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A Calming Cacophony: Social identity can shape the experience of loud noise.

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Abstract

Environmental Psychology has typically considered noise as pollution and focused upon its negative impact. However, recent research in psychology and anthropology indicates the experience of noise as aversive depends upon the meanings with which it is attributed. Moreover, such meanings seem to be dependent on the social context. Here we extend this research through studying the aural experience of a religious festival in North India which is characterised by loud, continuous and cacophonous noise. Reporting an experiment and semi-structured interviews, we show that loud noise is experienced as pleasant or unpleasant according to the meanings attributed to it. Specifically, the experiment shows the same noise is experienced more positively (and listened to longer) when attributed to the festival rather than to a non-festival source. In turn, the qualitative data show that within the Mela, noises judged as having a religious quality are reported as more positive than noises that are not. Moreover, the qualitative data suggest a key factor in the evaluation of noise is our participants' social identities as pilgrims. This identity provides a framework for interpreting the auditory environment and noises judged as intruding into their religious experience were judged negatively, whereas noises judged as contributing to their religious experience were judged more positively. Our findings therefore point to the ways in which our social identities are implicated in the process of attributing meaning to the auditory environment.

Keywords

noise, sensory experience; religious experience; social identity.

1. Introduction

Typically, noise is conceptualised as a stressor. Certainly, noise pollution adversely affects the lives of millions. Indeed, the US Environmental Protection Agency (EPA) reports that sound which is unwanted because it interferes with such activities as sleeping and conversation causes countless adverse health effects (http://www.epa.gov/air/noise.html).

However, is noise always such a stressor? Or are there contexts in which noise may be experienced more positively? And if so why? These are the questions we address through investigating the experience of a loud auditory environment. Specifically, we investigate pilgrims' auditory experiences at the Magh Mela, a month-long Hindu festival. This occurs every year in Allahabad, Northern India. It is a huge event, attended by millions. Some pilgrims (known as *kalpwasis*) attend for the entire month, living in basic conditions, attending religious meetings, and bathing in the Ganges twice every day. It is intensely noisy. Loudspeakers across the site pump out sacred music, religious discourses and public service announcements. In most places, one can hear several at once. Mark Tully describes just one such moment: "the loudspeakers blaring the messages of the religious organizations were competing with the public address system broadcasting appeals from pilgrims who were lost" (2001, p. 49). Indeed, such is this mix that the auditory environment is not so different from that of a busy Indian street scene.

Yet, for all this ceaseless cacophony, kalpwasis do not report being stressed. In general terms, they talk of being serene and in a state of bliss (Cassidy, Hopkins, Levine, Pandey, Reicher, & Singh, 2007). What is more, there is evidence that this does not just reflect a norm of speaking no ill of the Mela, but rather that well-being is actually enhanced by participating in the Mela (Tewari, Khan, Hopkins, Srinivasan & Reicher, 2012). With regards to the noise at the event, there are reports which indicate that kalpwasis can experience this in positive terms. This is exemplified in the words of one such pilgrim who

draws on the mythical belief that the site of the Mela is at the confluence of not just the

Ganges and Yamuna, but also of a third invisible stream - the Saraswati – the river of

knowledge. He says, referring to the immersive surrounding sounds: "Oh! This is the real

Saraswati. We bathe in the river Ganga and Yamuna, but the real Saraswati is this' (cited in

Prayag Magh Mela Research Group, 2007, p. 314).

This is the phenomenon we address in this paper. How, and when, can people

experience cacophony, as positive? What does this tell us about the importance of

considering not only the physical properties of noise but also the social meanings attributed to

it?

1.2. *Noise and meaning*

The US EPA's conclusions are rooted in a wealth of empirical evidence. Laboratory studies

show exposure to noise leads to lower quantity and quality of sleep, elevated stress-related

endocrine secretions (including adrenaline, nor-adrenaline and cortisol), elevated blood

pressure, greater levels of self-reported stress, lowered performance on cognitive tasks and

the exacerbation of mental illness symptoms (Stansfeld & Matheson, 2003). These various

cardio-vascular, endocrine, cognitive and psycho-pathological effects have also been found

amongst those living in community settings subject to high noise, notably amongst children

living near airports. What is more, environmental noise degrades social relationships, leading

to less helping, more aggression and poorer interpersonal bonds (Evans, 2001).

