group singing; music, health and wellbeing; musician education. He has pioneered the use of Sensemaker® 'distributed ethnography' as a research method for understanding artistic and cultural experiences. His recent book *Music Making and Civic Imagination: a Holistic Philosophy* explores the potential of musicking as both a complex adaptive system (CAS) and a global resource for sustainability.

ACCEPTED VERSION

What Does It Mean to Sing with the Earth?

Abstract

A small group (n=11) of singers from the same community of musical practice in the UK participated in focus group workshops to reflect on their experiences of group singing in nature. The study found that group singing in nature was considered to be a (non-religious) spiritual practice which enhances participants' experience of both *communitas* and their connection to the natural world. Participants made an important distinction between singing *with* the earth - communing with the natural world in a more spiritual way - and singing *for* the earth, a more political activity in response to local and global environmental issues. From a Posthuman perspective, diffraction – as both the physical and metaphorical process of exploring ‘differences that matter’ (Barad 2007, 46) - is identified as an important concept for understanding how different routes to wellbeing can be mutually constitutive and intra-active. De-centring human experience by amplifying the co-constitutive role of other agencies like the natural world highlights the ontological and epistemological complexity of such experience.

Keywords: group singing; eco-choir; singing in nature; diffraction; posthuman

Introduction

From the perspective of social ecology, the current ecological crisis is inherently social, in that it stems from an attitude of domination which has arisen within human society over time, and which has extended to include domination of the natural world (Bookchin 1984, 35). It therefore follows that a resolution of the ecological crisis requires social solutions which support the revision of attitudes of domination between humans, and which extend to non-human and more-than-human entities. As a human activity which fosters kinship through the ‘performance’ of values which are inherently pro-social, music making in general - and group singing in particular – presents itself as part of a potential social solution to the ecological crisis. However, the conditions which

support such a revision of attitudes of domination are not clearly understood, especially when it comes to understanding how such revisions might extend beyond human society to the natural world.

This article presents the findings of a Close-to-Practice (BERA, n.d.) research project investigating the experiences of participants in a singing ‘community of musical practice’ (CoMP) (Kenny 2017) led by the researcher. Participants reflected on their experience of singing in nature over a series of artistic projects from 2015 – 2023, including weekly choirs, film projects, mountain-top singing, post-pandemic recovery outdoor ‘pop-up’ choirs, environmental protests and other group singing activities. In a previous study (Camlin, Daffern, and Zeserson 2020) a participant had commented on their experience of a mountain-top singing project where ‘somehow it was the mountains that were reverberating with us, if you see what I mean, rather than an audience’ (p.10) and this kind of reflective insight about the enhancing potential of singing outdoors in nature on participant experience sparked the development of more opportunities within the CoMP to do so.

The natural world represents both a non-human and a more-than-human context for group singing, and this study therefore investigates the meaning that participants attribute to these kinds of cultural encounters with the natural world over time, by addressing the main research question, ‘what does it mean to sing with the earth?’ By exploring the meaning that participants attach to their experiences of singing in nature over a period of a number of years, what this study hopes to illuminate is how attitudes of kinship – both within human singing groups and extending beyond them to the natural world – evolve and are shaped by such encounters. In other words, the study seeks to understand how attitudes of kinship toward the natural world evolve both diffractively and intra-actively through the medium of group singing.

Review of Literature

A substantial body of research evidence on the benefits of group singing for human health and wellbeing has been amassed over the last twenty years, in particular recent evidence reviews in singing and pulmonary health (Kim, Yeo, and Kim 2023), Parkinson's Disease (Machado Sotomayor et al. 2021), cognition / dementia (Lee et al. 2022) and mental health (Williams, Dingle, and Clift 2018). There is a recently established comprehensive agenda for best practice in group singing, health, and well-being (Dingle et al. 2019), a dedicated UK practice-research network (Singing for Health Network, n.d.) and a current AHRC-funded research network (Higgins et al. 2023) exploring the issue.

Other research has focused on the health-promoting benefits of group singing as a resource for 'healthy publics' (Camlin, Daffern, and Zeserson 2020; Hinchliffe et al. 2018), and the notion of 'mutual recovery' (Crawford et al. 2013) for both healthcare professionals, patient carers and the musicians involved (Forbes and Bartlett 2020). In such contexts, it is the experience of 'communitas' or 'collective joy' (Turner 2012) brought about through collective 'entrainment' (Clayton 2012) – to the rest of the group, and to the music collectively produced - which is considered significant in underpinning the positive effects on individual wellbeing, social cohesion and community development (Camlin 2023, 47–49).

