A desirable privation: exploring silence as a mode of zoo visiting

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ABSTRACT

This article describes and discusses a set of exercises in silent zoo visiting conducted at two zoos in the Southwest of the UK in 2019. The visits were part of a wider project on the auditory culture of zoos, institutions which have tended to be analysed by reference to their concern with the visual display of captive other-than-human animals (henceforth animals). Linking ideas on silence that have emerged from work in anthropology and sound studies respectively, the article explores the notion that among many other affordances, silence can generate opportunities for reflection and the consideration of alternatives, in this case in relation to a prevailing zoo visiting culture often characterised by loud anthropogenic sound. Examining extracts and observations from discussions among participants, the article illustrates how this novel form of visiting fostered a variety of types and qualities of experience. It also provided an impetus for participants to notice and focus on specific animals and aspects of animal lives they might not otherwise have considered. Such meditation could foster feelings of connection to particular zoo animals, while also opening up possibilities





for more detached contemplation. The silent visits led participants to produce critical perspectives on conventional zoo visiting, and to imagine future possibilities for the auditory culture of zoos. The article shows that silence can serve as a productive methodological tool in the exploration of human-animal relations, and demonstrates how sound is integral to the formation of those relations within, and by implication beyond, the zoo.

KEYWORDS: listening; silence; sound; zoos; human-animal interactions

1 Introduction

It is a Saturday morning in May 2019. The main gates of Bristol Zoo in the Southwest of the UK have just opened, and visitors who arrived early are now moving down the various pathways between the exhibits. It is a pleasantly sunny morning and there is a good deal of chatter as people stroll along ("The kids always run off over there straightaway...", "What do you want to head for first...?" "We always think we'll see everything but we never do...") as well as occasional shouts and shrieks of excitement from children as they run to the various animal enclosures and look in. Some call out to their carers, to other children and even to the animals themselves. Although it is possible to hear other sounds, such as the movement of traffic along the roads adjacent to the zoo, the songs and calls of some wild birds and occasional vocalisations from zoo animals, these human sounds are perhaps the zoo's most obvious sonic characteristic during opening hours.¹

While it might not be immediately apparent, several of the visitors to the zoo this morning are not talking, and cannot be heard in the same way as other visitors. They are in fact participants in an alternative type of zoo visit. While free to choose their own individual paths around the zoo, these volunteers have been asked by a team of researchers not to talk or communicate with one another, or with anyone else, for the duration of their visit. They have also agreed to convene at the end of ninety minutes of silent zoo visiting in a room in the zoo's education building to discuss their experiences. Did being silent affect their thoughts about the zoo and its animals, and if so in what ways?

Academic work has tended to characterise zoo visiting as a visual activity. Braverman describes zoos as institutions where "the visual regime reigns supreme" and writes that ultimately, zoo exhibits are "designed from the zoogoers' perspective –

and with an eye toward optimising viewing capacity" (2013, 71, 76). In analysing the "scopic regimes" of the zoo she describes a variety of ways in which animal behaviour and the material environment are manipulated "to facilitate the human gaze" (ibid, 71, 76). Other authors also emphasise how zoos enable the visual consumption of captive animals by human visitors (e.g. Acampora 2005; Berger [1980] 2008, 23, 26; Malamud 2012, 115; Montgomery 1995, 574). Mullan and Marvin argue that despite innovations in enclosure design, "zoos still consist of animals kept in enclosures of greater or lesser complexity which the public can walk past to *view* the animals" (1987, 115, emphasis added). Immersive exhibits, which allow visitors to walk through spaces containing animals in such a way that they are not separated from them by bars, glass, moats or other barriers, nonetheless still set up primarily visual experiences of those animals.

It has been argued that the visual relations between humans and animals created in the zoo express and reproduce human distance and detachment from, as well as mastery over other animals (e.g. Malamud 2015, 400-401). Scholars have also identified what they consider to be anthropocentric, imperialist and patriarchal underpinnings of the zoological gaze, pointing to the manner in which many zoos were conceived in the colonialist era and are manifestations of a desire to impose order and control over 'exotic' others (Acampora 2005, 83; Baratay and Hardouin-Fugier 2002, 13). Bishop, however, advises against such reductive understandings of zoo spectatorship, emphasising the multiplicity of framings and interpretations of animals and their behaviour that zoo visiting affords (2004, 104). She, like others, also points out that zoos sometimes present situations in which animals gaze back at human spectators, or where their gazes meet (ibid, 120; Hanson 2002, 185; see also Winogrand 2004).

Of course, zoos also engage visitors through non-visual sensory experiences. For instance, some provide tactile displays where visitors are invited to touch reproductions or specimens of particular types of animal skin, or offer opportunities to touch and even handle certain animals directly. Exhibits can produce marked changes in atmospheric conditions such as the temperature and humidity of the air, and intentionally or otherwise, zoos can expose visitors to distinctive animal smells. Sometimes information is provided about particular sounds made by animals, and visitors are encouraged to listen out for calls and other vocalisations. Vision, though, has undeniably been the most prevalent sensory theme in academic work on zoos.

The Silent Visits described in this article were a part of a wider project entitled Listening to the Zoo, which sought to complement and provide a counterpoint to existing visually orientated scholarship by generating knowledge of the ways in which sounds become significant in the experience of zoos, not only for visitors, but also for

staff, people living in close proximity to zoos and for zoo animals themselves. It aimed to broaden and diversify the theoretical imagination of this institution through a focus on sound.² Combining approaches from the social and natural sciences, the work involved collaboration between a research team consisting of scholars from social anthropology, anthrozoology, and animal behaviour, and two zoos in the Southwest UK: Paignton Zoo (owned by the Wild Planet Trust) and Bristol Zoo Gardens (run by Bristol Zoological Society).

The rationale for the silent visits was multifaceted, informed by insights primarily from anthropology and sound studies, but also from anthropology and bioacoustics, areas of study which, this article seeks to demonstrate, overlap and intersect in productive ways. The visits were intended to encourage members of the public to reflect on the zoo as a sound environment, and on anthropogenic sound as a facet of contemporary zoo visiting culture. Specifically, the discussions held after each visit were used to explore the following questions:

What types or qualities of experience do silent zoo visits generate?

How, if at all, do the visits affect participants' ways of relating to zoo animals and to other zoo visitors?

Do the visits influence participants' ways of thinking about zoos generally?