Yet, it is hard to find a direct relationship between the physical intensity of noise and

its impact on well-being. There is considerable individual variability in responses to noise

(Job, 1988; Ljundberg & Neely, 2007) and such differences account for more of the

variability in outcomes than either the intensity or the duration of noise exposure (Fields,

1993; Job, 1988; Wallenius, 2004). This has led to a focus on the subjective experience of

noise - rather than the noise's objective characteristics (Passchier-Vermeer, & Passchier,

2000; Stansfeld, Haines & Brown, 2000). Critical factors in producing 'noise annoyance' (Guski, Felscher-Suhr, Schuemer, 1999) include the extent to which ordinary activities are disrupted, the extent to which people have control over the noise source, and the extent to which people are subject to other environmental and personal stressors (Cohen, Evans, Stokols, & Krantz, 1986; Evans & Cohen, 1987; Gidlof-Gunnarsson & Ohrstrom, 2007; Leather, Beale & Sullivan, 2003; Lepore & Evans, 1996; Wallenius, 2004).

Social factors also affect such experiences. Some of these factors are social-structural – for example, those of lower socio-economic status are more likely to be exposed to high noise levels than others (Evans & Kantowitz, 2002). Others are bound up with the social framings of noise. Thus when people living near airports think in economic terms they are less annoyed by the noise than when they think in environmental terms (Kroesen, Molin & van Wee, 2011). Elaborating on the insight that 'noise annoyance' depends on how one 'frames' the stimulus, researchers have suggested the meanings attached to noise may be context dependent. For example, drawing upon Mary Douglas's famous observation that dirt can be thought of as "matter out of place", Bailey (1996: 50) suggests that we can conceptualise "noise" as "sound out of place" This implies our auditory experiences are not simply a reflection of the stimulus's intrinsic properties but vary according to context. For instance, the roar of a crowd at a football match along with the strident blare of loudspeakers playing a team's song, may be judged part and parcel of the footballing experience (and as meaningful 'sound'). Yet, in contrast, the roar of a train or plane passing by the stadium may be experienced as an unwelcome intrusion (and as mere 'noise'). This observation has been developed in social anthropological work which explores the complex relationship between sound and place. Indeed, such work considers how sounds - or rather 'soundscapes' - serve to constitute meaningful environments (Atkinson, 2007; Bijsterveld, 2008; Erlmann, 2004;

Samuels, Meintjes, Ochoa & Porcello, 2010; Thompson, 2002) and are integral to the experience of different spaces (Connell & Gibson, 2003).

Given the importance of attending to the meanings attributed to sounds and to the complex relationship between sounds and space, our research addresses the experience of the soundscape that characterises the Magh Mela. Before elaborating on the precise questions we sought to address and our methodology, there is a need to say more on the Mela's auditory environment.

1.3. The Magh Mela at Allahabad

The Magh Mela is on a 12-year cycle. In the twelfth year (the *Maha Kumbh Mela*) it is claimed that up to 50 million people attend and over 10 million can be present on a single bathing day. Every six years (the *Ardh Kumbh Mela*), somewhere in the region of 20 million participate. Yet, even for the 'routine' yearly gatherings – the *Magh Mela* - millions attend, and hundreds of thousands undertake to remain for the full month. It is no exaggeration to dub this event 'the greatest show on earth' (for a history of the event, see Maclean, 2008; for a contemporary description, see Tully, 2001). Kalpwasis seek to attain religious merit and whilst at the Mela attempt to renounce all worldly ways and everyday comforts in order to live a purely spiritual existence. This purpose is expressed in the name 'kalpwasi' itself which is made of two words: *kalpa*, denoting the transformation of the self through inner resolve, and *vas*, denoting the living out of this resolve. Accordingly, kalpwasis' living conditions are basic. Living in canvas tents, they sleep on the ground and eat one meal a day. This is made up of bland foods, eschewing anything spicy *('tamasic'*) or which might excite the body and detract from the pursuit of the spiritual. They also eschew any other activities (such as gossip) which might distract them from their devotions.