The means through which music making - and group singing in particular – achieves its positive effects are considered a 'complex adaptive system' (CAS), with (Fancourt et al. 2021) identifying over 600 possible psychological, biological, social, and behavioural mechanisms which underpin the wellbeing benefits of leisure activities more generally. Focused mainly - but not exclusively - on individual measurable effects, such comprehensive frameworks tend to de-emphasise the interpersonal,

spiritual and musical dimensions of music making which are often significant in participant experience. Rather than viewing this CAS as a ‘mixture’ of mechanisms which are ultimately separable into causal ‘inter-active’ relationships, an alternative view of music making is to recognise it as an ‘entangled state’ of its constituent mechanisms (Camlin 2023, 57–58), not reducible to such constituents, and only fully comprehensible as a totality or ‘gestalt’ of ‘vitality’ (Stern 2010). In the experience of group singing, such entangled states are commonly reported as quasi-spiritual ‘magic moments’ (Gabrielsson, Whaley, and Sloboda 2016, 746) where participants experience a sense of transcendence in and through the group feeling.

Such ontological issues find some resolution when viewed through a New Materialist / Posthumanist theoretical framework. Barad suggests that viewing a CAS as an ‘entangled state’ rather than a ‘mixture’ of its constituents is an important way of preserving its ontological complexity (Barad 2007, 297). The efficacy of group singing *can* be at least partially grasped by understanding how it might impact on changes in particular hormones like cortisol for example (Fancourt et al. 2016; Kreutz et al. 2004), but the complexity of other intra-active mechanisms – musical, neurobiological, behavioural, social – point to a more nuanced and potent total experience of vitality and transcendence arising from such complex entanglements.

Additionally, Barad’s concept of ‘diffraction’ or ‘reading insights through one another in ways that help illuminate differences as they emerge’ (Barad 2007, 38) performs an important function in preserving the inherent tensions between a natural sciences and a social sciences understanding of cultural phenomena, rather than resolving them entirely. I use the term to suggest that the effects of group singing in nature – as perceived by participants – are grounded in a complex of multiple intra-active psychological, biological, social, behavioural, musical and interpersonal

mechanisms, but that an understanding of the phenomena in its entirety is not reducible to any such mechanism or mixture of mechanisms. Rather, this assemblage of mechanisms represents an ‘entangled state’ which is not reducible to its components. To understand cultural experiences more diffractively, one needs to attend more closely to how participants express their experience of the assumed entanglements, which is what I set out to do in the Findings section of this article. This process of diffractive analysis – emphasising the ‘differences that matter’ (Barad 2007, 46) - serves to amplify resonances of participant experience, whilst preserving the highly individualised differences between such experiences.

In particular, the concept of ‘diffraction’ helps to deepen an appreciation of the concept of musical entrainment as a form of ‘waveform interference’. As an audible process, the negotiation of meaning as people manipulate soundwaves produced by their bodies in relationship with other participants – and potentially audiences too - is what lies at the heart of the group singing experience (Camlin 2023, 58–60); the perceived harmonious quality of a group sound as singers ‘tune in’ to one another is an index of both participant and audience enjoyment. However, the complexity of such entrainment may not be limited to soundwaves, as other waveforms – heartrate variability (Vickhoff et al. 2013) and alpha- and beta- wave emissions (Clayton, Will, and Sager 2004, 9) for example – may also be implicated. All of these relationships of attunement, be they sonic or interpersonally neurobiological may be representative of physical patterns of diffraction as they all involve the synchronisation of waveforms of one kind or another (Camlin 2023, 61).

Theories of entrainment tend to start with non-human materials such as Huygens’ observation of the synchronisation between pendulum clocks when operating on the same shelf (Clayton, Will, and Sager 2004, 3), highlighting the fact that

entrainment is a natural phenomenon, not just a human one. ‘Tuning in’ to one another through music making may feel like a uniquely human activity, but really anything which oscillates and which is coupled to any other such entity is subject to the physical effects of entrainment, so in that sense singers are behaving no differently to other matter when they entrain to one another. De-centring human experience in this way is an important step in recognising the complex physical processes at work during something as apparently simple as singing together.

A posthuman perspective is also important when it comes to questions of what meaning participants assign to their experiences of group singing in the context of the natural world. As the previous participant quote highlights, extending the feeling of resonance beyond the singing group to the natural world itself may be an important way of establishing group singing as a natural-cultural practice that ‘specifically acknowledges and takes account of matter’s dynamism’ (Barad 2007, 149) and which ‘locates the subject in the flow of relations with multiple others’ (Braidotti 2013, 50). Experiencing humility in the face of the natural world’s complex rhythms of existence – for example lunar and solar cycles, migration patterns, life cycles of long-living trees – and consciously ‘tuning in’ to those rhythms through activities like group singing can be an important way of re-balancing attitudes toward nature.