Zoos are often seen as controversial institutions. Their techniques of holding, managing and displaying captive animals have met with criticism from, for instance, the animal rights and animal welfare movements. Zoos in turn have drawn attention to the importance they place on the wellbeing of their animals and have argued that they make a significant contribution to the conservation of endangered species while also providing valuable environmental education for visitors, especially children (see, for example, Carr and Cohen 2011; Ojalammi and Nygren, 2018). The silent visits might be understood to be promoting of zoos by presenting a novel way for them to display their collections, thereby extracting value from their captive animals. While conducted in collaboration with the zoos participating in the project, though, the silent visits were not intended as a promotional exercise. Instead, they were intended to create opportunities for reflection on relations, especially sonic relations, between humans and animals within the important zone of 'interspecies contact' that zoos represent (Buller 2014, 314).

2 Silence and listening

Following Toop, who takes sound to mean "the entire continuum of the audible and inaudible spectrum, including silence, noise, quiet, implicit and imagined sound", silence itself can be understood to be relevant to anthropological discourse on sound (2010, xviii). The anthropology of sound is a well-established sub-discipline (e.g. Feld 1990, 1996; Rice 2013; Samuels et al 2010; Schulze 2018), and silence can also be construed as a kind of sonic state or experience. The anthropology of silence, however, is in itself an established research area. Silence has been of anthropological interest since Basso's (1970) seminal work on Western Apache culture. Noting that silence, inferring non-speech, was conventional in a variety of contexts, for example when meeting strangers, when courting and when a person has returned home after a long absence, Basso theorised that an "absence of verbal communication is associated with social situations in which the status of focal participants is ambiguous" (ibid, 227). Basso's work highlights that silence can represent a powerful form of communication (rather than an absence of communication) and can play an important role in constituting and marking specific social relations.

In more recent anthropological work, Dragojlovic and Samuels observe, silence has often been understood to "signal a form of oppression, produced by the forces that exclude certain ideas, people and words from being spoken, visible, attended to or even thought about" (2021, 1). While frequently a symptom of strategies of repression exercised by authoritarian governments, silence in this sense is more broadly identified with an inability or disinclination on the part of marginalised groups to speak about or otherwise articulate difficult or traumatic aspects of their experience. Gammeltoft (2016), for example, describes Vietnamese women's silent endurance of intimate partner violence, while Sheriff (2000) documents a form of 'cultural censorship' (self-censorship at a collective rather than an individual level) exercised by poor Brazilians of African descent in Rio de Janeiro in reaction to their encounters with entrenched racism. Dragojlovic and Samuels suggest, however, that silence should not only be understood as a sign of disempowerment; it has a variety of functions and meanings, and in some contexts may be, for instance, a coping mechanism and a survival strategy (Dragojlovic and Samuels 2021, 1). Parpart observes that silence harbours the potential for resistance (Parpart 2019, 321). Where it constitutes a conspicuous breach of behavioural norms, for instance, silence can be a tool with which to challenge or destabilise the status quo, and collective silence has often been employed in protests and demonstrations. She also points out that silence has been associated with spiritual reflection and

is fundamental to practices such as Buddhist meditation. It offers opportunities "for reflection, for healing, and for rethinking one's position, values and identity" (ibid, 320). Attention is drawn here to the transformative potential of silence. It is perceived to create space for "reassessing possibilities" and "thinking in new ways", and it was partly in these senses that the silent zoo visits were proposed as part of the Listening to the Zoo project (ibid, 323, 321). The voluntary, conscious and deliberate silence of participants was framed as a kind of catalyst, instigating both reflection on zoo visiting norms and consideration of how they could potentially be different. Silence became a tool in, as well as a subject of, this piece of research.

As in anthropology, silence has been a recurring theme in sound studies, where again, attention has been drawn to the varied nuances of the term. Just as with anthropology, silence in this interdisciplinary field tends to be framed as a (voluntary or otherwise) restriction of both collective and individual self-expression. Sound studies scholars, though, have focused more on the specifically sonic or auditory dimensions of silence. While silence is frequently thought of as an absence of sound, researchers (as we saw with Toop, cited above) have tended to conceive of silence as itself a kind of sonic experience. It is situated "within the continuum of the field of sound - rather than as its antithesis" (Hogg 2019, 168). Indeed, following John Cage, it is often stated that total silence is unattainable for the human listener, an insight which is said to have originated with Cage's descriptions of his experience of listening inside an anechoic chamber at Harvard University in 1951 and hearing the sounds of his own body (Cage [1939] 2011, 8). "Silence does not actually seem to exist in any empirical sense" (Rath 2019, 73). The term, therefore, tends to refer to a relative rather than an absolute absence of sound.

It has been suggested by some sound studies scholars that a person's silence may assist in the creation of the optimum conditions for listening. Rath, for instance, refers to "a silencing of oneself that is a prerequisite for listening" (ibid, 78-9), also citing Voegelin's description of silence "not as the absence of sound but the beginning of listening" (2010, 83; cited ibid, 79). Quietening one's own sounds, then, may represent a form of withdrawal, for instance, from conversation, but it can at the same time create opportunities for receptivity to sound from other sources. By requesting that volunteers not talk or communicate with others or between themselves, the silent visits aimed to encourage participants to direct their attention towards the sound environment, foregrounding it in their zoo visiting experience³. It was hoped that produc-

³ The instruction to avoid speaking was assumed to preclude communication with the zoo

ing opportunities for participants to experience and reflect upon the zoo as a sound world would lead to the production of useful insights into how human and animal lives become entwined through sound in the zoo setting. For instance, going to the zoo is often a social activity, and while ostensibly driven by a desire to see the animals, it can also be noisy. Is this kind of sound appropriate in a space where acoustically sensitive animals are often housed and for whom, research from within bioacoustics and zoo visitor studies suggests, noise may act as a stressor? (Bonde de Queiroz 2018; Fernandez et al 2009; Orban et al 2016; Owen et al 2004; Quadros et al 2014; Sherwen and Hemsworth 2019)? Of course, visitor sound, whether it be produced vocally or through bodily contact with the surfaces of paths and walkways through running or walking, for example, may potentially be a source of stimulation for some species and individual animals, and some animals appear to have missed visitors during Covid-19 lockdowns (e.g. Williams 2020). It is also plausible that some zoo animals may be indifferent, or even completely oblivious to anthropogenic sound (a term which invokes a wider spectrum than simply speech or voice, but which is also inclusive of these sounds). Our research, nonetheless, explored whether requesting that participants remain silent could stimulate discussion as to what they perceived would constitute appropriate human sonic behaviour, or good sonic 'interspecies ettiquette', in the zoo context (Warkentin 2010). It examined whether silence had the potential to mediate relations between visitors and the zoo and its animals in new ways and to instigate critical reflection on contemporary zoo visiting culture.