Yet, for all this concern with the spiritual, life in the Mela is anything but silent. The kalpwasis' tents are grouped into camps. Some are relatively large, run by religious organisations which have daily meetings where speeches are given and religious dramas are performed. These are amplified and broadcast through loudspeakers. Other camps do not have their own amplified events, but are typically interspersed amongst those that do. According to our observations, there are sound systems attached to camps approximately every 80-100 metres along the main thoroughfares in the Mela. Many camps are religious and between roughly 14.00 and 18.00 hours every day, broadcast talks ('discourses') by religious leaders. Outside of these hours, the sound systems are generally used to play traditional religious music and the recitation of sacred verses (known as *bhajans*). Other camps are operated by political parties, NGOs and social activist organisations concerned with issues such as child exploitation, AIDS and pollution. These also play a mixture of talks and music. The music is never purely popular, but sometimes well-known Bollywood tunes are adapted, the words changed to incorporate religious themes. Finally, in addition to the above is a separate public address system set up by the Mela authorities, with loudspeakers mounted roughly every 25 metres on the main roads of the Mela. Their principal purpose is to convey information about people lost and found. Especially on crowded days, they are almost continuously active. Added to this, are the sounds of car horns, chanting processions, police officers' whistles, and much, much more.

In order to give an idea of the level of noise we took decibel readings on an ordinary day during an ordinary year (Thursday 19th January, 2012) at approximately 17.00 hours. Standing by the entrance to one kalpwasi camp, located well away from the busier areas of the Mela, the level was 76db. Moving to another camp, this time some 60 metres off a main thoroughfare, the level was 76-82db. At a third location, outside one of the larger religious camps on a significant thoroughfare, the level rose to 86db. Moving some 50 metres away

from this camp along the road, the level temporarily fell to 74db, but rose to 80-82db every time a public announcement was made. Finally, at a point on a main thoroughfare, between two camps broadcasting two different discourses, the level was 95db. In sum, the noise level was rarely below 75db, was mostly around 80-85 db and occasionally rose to around 95db - and all this on a 'quiet day' in the Mela. Needless to say, the tents afford virtually no sound insulation.

To give some perspective, according to the website of the US National Institute on Deafness and Other Communication Disorders (NIDCD - see http://www.nidcd.nih.gov/health/education/teachers/pages/common_sounds.aspx) 80 db is the point at which noise becomes annoying and interferes with conversation, 85db is the point where exposure of 8 hours or more causes hearing damage, no more than 15 minutes of unprotected exposure is recommended for sounds in the range 90-100db, music concerts and sports stadium crowds rarely exceed 110Db. By these guidelines, then, the sounds of the Mela are at a level where they are very annoying, almost constantly disrupt conversation, and are often damaging.

The significance of the aural dimension to the Mela may best be conveyed by considering how it features in kalpwasis' everyday routines. Throughout the 2011 Mela two of the present authors lived alongside kalpwasis and documented their daily routines. Observational data gathered throughout this period testify to the inescapable nature of the sounds of the Mela. The researchers and those they lived with were woken early (e.g., at 4.00 am) by the loudspeakers playing *bhajans* which would continue throughout the morning. So too, in the afternoons and early evenings, they were surrounded by the sounds of various discourses. In addition, there were frequent processions of groups of kalpwasis accompanied by vehicles with blaring horns and mobile sound systems, and as these passed they could elicit noisy responses from observing kalpwasis (e.g., 'Jai Maa Gange!': Hail Mother

Ganges!). It is also apparent that although there was a spatial dimension to these sounds such that at different locations different sounds could predominate (here *bhajans* and chanting, there more secular sounds, e.g., music, announcements, car horns), there were many occasions when different sources could be heard simultaneously, such as that as mentioned above, the auditory environment is sometimes not so different from that of a busy Indian street scene.