As well as being about the performance of musical works, Small (1998, 314) suggests that music making is about the performance of relationships, while Camlin (2023) argues that because of the complex interpersonal neurobiological processes involved, it can also be viewed as a ‘performance’ of particular humanistic values – love, reciprocity and (potentially) democratic justice (153-155) – which extend beyond anthropocentric concerns into a more world-centred attitude of ‘Terrapoltanism’ (130-32) or ‘becoming-with’ the earth and its other co-habitants ‘for a habitable, flourishing

world' (Haraway 2016, 168). In this sense, ethically-guided group singing – especially in response to environmental or ecological concerns - might be viewed as a conceptual 'interstice' within the fabric of capitalist reality (Bourriaud 1998, 14–15; Camlin 2023, 144–45) where posthuman ideals and social ecology intersect. In other words, 'performing' kinship in the context of the ecological crisis might be a way of establishing and deepening social connections which support the evolution of the necessary posthumanist attitudes to live more sustainably *with* the earth system rather than attempting to dominate, control or exploit it.

As a study of a particular cultural community which includes the researcher and the participants as active members, the study is also grounded in theories of situated learning (Lave and Wenger 1991) and communities of practice, where the activities of the community centre around mutual engagement around a joint enterprise – in this instance group singing of a 'shared repertoire' (Wenger 1999, 72). While I may have leadership responsibilities within the community, I remain one of its members, although perhaps more invested not just in how it reproduces itself and provides accessible routes for 'new-comers' to progress within the community through active participation in its practices, but also how those practices evolve and respond to a changing world. More precisely, as a community of *musical* practice (CoMP) the community represents a space where 'musical identities are [...] negotiated on individual and collective levels through sociocultural contexts where the relationship between the music, individuals and society is crucial to identity formation' (Kenny 2017, 29). Undertaking research into the CoMP members' perceptions of the community is therefore an important way of deepening the community's reflective capabilities.

Materials and Methods

Much of the research evidence surrounding the health and wellbeing effects of group

singing has been derived from time-limited studies, with comparatively few studies looking at longitudinal effects (Dingle et al. 2019), especially within specific CoMPs over their ongoing artistic evolution and development. Hence in this study, a clear goal was to explore what meaning participants assign to their experiences of group singing in nature over time and across different projects, to develop insights into how such meanings may evolve. Moreover, the intention of the study was to focus on a small group of singers from a single CoMP, to understand what sense some of its members make of its uniquely situated sociocultural practices, rather than to derive any more universal meaning.

As the research question implies, the approach taken is broadly phenomenological, seeking to understand people's perception of experience 'in terms of the meaning it has for the subject' (Gallagher and Zahavi 2012, 7). Epistemologically, the research question also implies a posthuman framework for understanding people's experiences of group singing in the more-than-human environment of the natural world. However, the research itself is primarily concerned with the perception of the impact of the more-than-human *on* human experience, rather than anything more mutually constitutive. While acknowledging the specific agency which more-than-human entities possess, this study sought to understand the human experience of such agency.

As close-to-practice research where the researcher also has a lead role within the community of practice and is therefore an inseparable part of that community, it is neither possible nor desirable to suggest that their perspective is not influential in shaping participant experience. As a practitioner-researcher, I consider myself to be a 'full participant' (Plowright 2010, 68) both in the practices of the community and in this research, influencing both the music making being discussed through my role as

musical director and the research process itself through collecting and analysing the data.

Therefore the research approach takes this inherent subjective influence into account, by maintaining an attitude of ‘epochē’ (ἐποχή) (Husserl 1931, 58–59) toward the research, highlighting how the beliefs and assumptions of the practitioner-researcher might condition participant experience, and ‘bracketing’ those beliefs and assumptions as far as possible so as not to unduly influence or shape participant responses. Hence, the research approach consists of two stages. In the first stage, I highlight the assumptions and beliefs which have guided my interest in the topic, and in the second stage I outline the methods I have used to gather and analyse data from participants, which minimise the influence of my own assumptions and beliefs. Clearly I cannot extricate myself entirely from the cultural entanglement of the CoMP, but in acknowledging my own biases and assumptions, I hope to avoid manipulating participant responses to suit my own narrative.