3 Study method

In anthropological terms, the silent visits were unusual, not least in that they involved the staging of an event and therefore a deliberate manipulation of what one might regard as the 'normal' conditions of zoo visiting. Anthropologists have traditionally tended to view their fieldwork as a process of participating in and observing the lives of research participants in such a way as to cause minimal disruption to their everyday activities. Some fields within the discipline, such as 'design' and 'development' anthropology, can of course be actively and openly interventionist, but there is also a more general acknowledgment of the impossibility of a researcher being present in any field site without in some way intervening in or altering what is taking place (e.g. Redfield

animals, though we could not rule out that simply through their bodily presence, posture and so on, participants might be signalling to the zoo animals, and, as indicated above through Basso (1970), silence can itself be considered a mode of communication.

2018). Interventions, moreover, are not unusual in social science research more broadly, where various kinds of experimental study designs are employed, and the silent visits with their ensuing discussions were felt to offer a productive avenue for the exploration of the auditory culture of zoos.

During May 2019, one silent visit was conducted at each of the two zoos involved in the Listening to the Zoo project. At the time the silent visits took place, Bristol Zoo was in an urban location towards the edge of the city of Bristol (population approximately 460,000). Founded in 1836, it was considered to be the world's oldest provincial zoo. The site covered 12 acres and the collection contained around 1200 birds, mammals and reptiles as well as thousands of fish (Bristol Zoo website 2019). High walls around the site gave the zoo an enclosed feel, and as it was bordered by residential streets, a school and a busy road, the sounds of traffic were often prominent features of the sound environment, though the zoo also contained some large trees and was near an expanse of open green space so it was not unusal to hear some birdsong. Paignton Zoo has a more suburban character. It is located on the outskirts of the town of Paignton (population approximately 50,000). Operational since 1923, the zoo site covers around 80 acres, with approximately 2000 animals (Paignton Zoo website 2022). It sits in a small valley, meaning that little of the surrounding area can be seen from the zoo itself, though nearby roads, in particular, can be heard. The zoo also includes several wooded areas, meaning that local wildlife, especially birds, is often noticeable and clearly audible.

Using adverts on the event pages of the zoo websites, the research team set out to recruit a group of ten volunteers for each silent visit. It was specified that participants should be over 18 years of age, as it was felt that families with children might find it hard to maintain silence. Small incentives were offered, including free entry to the zoo and a token financial contribution towards travel. The silent visits began at the normal opening times for both zoos and were preceded by short briefings during which it was specified that participants should not speak to one another or to other people in the zoo and that they should refrain from using mobile phones, writing or signing, thus creating something as close as possible to a silence not just of voices, but of communication more generally.

⁴ These were separate from the scripted listening walks also conducted as part of the Listening to the Zoo project and described in Rice et al 2021b.

⁵ Apart from age there was no attempt to recruit volunteers by reference to other specific demographic criteria. Participants were self-selecting. They have all been given pseudonyms in this text.

Because of last-minute cancellations, only six participants ultimately attended the Bristol silent zoo visit. The Paignton group consisted of twelve people (two participants unexpectedly brought friends with them). Participants were contacted after the event for details of their age and occupation, though not all responded to this request⁶. The details that were obtained are given in tables 1 and 2. For those for whom we do not have age details, we estimate the fifties and sixties to have been the dominant age categories. Some volunteers were already familiar with the zoos, lived nearby and visited frequently.

All the participants were present at the discussions directly following the silent visits. These lasted approximately an hour and took place in meeting rooms on the zoo sites. Two members of the research team acted as discussion faciltators, a third ensuring the discussion was audio recorded. The faciliators aimed to keep the discussion as open as possible, doing their best to allow participants freedom to give full contributions but also ensuring that everyone had opportunities to speak. Facilitators loosely structured the conversation by asking questions that related to the participants' general experience of the visits. They also asked participants if they had noticed anything about the nature of their engagement with the zoo animals, and whether they felt any of the animals had reacted or responded to their silence in any way. The faciltators explored whether participants had noticed anything about the behaviour of other zoo visitors during the visits, if they intended to make silence an aspect of their own future zoo visiting, and whether they thought silent visits were something zoos should offer in future. 'Follow up', 'probing' and 'specifying' questions were used to clarify and bring out the nuance of particular contributions (Kvale 1996: 133-5). The discussions were transcribed, with NVivo being used to identify prominent themes in the transcript and to group excerpts of the conversation under those themes. The analysis offered here is not exhaustive, but introduces the themes considered to be most directly relevant to the research questions identified above.

⁶ Contacting participants after the visits was perused as a strategy for encouraging a continuity of engagement with the project. So as not to be too intrusive, we made it clear that approximate ages (e.g. 'in my 60's) were acceptable. We use participants' self-presentation as the basis for assigning gender.

 Table 1. Participants in the Bristol Zoo silent visit

Pseudonym	Gender	Age	Occupation
Laura	F	24	Sales assistant
Christine	F	23	Student doing Masters degree in Paleontology
Alison	F	72	Retired accountant
Peter (married to Alison)	М	76	Retired National Health Service administrator
Agnes	F	71	Retired food industry worker
Eve	F	70s	Retiree

 Table 2. Participants in the Paignton Zoo silent visit

Pseudonym	Gender	Age	Occupation
Clare	F	23	Masters student and registered unpaid carer
James (partner of Clare)	М	23	Leisure assistant
Alan (married to Rose)	М	70	Training manager for Devon County Council
Rose	М	71	Retired from work at District Council
Cheryl	F	71	Retired teacher
Janet	F	48	Care industry worker
Caleb (partner of Janet)	М	52	Heating Sales Manager
Bridget	F		Not specified
Melanie	F		Not specified
Jess	F		Not specified
Katie	F		Not specified
Emma	F		Not specified

4 Sensing, slowness, stillness

Following the Silent Visit at Paignton Zoo, Clare and James made the following observations:

James: We went around slower. We took more time because we weren't

talking about it. We took more time to actually think about what

we were looking at, what we were hearing, things like that.

Clare: I heard much more that I wouldn't necessarily notice normally if I

was going round, like being able to hear the rhinos' (*Diceros bicornis*) feet come across on the ground... We would normally just be talking and wouldn't necessarily hear it. That was definitely something

I could appreciate much more.

Both these participants mention hearing sounds that they would not normally have heard or to which they might not normally have attended because of being engaged in conversation. As suggested by Rath (2019) and Voegelin (2010) introduced bove, silence here seems to have served as a preparation for listening, creating greater awareness of the sound environment and the way that sounds embroider the zoo space.

One concern around our putting on the silent visits was that they might exclude and hence discriminate against those who were not able to engage with the zoo as a sound environment, and so might be considered an expression of 'audism', what Sterne describes as "an ethnocentrism of those who hear" (2003, 28). It was surprising then, that Clare said:

I am hard of hearing... but I felt being quiet and not talking I could hear much more than I normally would. So, for me, I think I would make a conscious effort in the future to be much more quiet when walking around the zoo so that I do gain the maximum I can actually hear.