If these sounds formed the background to the Mela they could also be foregrounded as topics of conversation with kalpwasis commenting on how they had to shout to be heard. Accordingly, we can be sure that the Mela was experienced as loud and that this loudness was a noticeable feature of everyday life. Moreover, as the two researchers also lived with the kalpwasis in their home villages it is possible to appreciate something of the contrast between the noise of the Mela and the quiet of village life.

With this description in mind, let is return to our original question: how can such a constant cacophony be described as 'blissful'? Can this be understood in terms of how these sounds are understood to constitute rather than compromise the essence of the event?

1.4 Research strategy

In order to address kalpwasis' experience of the Mela's auditory environment we conducted two studies. In both our data were obtained from kalpwasis during their pilgrimage at the Mela. The first is experimental and the second is based on semi-structured interview data. In combination, these two studies are designed to both demonstrate and understand the role of social processes in shaping kalpwasis' auditory experiences.

The first study addresses the basic question of whether the social meaning of a sound impacts its evaluation. As discussed above, there is growing interest in this idea, and we have already discussed how the loud roar of a crowd at a football match may be experienced differently by the fans from the loud roar of a train passing by the stadium. However, such a

comparison confounds two issues. It may be that the roar of the crowd is more positively evaluated because it is in some sense meaningful to crowd members. But, it is equally possible that this positive evaluation arises because the stimuli differ. Perhaps the intrinsic properties of roaring voices (the pitch, tone, and timbre etc.) are just more intrinsically pleasant than those of a train? A more rigorous investigation of the role of social meaning in the experience of noise would be one in which the auditory stimulus is kept constant and its social meaning manipulated. This is exactly the logic to our first study in which we play kalpwasis an identical sound-clip but manipulate its social framing. Accordingly, we took advantage of the fact that the mix of sounds at the Mela arising from the simultaneous and competing broadcasts from different loud-speaker systems can resemble the sound of a busy Indian street scene. Specifically, we created an experimental stimulus that sounded as if it could come from either the Mela or such a city street, and manipulated its labelling, such that it was either associated with the Mela or with city streets. To find a difference in kalpwasis' evaluation of this stimulus as a function of its social framing would constitute strong evidence that meaning matters.

Our second study builds on the first. If the same auditory stimulus is experienced more positively when framed as Mela-related, the obvious questions to be explored concern just how kalpwasis experience Mela-related sounds, and what this tells us about the processes involved. Accordingly, our second study reports data from a series of semi-structured interviews with kalpwasis during their Mela pilgrimage. These interviews allow us to explore the ways that kalpwasis experience sound, their reactions to different types of sound, and the various factors that lead the sounds of the Mela to be experienced more or less positively.

2. Study one: An experimental investigation of the auditory experience of Mela-related sound.

To explore the role of social meaning in auditory experience we conducted a two-condition between subjects design experiment. Kalpwasis attending the Mela listened to a sound-clip that was constant across condition. In one condition they were told it was recorded in the religious festival itself ('Mela' condition). In the other they were told it was recorded in busy city streets ('City' condition). We reasoned that when the sound was associated with the Mela it would be judged as less aversive than when it was associated with city streets. We therefore predicted that compared to the City condition, those in the Mela condition would (after listening to the sound) report elevated mood, greater interest in the sound-clip and less physical discomfort. We also predicted they would listen to the clip for longer.

2.1 Method

2.1.1 Participants

Thirty two male Kalpwasis (*M* age = 65 years) participated (City condition = 16; Mela condition = 16). Participants were recruited from those passing along a road close to the testing station.

2.1.2 Procedure and measures

Testing took place in a tent located in the Mela. The sound-clip comprised a mix of sounds. Some were recorded at the Mela and some from elsewhere (including city street noises). This mix was overlain with white noise. The result was a mix in which it was difficult to identify any specific sounds. Pilot-testing confirmed it was ambiguous. The clip was played at a level which pilot testing showed was uncomfortable for the participant population (90 dB). Participants were told '*we are going to play a tape which lasts for a short while. We will put the headphone on your head, you have to listen to the tape as long as you can and when you need to stop – simply take off the headphones yourself'.* In the City condition, the instructions explained '*we have jumbled together various sounds from the city – for example, from markets, from railway stations, from bus station, from various places in the city. OK?*