Epochē

To a great extent, the subjects discussed in the preceding review of literature highlight my own conscious conceptual assumptions and biases regarding group singing, namely that it represents a complex adaptive system (CAS), where the different components within the system operate ‘intra-actively’; in other words, they represent an ‘entangled state’ of components rather than a more causal ‘mixture’ (Camlin 2023, 57). As well as the various mechanisms outlined by (Fancourt et al. 2021), I believe participant experience is also shaped considerably by (in no particular order):

- The quality of the music being made,
- The way that the activities are led,

- The relationships (psychological, emotional and interpersonally neurobiological) between those involved, and their individual and collective social / biographical identities,
- The cultural and / or spiritual significance of any musical expression (particular repertoire or approaches, the particular occasion),
- The sociocultural context and traditions of the music making,
- The materials involved, for example voices, instruments, venues, acoustics, locations.

I believe that music making – when undertaken with ethical intent – represents a ‘performance’ of the humanistic values of love and reciprocity (Camlin 2023, 153–55), because of the very specific ways in which participants must ‘tune in’ to one another through the sounds they co-produce and the interpersonal synchronisation of their neurobiology, leading to feelings of ‘self-other merging’ (Tarr, Launay, and Dunbar 2014) and so-called ‘magic moments’ (Pavlicevic 2013) where they may feel their ‘precious sense of self drifting away on a wave of harmony’ (Camlin, Daffern, and Zeserson 2020, 11). In non-auditioned contexts, music making may also represent the ‘performance’ of the value of democratic justice, ‘where the collective ambition of the group cannot be realized at the expense of the development of its least musically accomplished participant’ (Camlin 2023, 155).

As musical director, I also influence the CoMP in artistic and creative ways. While we do sometimes engage in collaborative composition, a lot of the repertoire is material which I have composed, and I lead the singing, usually (although not always) by standing at the front of the group/s and conducting their performance. Some of the groups I lead are specifically constituted to address environmental concerns, and the repertoire reflects this. Ideologically, I view the artistic work I undertake – including the

choirs - as about fostering attitudes of ‘Terrapolitanism’ - changing ‘the world within my reach’ (Erelli 2006) - as a way of responding to global issues, in the spirit of social ecologists who suggest that environmental issues have social causes and therefore require social solutions (Bookchin 1984, 35). I believe that music making is well-placed to establish social ‘interstices’ (Bourriaud 1998, 16) outside of the purview of Capitalist reality where alternative social arrangements can be imagined and enjoyed (Camlin 2023, 144).

Focus group workshops

To place all of these assumptions and beliefs within a ‘bracket’ for the purposes of research is not straightforward. By choosing to continue to sing within this particular CoMP, participants are agreeing at least tacitly to share some of my own assumptions and beliefs. However, as the research is exploring the meaning that participants make of their experiences of singing in *this* particular CoMP where I have a leadership role, it is simply not possible to disentangle this relationship, and more pertinently it is the nature of these entanglements between leader/s and participant/s which condition experience.

Focus Group Workshop was selected as the primary method for the study, providing opportunities for participants to engage in dialogue with each other as way a) developing collective insights and b) minimising researcher influence. The project received ethical approval from Royal College of Music Ethics Committee on November 30th 2023 (ref 231110). Participants were recruited from current members of choirs led by the researcher, and 11 singers expressed an interest in being involved. They were provided information about the project (appendix i) and gave their consent to participate via a digital survey (appendix ii). Instructions for the workshop were purposefully simple, to ensure as much group autonomy as possible in their involvement in the tasks (appendix iii). Using a series of printed photographs of singing activities undertaken by

the CoMP between 2015 – 23 as aides-memoire, participants were invited to discuss the primary research question ‘what does it mean to sing with the earth?’, with instructions to divide the ‘air-time’ equally between all participants, to speak about one’s experience of a particular activity, or to listen to others’ accounts and come up with questions which might help the speaker to talk in more depth about their experience. A final task consisted of reflecting on their discussion, and sketching out a collective understanding of what appeared to the group to be the most significant themes in their discussion.

Analysis

The process of analysis was designed in a number of stages, in order to preserve the participants’ perspectives on meaning as far as possible. Both focus groups concluded their discussions with a theming exercise where they discussed what they felt were the most important themes of their discussion. The themes derived from these discussions were then organised into a set of over-arching themes and used as categories for coding the transcripts of their discussions, using the Nvivo software app. Following this first deductive round of analysis, the data were analysed again using a more inductive approach to highlight any uncoded data. Hence, the findings represent the participants’ own perspective on what they felt to be significant from their collective experiences, but with an additional level of inductive analysis to catch up anything not otherwise highlighted.