Silent or quiet zoo visiting might therefore present itself, perhaps counterintuitively, as an inclusive activity for some people with hearing difficulties, just as quiet shopping is regarded as preferable for some auraldiverse people.

In addition to listening more closely, James refered to himself and Clare reflecting more on what they visually observed, and Clare described how ordinarily when walking along a path (they had visited the zoo several times before) the two of them might have begun "talking about random stuff", but that this time she found herself looking more

closely at the plants. Silence was also perceived by many other participants, too, to enhance their attention not just to auditory but also to visual phenomena, and for some it also instigated a greater receptivity to sensory impressions more generally. Alan, for instance, commented that he had found his olfactory sense was sharpened during his visit, and that he "smelled much more". The silence also appeared to affect the pace of the visits. James and Clare found that they "went round slower" and "took more time" to think and to concentrate. Others felt similarly, for example, Janet described having devoted the majority of her visit to watching animals in the zoo's Ape Centre, something she recognised would not have been possible had she been accompanied by anyone else because of having to maintain a conversation.

Some participants observed that not speaking seemed to generate periods of physical stillness, too. Indeed silence, slowness and stillness seemed mutually complementary. Auditory silence was aligned in a reciprocal way to kinaesthetic silence, a desire to be quiet producing a reduction of unnecessary or unwanted movement and its associated sounds. The combination of silence, slowness and stillness produced feelings of "stress relief" and "tranquillity", as well as "peacefulness" in some participants. The following exchanges took place during the Paignton visit:

Melanie: I found it a massive privilege. I felt so honoured to be sharing the

animals' space, and it didn't feel like a zoo.

Bridget: No.

Melanie: It really didn't... because it was a much slower visit. Everything was

in brighter focus: colours, sounds. It is great stress relief.

(several yesses)

Emma: I found the top half of the zoo, where the giraffes (Giraffa camelo-

pardalis rothschildi) and the elephant⁷ (Loxodonta africana) and zebras (Equus zebra hartmannae) are, that is so peaceful up there. I sat on the bench just listening to all the sounds: the wind in the

trees, the birds. That is so tranquil up there. It is beautiful.

Cheryl: I think sitting is a big part of it.

Emma: Yes. I sat a couple of times just looking.

Cheryl: Just to sit and focus. Sitting helps enormously.

⁷ Paignton Zoo's female African elephant, known as Duchess, died in July 2019.

Built in the nineteenth century, the development of many modern zoos was influenced by the romanticist thought of that period. They were designed to afford visitors an opportunity to venture into nature and benefit from associated opportunities for recreation and spiritual renewal (Hanson 2002, 5). The relaxation which the silent visits appear to afford is perhaps a product of this heritage. Some participants seem to have arrived at the zoo open and prepared to respond to it as a kind of therapeutic and restorative space. It may also be that the direction to keep silent provided a cue for participants to begin a kind of meditative activity that they have come to associate with calm and relaxation. Silence is a feature of exercises in meditation and mindfulness which in recent years have come to be practiced widely across the UK8. The participants' perception of the zoo as a therapeutic and restorative space is arguably in contrast with what the zoo represents for some of its animals, though the zoos involved in the project were seeking to provde a therapeutic environment for some animals given to them following, for instance, mistreatment and abandonment by exotic pet keepers or smugglers. The zoos might also be understood to be trying to play a therapeutic and restorative role at an ecoystemic or species level through, for instance, their conservation initiatives or breeding programmes.

A 'complex' or thematic entanglement of slowness, stillness, sensory awareness and calm, then, is apparent in the silent visit discussions. While there is no suggestion that these states cannot be attained by visitors in conventional zoo visits, the fact that they are drawn out by some participants suggests that they were particularly prominent features of their silent zoo visiting. The visits here did not appear to create entirely new types of engagement with the zoo but allowed certain potentialities (contemplation, noticing of sensory impressions, absorption in the animals and their environment) to become more pronounced. Silence here, then, became a creative or generative activity, intensifying a consciousness of human-animal co-presence rather than producing a straightforward re-iteration or even (as some participants perhaps feared) an impoverishment of the zoo visiting experience.

5 Silence and its effect on animals

Many participants reported that they felt their silence had affected the behaviour of the zoo animals they observed. For instance, some said that the animals seemed comfortable with their presence, and that they were more ready to come close to them than to noisier visitors. Here is an extract from the Paignton discussion:

⁸ It is interesting to note that London Zoo, for instance, has offered yoga sessions.

Katie: When I was at the giraffe enclosure, I was being very silent. There

was a family further round making a lot of noise. The giraffes walked away, came towards me because I was just standing there,

enjoying and observing.

Cheryl: Yes, I found that as well.

James: The rhinos. We went in there, we were quiet. They sort of got up,

had a bit of a rustle. But, as soon as the other family came in, yes, they were quiet eventually, but one of the rhinos had enough, went

off, went outside.

The participants are of course assuming here that the animals 'hear' their silence as silence, when visitors might conceivably be noisy for them in other ways. Some animals may, for example, detect other, non-verbal sounds made by participants, or, moving beyond a limited notion of the auditory, might be attuned to subtle vibrations in the air, ground, or materials of their enclosures (see Friedner and Helmreich 2012; Helmreich 2010). Some participants nonetheless speculated that a generally quieter environment might suit the zoo animals better, and that it would be in the best interests of the animals generally if all zoo visiting was silent (thereby perhaps making a further assumption that the animals share their own sonic preferences). The point was also raised that being quiet, especially when accompanied by stillness, created potential for visitors to have more satisfactory viewing experiences, as the animals were less likely to avoid them and were more comfortable with showing themselves. There is a strong complementarity here between (unconventional) visitor silence and the (conventional) ocularcentrism of zoo visiting.

To be clear, our suggestion is not that the participants' comments necessarily demonstrate a preference on the part of particular animals for visitors to be silent, though as indicated above, research does suggest that quiet visiting would likely be beneficial for some species and individual animals kept in zoos. The remarks do show, however, that participants in the silent zoo visits felt or thought that animals did not seek to avoid them when they were silent in the same way that they avoided visitors who were behaving more noisily. At the same time, silence was considered by some visitors to establish points of connection between themselves and some animals. Eve, one of the participants in the Bristol Zoo visit, said she observed a reciprocal silence between herself and some of the animals she silently observed:

I found that the kea (*Nestor notabilis*), when I approached it, it remained completely silent, as I was silent, and then a family came in to talk to the birds and she started squawking. The family went away, and I was still there in silence, and the bird remained silent. So, I found that the animals and the birds were more at peace as I was silent.

After narrating a similar experience which followed from observing a monkey (she did not specify which species) Eve added:

I get the impression that it is a two-way thing where an individual is silent and the animal is reacting in the same way. That is what I found.