So now you are going to listen to the sounds of the city.' In the Mela condition, the instructions explained '*we have jumbled together various sounds from the Mela – for example, religious broadcasts over the loud-speaker system, from the Ghats on the Ganges, from the Sangam, from various places in the Mela. OK? So, now you are going to listen to the sounds of the Mela.'*

The time between starting the sound-clip and when the participant removed the headphones was recorded (unobtrusively) by stopwatch. After removing the headphones, the participant completed a brief questionnaire. Participants rated how *interesting* they found the sound-clip, and completed six items concerning their mood: they rated the degree to which they felt *cheerful, relaxed, calm, irritated, tense* and *disturbed*. All answers were obtained on a five-point scale. In order to produce a measure of mood, scores on the last three items were reversed and an average obtained across the six items (*Cronbach's alpha* = .96). Participants also completed a question on the level of discomfort associated with the sound. This question showed six faces with varying expressions of discomfort (Hicks, 2001). They also provided demographic questions and completed an open-ended manipulation check item asking where the sound they heard came from.

2.2. Results

One participant failed the manipulation check question and so was excluded from all analyses. As those in the Mela-condition were older (M = 65.56) than in the City condition (M = 61.80) $t(29) = 2.51$, $p = .018$) the parametric analyses of between-condition differences included age as a covariate (all tests reported are two-tailed).

Participants' mood ratings were more positive in the Mela (*M* = 4.00 *SE* = .18) than City condition (*M* = 1.55, *SE* = .19) $F(1,28) = 80.00$, $p < .001$, $\eta^2_p = .74$ (the effect of the age covariate was non-significant). The sound-clip was judged more interesting in the Mela (*M* = 3.78, *SE* = .27) than City condition (*M* = 1.57, *SE* = .28) $F(1,28) = 29.73$, $p < .001$, η^2_p

= .52 (age was non-significant). The sound clip was also judged to be less uncomfortable in the Mela (M = 1.77, SE = .22) than the City condition (M = 4.92, SE = .23) F (1,28) = 87.16, p < .001 $\eta^2{}_p$ = .76 (age was non-significant). With regards to the amount of time that the clip was listened to, those in the Mela condition (M = 75.69 sec, SE = 9.52) listened for longer than those in the City condition (M = 40.40 sec, SE = 9.86), F (1, 28) = 6.04, p = .02, $\eta^2{}_p$ = .18 (again, the age covariate was non-sigificant). As the distribution to the listening-time data was non-normal (*skewness* = 1.93, SE = .42; *kurtosis* = 5.08, SE = .821), we repeated the analysis using the non-parametric *Mann-Whitney* statistic. This confirmed the conditions' distributions differed (p = .048).

2.3. Study one discussion

As predicted, when the sounds were believed to originate in the Mela (as opposed to the city) participants reported more positive mood, higher level of interest in the stimulus, and less discomfort. They also listened to it longer. All this is as predicted and shows that the social framing of a sound affects the way it is evaluated and experienced.

This suggests that, if pilgrims at the Mela do evaluate the loudness of the environment favourably, this cannot be put down to a tendency for kalpwasis to rate everything favourably in a completely undiscriminating way. As we have seen the same sound is judged negatively when attributed to the city.

In addition, these data suggest that favourable evaluations of Mela-related sounds may not be explicable in terms of the distinctive nature of the sounds therein (but are bound up with the meaning associated with those sounds). As we have noted, the mixing of the output from multiple loudspeakers, the cries of hawkers, the babble of the crowd and the horns of passing traffic make what one hears in the Mela comparable to what one hears in busy city streets. Indeed, were it not for this similarity then our study would have lacked

credibility and participants would not have been equally willing to accept the cover story irrespective of whether we attributed our sound clip to the city or to the Mela.