Findings

An initial coding of both groups’ final discussions about the themes they felt were significant in their discussions resulted in 46 separate codes, which were then organised by the researcher into 21 categories and five superordinate themes and sub-themes (see appendix iv). During this organisation process, a number of themes were added by the

researcher – affect, communitas, diffraction, resonance, temporo-spatial – to support the aggregation of themes. The resulting superordinate themes were: spiritual dimension; personal experience; connection; communication and a fifth superordinate theme ‘diffraction’ to do with how the different significant elements amplified or ‘multiplied’ the effects of some of the others. As one participant expressed it:

Singing on my own in nature, that's more about my own personal resonance with nature. But singing with a group, it is so much more, so much bigger the energy that we raise and put back into the earth and with each other. (P1-3)

Using these codes, the transcripts were analysed by reading through and assigning one of the 46 codes to each expression or exchange, where possible. Where there was no clear relationship between an expression or exchange and any of the pre-determined codes, the transcript was left uncoded. A second round of coding involved a further analysis of the data using an inductive approach, coding any previously uncoded data in order to identify any themes not highlighted by the focus group ‘theming’ discussions. Discussions about the task itself, or discursive diversions from the group’s focus were left uncoded. A further 9 codes were identified through this process, which were integrated within the existing thematic structure. Figure 1 shows the frequency of responses across all themes expressed as a hierarchy chart.

[insert fig. 1 frequency of themes about here]

Fig. 1 Frequency of Themes

In the following section, I summarise the focus group discussions around each of these themes.

Connection

The theme of connection was the strongest theme, across a number of dimensions: connecting with nature, with other people, with specific places, as well as a global sense of connection, or as one participant put it, 'it's connection with each other, with the place, with the past, with the present, and with the non-human' (P2-5).

Connecting with Nature

The sense of connecting with nature was important in participants' experience - 'being outdoors, connecting with nature, that's where I feel at home' (P1-3) – and there were several different aspects to this. Firstly, a sense of 'communing' with nature was evoked, for example during a wildflower planting / singing event, there was 'a palpable sense of giving something back [to] all the meadows that you appreciate' (P1-5). A deeper level of communion was experienced by some, with some sense of a reciprocal spiritual experience with the natural world: 'when we sing with the earth, the earth sings back. A joyous exchange takes place; it's not a one-way street, there's something else going on' (P1-1). The sense of a connection to the natural elements was also important – 'a way of being that is right, certainly right for me, necessary even and [...] part of good health' (P1-5). Additionally, especially in adverse weather conditions, the group singing provided some kind of protective shield from the elements, and a way of being more comfortable in them: 'I don't think we even noticed the rain whilst we were singing' (P1-1). There was a recognition that the representation of the natural world through group singing was perhaps idealistic, 'because we don't sing about storms and earthquakes and teeming rain [...] We like to sing of hope and the beautiful' (P2-6), but this was tempered by an acknowledgement that,

‘We all know that life's frightening, and horrible, and terrible things happen. It's not that we're not aware of that. But doesn't this give us [...] a little bit of connection and community and safety and warmth, and I think that's okay.’ (P2-5)

As well as communing with nature, there was also a sense in which the group singing felt like a way of ‘honouring that place’ (P2-2), ‘honouring the earth and honouring all the living things, honouring everything. It's my gift to the elements, if you like’ (P1-3). This sense of honouring had a spiritual dimension to it: ‘when my being is resonating with a place and with everything that's around, it's sort of like an opening up of myself to all the energy that's around, finding the flow of the place and giving voice to that’ (P1-3).

Participants made an important distinction between this more spiritual singing *with* the earth and a more political singing *for* the earth: ‘you could say the river [...] has value to lots of people and [...] you should [...] respect and honour it, but also that you should fight for it. I think maybe in my philosophy it's both’ (P1-2). One event protesting a local land rights issue was ‘all about making a stand with Mother Earth, and saying the Earth doesn't belong to anybody, actually’ (P2-4), while another participant reflected that ‘in those campaigning type things, it's a different quality because it's like we're trying to defend our earth by [...] taking up its cause with other people.’ (P2-5).