Perhaps the notion that mutual silence between humans and animals is a good thing might itself be questioned, and in any case not all animals were perceived to be responsive to the sonic demeanour of visitors at the zoo. At Paignton, Janet suggested that the noise of other humans had been more irritating to her than, judging by their apparent unconcern, it had been to a group of ring-tailed lemurs (*Lemur catta*) she had watched for a time and whom she described as being "shrieked at" by a row of "about twenty people, mostly couples with small children".

The visits, then, did create opportunities for participants to consider how different animals experience the zoo and especially how they react to the sonic behaviours of visitors. In the Paignton discussion, Emma mentioned how much a Western lowland gorilla (*Gorilla gorilla gorilla*) had seemed to dislike the noise made by a strimmer that a member of the zoo staff had been using to cut some grass near the edge of the animal's enclosure:

He was out and I could almost see him trying to get away from the noise, and I thought, 'I don't blame you.'

Like others quoted above, Emma uses her own human reaction to particular sounds to make sense of specific zoo animal behaviours. While the assumption that zoo animals will respond to sound in precisely the same way that human visitors do is clearly unsafe, it is equally unsafe to assume that these animals share no commonalities with visitors in terms of their sonic experience. Emma clearly *perceived* a response in the gorilla and felt that he was responding to the sound in the same way that she herself might. She believed the gorilla's subjective experience in this context to be not to be just human-like, but "like me", thus displaying what Milton calls 'egomorphism' (2005: 261).

Drawing attention to correspondences in auditory experience between themselves and zoo animals, then, some participants began to destabilise notions of human audio-exceptionalism, identifying sound as a shared dimension of human and non-human experience. The silent visits created the conditions for participants to appreciate their potentially mutual sonic sensitivity with some animals. Alison speculated that members of species which in the wild are used to living in noisy colonies, such as South American fur seal (*Arctocephalus australis*), African penguin (*Spheniscus demersus*) and greater flamingo (*Phoenicopterus roseus*), would not be bothered by visitor noise and might even appreciate it. Even where we see a suggestion that the auditory preferences of human visitors and zoo animals might not align, then, there is an interesting depth to participants' reflections on the auditory needs and interests of different species, and an effort to empathetically engage with sound as an aspect of an animal's 'umwelt' or 'subjective universe' (Von Uexkull 1982, 29). The silent visits appeared to bring about a recognition and articulation of some of the complexity of sound as a medium through which humans and animals encounter one another in the zoo context.

6 Difficulty and desirability

For some participants, the silent visits were unusual in that they created opportunities to visit the zoo without at the same time having to look after children or be part of family and other social groups. Even if they were participating as couples, silence and non-communication produced a corresponding solitude which some participants appreciated as a kind of freedom or even an indulgence. Others who were more accustomed to spending time on their own, for instance because of not having a partner or through working alone, merely experienced the solitude as an extension of their normal lifestyle. A few, though, had a more ambiguous response. Alan's partner Rose spoke about how the silent visit had allowed her to experience the zoo with what seemed to be an unusual intensity. She had, however, found it isolating and lonely not being able to speak to Alan during it:

[A]s soon as we walked in, you could hear the birdsong straightaway ... And the flowers and the trees were in focus, weren't they? Really in focus. However, for me, personally, it brought home to me that we haven't spoken until I just said 'get me a cup of tea' how isolating it was, walking round the zoo by myself, because that is how I felt. [Alan] isn't a big talker anyway, but we always read what is there and talk about that together ... I think you would get used to it. Don't get me wrong. But it was very lonely.

Melanie, another participant in the Paignton visit, agreed:

I think there are two sides to it. The silence is wonderful, absolutely love it, but, on the other hand, it is nice to share what you are seeing with somebody else, even if you talk in hushed tones. And I found that very hard because I am quite loud! So, I think there are two sides to the coin.

Silence can be a demanding form of discipline and self-discipline, a fact which partly accounts for its use in penitential contexts, for instance the silent system in British prisons in the nineteenth century, but also in various forms of religious practice and ascetism. There was an interesting tension in the silent visits in that the participants' silence was voluntary (they had elected to take part), yet involuntary (in that they were unable to communicate with others without breaching the requirements of the exercise). The discipline of silence entailed the sacrifice of opportunities for in-the-moment articulation and affirmation of their experiences and for the rewards of social interaction more generally. Some participants felt the lack of those opportunities, as was reflected in their strong appreciation of the opportunity to discuss their experiences with others in the discussion. At the same time, silence could be a constructive or productive constraint. Laura, who participated in the Bristol Zoo visit, described how not being allowed to communicate using her mobile phone meant she was able to invest more of her attention in the zoo (a point that was also made by one of the younger participants in the Paignton Zoo discussion):

I think it was quite nice having it silent, because, if it was quiet and I could still communicate, I would end up sending pictures to people, and then I wouldn't be paying attention as much. I think social media really influences what you see and it is really distracting. So, I think it was really good just switching my phone off completely and not associating with anyone.

Not distributing one's attention through a social group could potentially produce a more individualistic relationship to the zoo and its animals, but one which also fostered a particular strength and purity of engagement.

Several participants found that adhering rigidly to the instruction not to speak could place them in awkward social situations and forced them to breach normal social etiquette when interacting with people who were not part of the silent visits and who were following some of the normal conventions of social engagement with other visitors: asking and answering questions, directing attention (or having their attention directed) to the presence of particular animals or animal behaviour, interacting with

zoo staff and so on. Peter, who attended the silent visit at Bristol Zoo, said:

I was looking at some birds outside, there is a big walkthrough enclosure, and I was outside of this and was watching this, and one of the keepers came up and said, 'Excuse me, Sir, did you know that you can go inside?' and I sort of nodded and didn't say a word to him. I felt very rude, to be honest. I couldn't say thank you or anything.

Others, too, talked about the necessity of avoiding eye contact, or having to rely more on gestures and facial expressions during fleeting interactions. In contexts where communication is an expectation, silence can be perceived as rudeness or even hostility and participants were keen not to cause offence. It was surprising how seriously they took the instruction to remain silent, at times avoiding even the briefest verbal interactions for the benefit of the study design. They might not have felt they needed to do so had there been awareness among other visitors that the exercise was taking place, or even if there was an expectation of silence among other visitors so that participants' felt their behaviour would not be perceived as unusual.