But if the study provides strong reasons to consider that social framing rather than physical characteristics underlie the ways that pilgrims experience the loudness of the Mela, it remains to determine exactly how this social framing works. There are at least three possibilities. The first is in terms of *valence*. That is, the Mela is seen as a positive context (more positive than the city) and so anything associated with it, including sounds, will be evaluated more positively. The second is in terms of *consonance*. That is, the study took place in the Mela. Hence sounds are evaluated in terms of how fitting they are with that context. When sounds are believed to be city-related they are less fitting and hence evaluated less positively than when they are believed to come from the Mela itself. The third is in terms of *social identity*. That is, the study took place with Hindu pilgrims (kalpwasis) for whom participation in the Mela is central to their self-definition. Anything which goes towards constituting that event could therefore positive for them. Hence Mela-related sounds are evaluated more positively than sounds from elsewhere.

The design of this experimental study does not allow us to distinguish between these different possibilities. Accordingly, we now turn to a more in-depth study of the meanings that noise has for kalpwasis in the Mela, whether there are particular noises that they find more or less positive than others, what it is about noise that makes it positive and how this speaks to the role of valence, consonance and social identity in explaining the framing effect that we have demonstrated experimentally here.

3. Study two: An interview-based investigation into the significance of sound in the Mela

3.1 Method

Semi-structured interviews were conducted with 37 kalpwasis attending the Magh Mela in 2010. Interviewees were strategically sampled from the broader population of kalpwasis using a quota strategy intended to span the diversity of age, gender, caste and regional backgrounds – variables known from previous research to impact upon the perception and experience of the Mela. The resultant sample contained 24 men and 13 women with an age range of 40-83 years of age and a mean age of 63.5. Of these 24 were 'Brahmin' or priestly caste (high caste), 5 'Kshatriya' or warrior caste (high caste) and 8 'other backward caste' (low caste). These proportions closely match the caste distribution of pilgrims as found in the survey samples of this pilgrim population (e.g. Tewari et al., 2012). On average, the respondents had attended 12 previous Melas (mean = 11.8). Their education status varied from uneducated to Ph.D. The interviews were conducted across the different residential areas of the Magh Mela by gaining access to different camps with a view to obtaining respondents from across gender, age and caste groups.

In order to access these participants, the interviewers approached residential camps and negotiated entry through a gatekeeper (typically the 'Panda' or religious leader). The interviewers explained the purpose of the research to the participants and assured them of the anonymity of their responses. In some cases it was nearly impossible to rule out the participation of the other participant(s). In these cases the primary respondent was always noted and the questions addressed primarily to them. The interviewers were two trained social psychologists who spoke Hindi, English and relevant local dialects. Given local cultural norms governing gender interactions, the females were typically interviewed by a female interviewer and males by a male interviewer, except in cases where multiple participants afforded a mixed gender exchange.

The interviews were semi-structured and conducted in Hindi or local dialects. They were designed to cover a series of themes important in the context of participation,

experiences and practices in the Mela. The interviews generally lasted between 30 minutes to 80 minutes. All interviews were recorded, transcribed and translated in English by the interviewer and rechecked by the second interviewer.

A theoretically guided thematic analysis (Braun & Clarke, 2006) was conducted on the resultant data corpus. All data was incorporated into the data analysis package Atlas.ti for coding and all instances in which respondents made reference to their temperature or that of the environment were identified. From this, three main themes or recognisably discrete ways of talking about the experience of noise were identified which exhaustively accounted for all of the data. Exceptions or deviant cases were identified by the analysts and discussed thoroughly between the authorial team until the themes were reorganised and an exhaustive account of the data could be generated.

3.2. Analysis

Our analysis of the interview data is organised as follows. First, we consider how participants describe the auditory environment and its significance for them. Second, we explore how participants differentiated between various auditory stimuli and evaluated them differently. Third, we consider how the overall auditory experiences of the Mela (that is, its 'soundscape') impacted on the everyday lives and experiences of our participants.

3.2.1. Social significance and evaluations of noise at the Mela: The first, and most basic point to be made is that our respondents routinely reported that the Mela was a very loud place. One (P25), for example, described being surrounded by loudspeakers broadcasting different sounds from different camps. She characterised the result as a '*cacophony*' of noise which makes routine conversation almost impossible:

> Extract 1: (P25: 60 yr old female)
> *P25: for me if anyone comes here I will have to shout otherwise nothing can be heard*
> *I: OK*
> *P25: That's it. Otherwise, it is the sound of God's name coming in your ears*
> *I: coming in your ears?*

P25: it is good.