In a similar vein, participants acknowledged that ‘there's a difference between just singing in the place [...] versus it being a performance. And that is qualitatively very, very different’ (P2-2). The connections – with other singers and with the natural world – were considered to be compromised somewhat with a listening audience or when the activity was being recorded:

‘I'm not quite sure why, but [singing at a music festival] is different from singing in a group [in nature] or something. I mean, it was good fun and everything, but it

didn't have those qualities for me of the spirituality and connection. I mean, it was fun but different.' (P2-5)

Interpersonal

The importance of a deeper interpersonal connection was highlighted as being central to the experience. The sense of 'communitas' - or 'the togetherness of being with other humans [which is] really important' (P1-1) – that often arises through group singing was deepened by singing in nature: 'after we've done these outdoor things, I feel that I know people in the choir much better, more deeply' (P1-3); 'we don't really know each other, but in some sense, I think you do when you sing together' (P2-5). Another participant reflected:

'this kind of secular ritual aspect of it is different from a choir night. When you are going out and enjoying a situation, a context that you're sharing, I think you've got this double endorsement of the relationship of community, your friendship, and you're able to talk and choose, and move around and talk with [others]. And you're able also to share the impact of the outdoors.' (P2-7)

Temporo-spatial

Discussions also highlighted the importance of the temporal nature of the activity:

'there's something I really like about the fact that when you just sing, especially if you sing out on the hillside, [...] it's there in that moment, and it's great and it's all the things we've been talking about, and then it's gone.' (P2-5)

This invisible and temporal nature of the sounds produced through group singing appeared to lend it a 'timeless' quality and a way thereby of connecting to the past:

'[When we] went outside the stone circle and sang there in a prehistoric landscape with the trees, [...] that really felt like you were kind of plumbing into centuries of kind of honouring nature and just being human in a natural environment' (P2-1).

In turn, this led to a deeper sense of place:

‘[an outdoor singing project] for me was not actually about singing with other people, really. It wasn't about the collective singing. It was about being in a place, singing a song which is about that place, which is so deeply knowledgeable about every inch of that terrain, [...] the names of fields, about what grows, about the names of the farmers, and about the earth not belonging to us but us belonging to the earth or a particular patch, a particular area of earth. I think that's a very ancient consciousness.’ (P2-2)

For some, this heightened sense of connection to place was a way of building global solidarity through local activity, developing ‘connections that are wider like world connections or with other people in other places doing similar things [...] I felt that I was connecting with people who were committed to an alternative way of living in this world’ (P1-2).

Spiritual

The spiritual dimension of the practice was clearly important to both groups, with a recognition that ‘when you're singing outside [...] there is something really special and sacred about it’ (P2-4). Emphasising the distinction between a spiritual and a religious experience was important to some:

‘One of the things that is important for me is that there's a certain sort of spirituality about singing outdoors and singing with other people. [...] I miss hymn singing having rejected religion, but there's something about this type of singing that captures that for me. It's like spiritual and connected with other people, and that's why I think I love it so much.’ (P2-6)

One of the ways in which this spiritual dimension was evoked through the activity was the way it inspired a sense of perspective for participants:

‘When we go out onto peaks, we realise how small we are because of the whole vista which shrinks us. And in that sense, puts us in that place into the wider perspective. And our songs put us into wider perspectives because they speak of experience beyond our unique individual situation.’ (P2-7)

There was also a sense in which participants were ‘tuning in’ to much slower rhythms within the natural world - ‘synchronised in that vibration with the earth’ (P1-2) - where ‘one of the key responses to nature is to seasons and rhythms. And that’s what we are doing. We are aligning rhythms in the noises’ (P2-7). This sense of ‘tuning in’ to natural rhythms was considered to be an important part of the experience;

‘That moment where you feel in the palms of your hands and your fingertips the energy of the people and the earth around you and it’s tingling and it’s invigorating and you just know that’s connection with everything around you and the people and this brings me so much joy, feeling that. But also it’s mutually beneficial. That raised energy is beneficial for the earth and other people as well, whether they feel it or not.’ (P1-3)

For some participants, the spiritual dimension of the activity is what appears to transform it from a leisure activity into something more significant and meaningful in their experience, where the activity is ‘making a difference’ in the world at a spiritual / energetic level:

‘For me, there’s a synergy though. There’s something more going on. It’s really hard to say, but what it feels like is that when we sing as one, we create something much, much, much bigger that goes out into the universe and changes things. So to me, it’s not just enjoying and honouring and trying to speak up for the earth. It’s actually actively changing what’s going on out there. So it’s a much more active and interactive thing that I think is going on. [...] Everything has spirit and everything is alive, so even the mountains and the rivers and the lakes have a spirit that resonates when we resonate back. And I think that generates something. And I don’t know what it is, but it is a something. And I think, yes, it’s a soul connection. And that’s why I do it.’ (P1-1)