Cheryl felt curiosity needed verbal exchange to flourish, and found it hard to refrain from initiating conversations as well as from responding to others. Intriguingly, Laura said she struggled not with avoiding initiating conversations with other humans, but rather with not talking to animals at the zoo. Despite the difficulties they produced, however, almost all the participants said they would be keen to try silent visiting again, and that even if there might not be opportunities to be involved in silent visits in a formal way, they might make silence an aspect of their own future zoo visiting practise. Once again, despite its complications, silence emerges as a state which is, at least at times, desirable, and which participants felt inclined to seek out and create for themselves, as indeed might be evidenced by their willingness to volunteer for the silent visits in the first place. Silence emerged as a kind of desirable privation, seemingly because of its potential to reinvigorate and intensify experiences of the zoo and its animals.

7 Seriousness, social Control and respect

It was clear that participants experienced much of the talk and interaction of other visitors as noise, and they often expressed being irritated or exasperated by it. Participants' own silence during the visits perhaps meant they were more aware of the sounds of other visitors than might have been the case had they been involved in conversations of their own, but these feelings were not only produced by the silent visits themselves;

some participants also mentioned visitor noise as a negative feature of past zoo visits. Participants felt that one of the benefits of the silent visits having begun early in the day was that there were fewer people there to spoil their enjoyment of the zoo by being noisy. They might not have found the visits so pleasurable had they taken place later when the zoo was busier. As Janet's partner Caleb remarked in the Paignton visit discussion:

In two hours' time this zoo is going to be a completely different place. If you ask us to come back then and you will get a whole raft of different feedback.

Several others agreed with him. Remarks about noise often referred to particular groups, especially young children and people whose comments seemed to show ignorance about animals or insensitivity to the presence of others. Several suggested that they were keen for the zoos to put on more silent visits, and some, for example in the following exchange, felt that this should mean that children were not allowed to be present:

Melanie: I think, certainly for the zoo, if I was recommending things, I would be up there saying, 'You need to have special silent visits'. Without a shadow of a doubt. No kids. (several yesses)

This was not a unanimous view, though, and some felt that where children were capable of and interested in silent engagement with the zoo, their presence might be acceptable. Several participants expressed a willingness to pay more for the opportunity to visit the zoo at times when there was an expectation of quietness, while there were also suggestions that, for instance, maps indicating quiet areas or signs encouraging quiet would be a positive development. Participants in both of the discussions independently described having visited a kiwi (*Apteryx*) exhibit in Aotearoa/New Zealand where they had noticed visitors, including children, silently watching these nocturnal birds. That zoo had in their view done an excellent job of using atmospheric cues as well as signage to create an environment in which visitors were keenly aware of the importance of silence. All in all, the intensity of feeling around noisy others was surprising to the researchers and a notable feature of both discussions.

⁹ Conceptual quiet maps were one of the resources produced through the Listening to the Zoo project.

Research within sound studies has documented a middle-class preoccupation with attempts to control or curtail what are perceived to be noisier (and by implication less educated and refined) lower-class others (e.g. Bijsterveld 2003; Chandola 2012; Picker 2003). Proposals for visits which allow for the appreciation of the zoo in the absence of a noisy general public, and which would require, for instance, the booking and/or purchase of tickets, might represent an extension of this tradition, and certainly the occupations and former occupations of participants do suggest they were predominantly middle class. There is perhaps a reminder here of Basso's insight that silence can represent a powerful form of communication and can play an important role in marking specific social statuses.

Janet suggested that not being able to communicate with others meant her experience was "more serious and more intimate" as well as "more focused and more personal". The notion of seriousness is interesting, as it might be considered a negative response given that a visit to the zoo is often framed as something that should be fun and enjoyable. At the same time, though, it was clear that some participants regarded seriousness as a more appropriate mood or frame of mind in which to approach the zoo and its animals. Zoos are not as readily associated with disciplined quiet in the way that some other institutions are. We might think, for example, of hospitals, schools, museums, or churches, where silence might traditionally have been enforced or encouraged in the interests of recovery, education, artistic elevation and spiritual connection respectively. Christine suggested in the Bristol discussion that the museum, in particular, might provide a suitable model for the zoo in terms of its acoustic culture:

I think we just have to be more moderate. It is like looking at a painting, at a museum. When you are in the museum, it is a nice, quiet place; people don't talk too much. I think you can be more attentive to the details on the painting, you can appreciate it more. I think it is the same way with the animals, you have a better appreciation.

Here, again, silence, or at least quiet, is perceived to be appropriate to the zoo, facilitating close, careful attention.

It is important to bear in mind that participation in arenas such as the museum, art gallery or concert hall has again traditionally been a marker of social distinction, indexing educational, intellectual and socio-economic capital. At the same time, silent appreciation might be considered to promote detachment from, as much as connection to, the object[s] of contemplation, in this case zoo animals. But while it is difficult to disentangle silence from the performance of social status, the visits seemed to intensify

participants' feelings that zoos should be something other than simply spaces of entertainment and socialising. There was a sense that shaping the sonic environment might facilitate a repositioning of the zoo as a place of concentration and contemplation. The notion that silence can foster a 'seriousness' of attitude and approach, then, gestures towards an important potential shift or re-emphasis in the purpose of zoos and in the way that these institutions present and justify themselves. There was a sense, too, that quiet is a kind of public good over which zoos have some degree of potential ownership and control, and which many participants believed they might foster to the benefit of both their human patrons and their non-human inhabitants. ¹⁰ It is interesting in view of Basso's anthropological research outlined above, that being silent placed participants in an ambiguous position where they were zoo visitors and yet not ordinary zoo visitors. It might be that this ambiguity was fundamental to enabling participants to adopt critical perspectives on zoo visiting.

In the UK, maintaining silence is conventional as an indicator of respect. One of the times when silence is most obvious is in rituals of public, collective mourning, such as Remembrance Day celebrations. Eve suggested silence was appropriate in a zoo context as a way of performing respect for the animals. She did not mean this as a gesture of respect for deceased animals, though this might be entirely reasonable given the scale of destruction humans have wrought on many of the species represented in zoos, a point we elaborate upon elsewhere (Badman-King et al forthcoming). Instead, she felt that keeping silent was a good way of being considerate to the animals in their enclosures, being unintrusive and allowing them space. She also felt that encouraging silence would be a way of helping to create a culture which enshrined this kind of respectful approach to animals in zoos more generally. Once again, we see the visits acting as a reflective but also a creative device for imagining alternative forms of zoo visiting culture.

8 Conclusion

As part of as wider study on the auditory culture of two zoos in Southwest England, the novel visits described in this article aimed to explore whether an intervention in research participants' habitual mode of engagement with the zoo, specifically a request

¹⁰ It is worth noting that as well as being living spaces for their animals, zoos are workplaces for their employees. In interviews that were conducted as part of the Listening to the Zoo project, keeping staff mentioned that visitor noise was sometimes problematic for themselves as well as for some of their other-than-human charges.

to remain silent, might instigate reflection on zoo visiting conventions and invite a consideration of possibile of alternatives. Through an analysis of transcripts from moderated discussions held after each visit, this article has examined particular types or qualities of experience that the silent zoo visits generated for research participants. It also investigated whether participants perceived the visits to affect their ways of relating to zoo animals and to other zoo visitors, and if the visits had any influence on participants' ways of thinking about zoos in general.

The experience of the silent visits was discussed by participants in a wide variety of ways, and seemed to leave multiple impressions often simultaneously. It was perceived to heighten not only auditory awareness but sensory awareness more generally. Silence also afforded recalibrations of the pace and rhythm of zoo visits, prompting slowness, stillness and associated sensations of calm and relaxation. At the same time, silence affected participants' ways of relating to zoo animals, providing an impetus to focus, concentrate and even meditate on specific animals and their behaviour. This meditation could foster feelings of intimacy and attachment to particular zoo animals, while also opening up possibilities for more detached contemplation. Silence, participants found, could also be experienced both as a privation and a privilege, lending zoo visiting an unexpected seriousness and gravitas. Silence also influenced participants' ways of relating to other zoo visitors, triggering a reappraisal of conventional sonic behaviour in the zoo and its potential effects on the animals. Surprisingly, the discussions did not generate commentary about the histories or ethics of zoos. They did, however, fuel debate as to how visitors should behave in a space inhabited by captive animals and prompted consideration of what zoos could be. Silence for the participants was not detached from its existing cultural associations with concentration, seriousness and respect, but those associations were also used to create insight into a new set of possibilities for an institution not usually associated with quiet contemplation. Importantly, there was a broad consensus that human silence in the zoo could be beneficial in multiple ways, and was something both zoo visitors and zoo residents should have opportunities to experience.

Research on the Listening to the Zoo project ended just before the lockdowns imposed in response to the Covid-19 epidemic, when UK zoos were obliged to close completely for periods of several months (during which they presumably fell silent but for the sounds of their animals and the staff working to look after them). They were only allowed to admit reduced numbers of visitors at other times. The finances of many zoos suffered badly, including those involved in the project. The Wild Planet Trust, which operates Paignton Zoo, was obliged to permanently close its Living Coasts

attraction in nearby Torquay in June 2020. In November 2021 it was announced that Bristol Zoo, where the silent visits took place, would close in 2022, with many of the animals relocated to the Wild Place Project on the outskirts of Bristol, which is also owned and operated by Bristol Zoological Society. These seismic events in the zoo landscape are of course tragic for many zoo employees, not to mention some zoo animals. They also, however, invite a consideration of how the present and future of zoos can and should differ from their past. They are a juncture at which zoos might consider new ways for visitors to engage with animals. The experiences of the participants in the silent visits described and discussed here should certainly be taken into consideration as zoos reshape and reposition themselves. At the same time, this article demostrates the value of using sonic interventions in customary styles of zoo visiting as a way to question the habitual behaviours of zoos and their visitors, pointing the way for future research based on this style of intervention. It would certainly be valuable, too, to see reiterations of the silent visits and investigations of participant responses, so as examine whether the findings are comparable at other zoos in different geographical and cultural contexts.

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References

- Acampora, Ralph R. 2005. "Zoos and Eyes: contesting captivity and seeking successor practices." Society & Animals 13 (1): 69-88.
- Badman-King, Alexander, Tom Rice, Samantha Hurn, Adam Reed and Paul Rose (forthcoming). "Should We Keep Quiet at the Zoo?"
- Baratay, Eric, and Elisabeth Hardouin-Fugier. 2002. A History of Zoological Gardens in the West. London: Reaktion Books.
- Basso, Keith H. 1970. "'To Give up on Words': Silence in Western Apache Culture." Southwestern Journal of Anthropology 26 (3): 213-230.
- Berger, John. [1980] 2008. About Looking. New York: Pantheon Books.
- Bijsterveld, Karin. 2003. "The Diabolical Symphony of the Mechanical Age: Technology and Symbolism of Sound in European and North American Noise Campaigns, 1900-40." In *The Auditory Culture Reader*, edited by Michael Bull and Les Back, 165-189. Oxford: Berg.
- Bishop, Rebecca. 2004. "Journeys to the Urban Exotic: Embodiment and the Zoo-going Gaze." *Humanities Research 11 (1): 106-124*.
- Bonde de Queiroz, Marina. 2018. "How Does the Zoo Soundscape Affect the Zoo Experience for Animals and Visitors?" Unpublished PhD thesis. School of Computing Sciences and Engineering, University of Salford.
- Braverman, Irus. 2013. Zooland: The Institution of Captivity. Stanford: University of California Press.
- Bristol Zoo website. Accessed 09/2019. https://bristolzoo.org.uk/latest-zoo-news/great-animal-count
- Buller, Henry. 2014. "Animal Geographies I." *Progress in Human Geography* 38: 308-18. https://doi.org/10.3828/idpr.2012.24.
- Cage, John. [1939] 2011. "Experimental Music." In *Silence: Lectures and Writings*. Fiftieth Anniversary ed. Middletown: Wesleyan University Press.

- Carr, Neil and Scott Cohen. 2011. "The Public Face of Zoos: Images of Entertainment, Education and Conservation." *Anthrozoös 24(2): 175-189*.
- Chandola, Tripta. 2012. "Listening into Others: Moralising the Soundscapes in Delhi." *International Development Planning Review* 34 (4): 391-408. https://doi.org/10.3828/idpr.2012.24.
- Dragojlovic, Ana, and Annemarie Samuels. 2021. "Tracing Silences: Towards an Anthropology of the Unspoken and Unspeakable." *History and Anthropology* 32 (4): 417-425. https://doi.org/10.1080/02757206.2021.1954634.
- Feld, Steven. 1990. Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression. Philadelphia: University of Pennsylvania Press.
- Feld, Steven. 1996. "Waterfalls of Song: An Acoustemology of Place Resounding in Bosavi, Papua New Guinea". In *Senses of Place*, edited by Steven Feld and Keith H. Basso, 91-135. Santa Fe: School of American Research Press.
- Fernandez, Eduardo J., Michael A. Tamborski, Sarah R. Pickens, and William Timberlake. 2009. "Animal-Visitor Interactions in the Modern Zoo: Conflicts and Interventions." *Applied Animal Behaviour Science* 120 (1-2): 1–8. https://doi.org/10.1016/j.applanim.2009.06.002.
- Friedner, Michele, and Stefan Helmreich. 2012. "Sound Studies Meets Deaf Studies." *The Senses & Society* 7 (1), 72-86. https://doi.org/10.2752/17458931 2X13173255802120.
- Gammeltoft, Tine. 2016. "Silence as a Response to Everyday Violence: Understanding Domination and Distress Through the Lens of Fantasy." *Ethos* 44 (4): 427–447. https://doi.org/10.1111/etho.12140.
- Hanson, Elizabeth. 2002. *Animal Attractions: Nature on Display in American Zoos*. Princeton and Oxford: Princeton University Press.
- Helmreich, Stefan. 2010. "Listening Against Soundscapes." *Anthropology News* (December): 10.
- Hogg, Bennett. 2019. "Geographies of Silence." In *The Routledge Companion to Sound Studies*, edited by Michael Bull, 166-175. London and New York: Routledge.
- Kvale, Steinar. 1996. *InterViews: an Introduction to Qualitative Research Interviewing.* Thousand Oaks, California: Sage.
- Malamud, Randy. 2012. An Introduction to Animals and Visual Culture. London: Palgrave Macmillan.
- Malamud, Randy. 2015. "The Problem with Zoos." In *The Oxford Handbook of Animals Studies*, edited by Linda Kalof, 397-410. Oxford: Oxford University Press.