Personal

Participants also reflected on the positive impact of the activity on their personal health and wellbeing. Group singing outdoors inspires a sense of freedom for some participants who felt able to sing ‘more like [how] a bird sings or that you just sing [...] for the joy of it. You are allowed to just enjoy the singing rather than kind of worrying about the performance in any way’ (P2-5). It was also about inspiring a sense of playfulness where the activity ‘opened the door of your mind. You were allowed. You had permission, and you could give yourself permission to play. And in that sense of play, it was just great fun’ (P2-4). Others reflected on the impact on their cognitive functioning: ‘I know that it's brain food because it challenges my brain to think, to operate differently’ (P1-1). The activity also had clear benefits for both personal and collective identity: ‘you identify with the people around you [...] like a group of activists, [and] it also reinforces your personal identity because it's what you stand for and what your political stance is’ (P2-6). These positive effects were sometimes accompanied by a sense of existential sadness or melancholy, due to the fragile state of the natural world:

‘for me also, there's always a sadness in some ways. Because when you go outside and you walk through the landscape that we're lucky to live [in], that sense of connection with the landscape brings [...] a sense of loneliness, a sense of sadness. Part of that is engendered by what we're actually doing to the landscape and how we've managed or mismanaged the landscape over the years.’ (P2-4)

Communication

A further over-arching theme was to do with communication, and how the act of singing in nature can be a way of expressing personal beliefs on environmental issues whilst building community solidarity:

‘taking a stance, a positive stance, in using songs as a way of bonding [...] in a community of spirit, in a struggle, it's part of that, “This is my place, and actually, I don't like a lot of what's going on”’. (P2-4)

Singing was considered to be helpful in building such solidarity because ‘it bonds you together in a common cause. You want to put a message over it, but there's also something about it as a way of bonding you together. And it absolutely does’ (P2-4). As a form of protest, group singing can therefore also be less threatening than more confrontational forms, emphasising positive community feeling over antagonism and conflict:

‘I also think it's quite unthreatening. [...] I remember an instance when we were at the coal mine site and there was a guy heckling, and in the end, he came up, he said, "I don't like what you're singing, but I do quite like your songs." So there's something-- it's not aggressive. It's not confrontational, but it does confront.’ (P2-5)

In a similar vein, an interesting dimension to the nature of the communication involved in group singing outdoors was in relation to its calming effect on non-human ‘companion species’ (Haraway 2016, 10–12):

‘Our dog quite often comes out with this. We call her the choir dog. So she's quite anxious and she doesn't really like new people. But there's something about it when we all start singing, she lies down, she lies down with us, and she relaxes. And I think there's something about when people are singing, [she knows] it's safe. Yeah. There's nothing to worry about. She knows exactly what we're all doing: we're all howling together. There's definitely a sense that we're all at peace with each other; nothing frightening or nasty is going to happen, and I think we carry that as well.’ (P2-5)

Diffraction

As noted earlier, the final theme was to do with the way that all of the various complex dimensions of the experience of group singing in nature interact - or more properly,

intra-act in that they collectively amplify one another as a ‘mutual constitution of entangled agencies’ (Barad 2007, 42), or as a ‘diffractive’ process of ‘reading insights through one another’ (38):

‘to sing about nature, which we often do, [is] a common topic, isn't it? And then with nature Sing with the Earth to be outdoors, it just doubles the connections, doesn't it? So it's like connection plus more connection. And then to do that in community, in group, it's like three lots of juice from three different elements, three different sources. So that's lovely to commune in that way. You're communing with nature, but you're communing with the people that you're with. [...] It's the synergy of things that when they come together you get something greater than the sum of its parts.’ (P1-5)

Taken separately, communing with nature, singing in / with nature, singing with a group all produce positive effects on individual health and wellbeing, but participants were clear that ‘singing outdoors changes how we sing’ (P1-1), and that these different elements had an amplifying effect on each other:

‘If I was singing on my own in nature, that's more about my own personal resonance with nature. But singing with a group, it is so much more, so much bigger the energy that we raise and put back into the earth and with each other.’ (P1-3)

To develop the previous point about community solidarity and non-threatening protest, there was a sense in which the diffractive nature of group singing was empowering for the singers in expressing collective beliefs more strongly in public: ‘when we're all singing together, [...] it feels like we are more - we're a powerful collective. We have a voice that has become more powerful’ (P1-2). One participant expressed this very clearly:

‘There's something about being able to stand with a group of singers [at a protest] and sing at the top of my lungs and look at people and try and engage with them.