- Milton, Kay. 2005. "Anthropomorphism or Egomorphism? The Perception of Nonhuman Persons by Human Ones." In *Animals in Person: Cultural Perspectives on Human-Animal Intimacies*, edited by John Knight, 255–271. Oxford and New York: Berg.
- Montgomery, Scott L. 1995. "The Zoo: Theatre of the Animals." *Science as Culture 21:* 565-602. https://doi.org/10.1080/09505439509526406.
- Mullan, Robert, and Garry Marvin. 1987. Zoo Culture. Urbana and Chicago: University of Illinois Press.
- Nénette. 2010. [Film]. Nicolas Philibert. dir. Paris: Les Films d'Ici.
- Ojalammi, Sanna and Nina V. Nygren. 2018. 'Visitor Perceptions of Nature Conservation at Helsinki Zoo'. *Anthrozoös* 31(2): 233-246.
- Orban, David A., Joseph Soltis, Lori Perkins, and Jill D. Mellen. 2016. "Sound at the Zoo: Using Animal Monitoring, Sound Measurement, and Noise Reduction in Zoo Animal Management." Zoo Biology 36: 231–236. https://doi.org/10.1002/zoo.21366.
- Owen, Megan A., Ronald R. Swaisgood, Nancy M. Czekala, Karen Steinman, and Donald G. Lindburg. 2004. "Monitoring Stress in Captive Giant Pandas (*Ailuropoda melanoleuca*): Behavioral and Hormonal Responses to Ambient Noise." *Zoo Biology* 23: 147-164. https://doi.org/10.1002/zoo.10124.
- Paignton Zoo website. Accessed 09/2022. https://www.paigntonzoo.org.uk/
- Parpart, Jane. 2019. "Rethinking Silence, Gender, and Power in Insecure Sites: Implications for Feminist Security Studies in a Postcolonial World." *Review of International Studies 46 (3): 315–324*. https://doi.org/10.1017/S026021051900041X.
- Picker, John M. 2003. Victorian Soundscapes. Oxford: Oxford University Press.
- Quadros, Sandra, Vinicius D. L. Goulart, Luiza Passos, Marco A. M. Vecci, and Robert J. Young. 2014. "Zoo Visitor Effect on Mammal Behaviour: Does Noise Matter?" *Applied Animal Behaviour Science, 156: 78-84*. https://doi.org/10.1016/j. applanim.2014.04.002.
- Rath, Richard Cullen. 2019. "Silence and Noise." In *The Routledge Companion to Sound Studies*, edited by Michael Bull, 73-80. London and New York: Routledge.
- Redfield, Peter. 2018. "Intervention (from the Series Keywords for Ethnography and Design)." Accessed October 20, 2021. https://culanth.org/fieldsights/intervention.
- Rice, Tom. 2013. Hearing the hospital: sound, listening, knowledge and experience. Canon Pyon: Sean Kingston Press.
- Rice, Tom. 2021. An experimental audio tour of an imaginary zoo. https://soundcloud.com/user-102738989/listening-to-the-zoo-audio-guide

- Rice, Tom, A. Badman-King, A. Reed, S. Hurn and P. Rose. 2021a. "Listening After the Animals: sound and pastoral care in the zoo". *Journal of the Royal Anthropological Institute* (N.S. 0: 1-20). Available on Open Access: http://doi.org/10.1111/1467-9655.13608
- Rice, Tom, Adam Reed, Alexnder Badman-King, Samantha Hurn and Paul Rose. 2021b. "Listening to the Zoo: challenging zoo visiting conventions". *Ethnos: Journal of Anthropology*. Available on Open Access: https://doi.org/10.1080/00141844.2021. 1966070
- Rice, Tom. 2022. Listening to the Zoo Project Dataset, 2017-2021. Colchester, Essex: UK Data Service. 10.5255/UKDA-SN-855383
- Samuels, David W., Louise Meintjes, Ana Maria Ochoa, and Thomas Porcello. 2010. "Soundscapes: Toward a Sounded Anthropology." *Annual Review of Anthropology* 39: 329-45. https://doi.org/10.1146/annurev-anthro-022510-132230.
- Schulze, Holger. 2018. *The Sonic Persona: An Anthropology of Sound*. New York: Bloomsbury.
- Sheriff, Robin. 2000. "Exposing Silence as Cultural Censorship: A Brazilian Case." *American Anthropologist* 102 (1): 114–132. https://doi.org/10.1525/aa.2000.102.1.114.
- Sherwen, Sally L., and Paul H. Hemsworth. 2019. "The Visitor Effect on Zoo Animals: Implications and Opportunities for Zoo Animal Welfare." *Animals* 9 (6): 366. https://doi.org/10.3390/ani9060366.
- Sterne, Jonathan. 2003. *The Audible Past: Cultural Origins of Sound Production*. Durham and London: Duke University Press.
- Toop, David. 2010. Sinister Resonance: The Mediumship of the Listener. New York and London: Continum.
- Voegelin, Salomé. 2010. Listening to Noise and Silence: Towards a Philosophy of Sound Art. New York and London: Continuum.
- Von Uexkull, Jakob. 1982. "The Theory of Meaning." *Semiotica 42 (1): 25-82*. https://doi.org/10.1515/semi.1982.42.1.25.
- Warkentin, Traci. 2010. "Interspecies Etiquette: An Ethics of Paying Attention to Animals." *Ethics & the Environment,* 15 (1): 101-121. https://doi.org/10.2979/ete.2010.15.1.101.
- Williams, Sophie. 2020. "Coronavirus: Animals in Zoos 'Lonely' Without Visitors." Accessed April 28, 2021. https://www.bbc.co.uk/news/world-52493750.
- Winogrand, Garry. 2004. The Animals. New York: Museum of Modern Art.