There's something very empowering about being able to say what you want to say through song.' (P2-5)

Discussion

Spiritual practice

The consensus among participants from both groups about the spiritual – yet non-religious - nature of the practice of outdoor group singing was striking. Both a personal connection to nature and a social connection to other people through group singing were highlighted as important routes to wellbeing, but the two elements combine to create an effect which is ‘greater than the sum of its parts’ (P1-5). To be in a positive relationship with the natural world is important for one’s spiritual health, and to sing with others produces well-documented positive effects, but the two combine diffractively in that the respective elements ‘intra-act’ to produce much deeper effects. The suggestion here is that entrainment, or ‘tuning in’ to one another in resonant ways – through musical, social and / or neurobiological attunement – is enhanced when such attunement is extended to the – often much slower - frequencies and rhythms of the natural world, producing a deeper experience of ‘communitas’ (Turner 2012; Camlin, Daffern, and Zeserson 2020, 10) which is spiritually uplifting and affirming.

Participants made an important distinction between singing *with* and singing *for* nature. The former – using group singing as a way of deepening a sense of communion with the natural world - is also about deepening a sense of personal attention *to* the natural world and one’s place in it, enhanced through the collective experience. Singing *for* nature is more about political intention and expression of personal and collectively-held beliefs for either a real or imagined audience. Both acts of singing *with* and singing *for* nature might be considered to be about the ‘performance’ of (post)humanistic values - of love, reciprocity and justice (Camlin 2023, 152–61) – in that both rely on ‘tuning

in' to one another to achieve their potency. However, the former represents a more spiritual practice, while the latter is more overtly political, where 'ceremony focuses attention so that attention becomes intention' (Kimmerer 2020, 248). Singing *with* the natural world is essentially a participatory spiritual practice, and performing / recording the experience compromises it to some extent. We might say that performance and / or recording represents an 'agential cut' (Barad 2007, 164) or more precisely an 'aesthetic cut' (Camlin 2023, 64) in participatory experience to accommodate a real or imagined audience, fundamentally changing the nature of the experience.

Posthuman

The posthuman is evoked in a number of ways through the practice of group singing in nature. Firstly, because 'tuning in' to the rhythms of the natural world in this way – whether that be the rush of a mountain stream, the cycles of day and night, lunar cycles, seasonal changes in the natural world or the barely perceptible but agential glacial movement of mountains over millenia – is about using musical ceremony to 'enter into reciprocity with the more-than-human world' (Kimmerer 2020, 190). The examples of the calming and soothing effects of outdoor group singing on companion species like 'the choir dog' (P2-5) also illustrate how the practice might connect with the non-human. Theories of limbic 'resonance' (Lewis, Amini, and Lannon 2001, 169) point to a common limbic neural architecture among all mammals, and the non-threatening nature of group singing - because of the ways in which participants' neurobiology becomes entangled interpersonally (Siegel 2015; Camlin 2023, 52–56) – not only helps to bond the group of singers, but may also extend to other human and non-human audiences as a form of limbic reassurance. However, as our understanding of the complex ways in which human neurobiology may become entangled with that of other humans through the activity of music making / group singing is still in its infancy,

to be able to extend such knowledge to an understanding of similar activities with non-human entities will require considerable work across a number of fields, but is theoretically possible.

As Kimmerer suggests, there might be a metaphorical sense in which more-than-human entities could be considered to enter into this relationship of reciprocity and sense of *communitas* with the singers, but it is harder to justify in a physical sense, as the specific affordances of limbic attunement arise from the possession of common limbic neural architecture (Lewis, Amini, and Lannon 2001, 26), something which trees and mountains do not possess. However, this subject – along with the interspecies possibilities of limbic regulation - perhaps warrants further investigation to be able to better understand the agency of non-human and more-than-human entities in relation to human agency.

Conclusion

While not claiming to be representative of a broader population, this study highlights the spiritual dimension of group singing in nature, and the affordances for deepening participants' sense of connection with the natural world, and the sense of '*communitas*' commonly experienced during group singing. It highlights the posthuman dimension of the experience, in terms of developing and deepening connection both to non-human and more-than-human entities. It identifies possible new research avenues for interspecies understanding of cultural phenomena based on neurobiological similarities. As a leader within this CoMP, the study has also provided me with new insights into my participants' experiences, which I am certain will help to shape future artistic opportunities as they evolve.

In terms of addressing the question 'what does it mean to sing with the earth?' what this study highlights is the complex and entangled nature of phenomena these

kinds of questions imply, and how a posthuman lens can illuminate their ongoing complexity. Group singing in nature is considered a secular spiritual experience for the participants in this survey, which is evoked through a complex entanglement of personal experience and connections between soundings, people, places and intentions. However, rather than seeking to untangle these fundamental complexities of cultural experience, what a posthuman perspective affords is conceptual confidence to ‘stay with the trouble’ (Haraway 2016) of their complexity. The dynamic ways in which the various constituents of cultural experience intra-act to produce their effects is therefore an important consideration for future research design, in order to develop deeper and richer understandings of such experiences.

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