What is striking here is that, despite the disruption, the noise is characterised as '*good*'. What is more, it is good because it is *'the sound of God's name coming in your ears'*. What she means by this is that the loudspeakers are broadcasting religious music, religious chants and religious discourses. They are, quite literally, conveying the names of Hindu deities. What counts for her evaluation, then, is not the level of the noise, but its content and meaning to her as a kalpwasi.

Even when interviewers insisted that the level of the noise must be bothersome, respondents would resist the suggestion and on the same grounds as above. As the next extract makes clear, it seemed self-evident to these kalpwasis that the name of God cannot be experienced negatively:

> Extract 2: (P18 R2: older female)
> *I: yes. The sound systems here keep running all day. Aren't you ever bothered by this, that there is noise all the day and all this…..*
> *P18 R2: no we don't have any problem. The sound of God's name is playing, why will we feel bad?*

It may be that part of the pleasure lies in the precise nature of the message - in the stories that are told and the language that is used. But first, this is unlikely in cases where different sound systems are clashing and the details are hard to make out. Second, even when people cannot comprehend the details it makes little difference. What counts, it seems, is the knowledge that the message is about God, not the message itself. Thus P26, a 75 year old woman, was asked if she understood the discourses she replied that 'sometimes I do and sometimes I don't'. It was enough, for her, simply to hear the name of the deity: "*God's name, however you utter it feels good*". Or again, P31, a 61 year old woman, laughed at her inability to understand what was being said in the broadcasts and explained that "*we get the opportunity to hear (religious) knowledge. We get to hear Raam-Naam (the name of the deity). Even if we do not understand we still absorb it*".

Some respondents stressed the religious nature of the messenger as well as the message. Thus P21 (a 60 year old woman) talked of her pleasure in hearing *'the voices of the saints'* - those holy individuals whose words are broadcast through the loudspeakers. Another respondent referred to a particular such speaker as 'the Babaji':

> Extract 3: (P16: 57 yr old female)
> *I: So here, all around there is this noise which goes on all around here, how do you feel about it? The sound system in on always on, the Babaji and people like him are speaking and giving discourses*
> *P16: (interrupting) it feels good. When Babaji talks of good things, when he talks well, then I feel good*

But messengers do not need to be particularly noteworthy. It is enough to be an ordinary believer. In the extract below a contrast is drawn between a crowd of fellow religious devotees intoning religious chants and a crowd of people in the city who have nothing in common with each other (or the speaker) beyond being in the same place at the same time:

> Extract 4: (P10: 55 yr old male)
> *I: Ok, if we put it like this, there is one crowd at the railway station another crowd is of kalpwasis.*
> *P10: There is a crowd of the railway station, a crowd at the bus station, crowd of the Mela, yes.*
> *I: hmm*
> *P10: this, this, this is some sort of cultural crowd, you can call it a cultural crowd. You can't sleep all night, loudspeakers are blaring, there is noise. People are singing Lord Ram's name. The reciting of the Ramayana is going on. There are religious songs going on. All these things.*
> *I: What is the difference between the two?*
> *P10: that crowd is not social, it is personal. This is a social crowd. You can call it a social and cultural crowd. This is the difference. That is the crowd of necessity. Since people are passing through there is a crowd. Here, people stay put, we have to stay for one month, sing religious songs, Sita-Rama, Sita-Rama, Om Namah Shivay, this is what we have to do.*

The contrast is not in terms of noise levels. If anything, the speaker is more explicit about the racket at the Mela (e.g. *'blaring'* loudspeakers). Nor is it in terms of disruptiveness. Again, if anything, the speaker is more explicit about the problems at the Mela ('you can't sleep all night'). Rather, the contrast is in terms of meaning. Noise in the city is incidental.

Noise in the Mela has (religious) significance. But more than that, religious noise at the Mela

is integral - necessary - to the event as a whole. It constitutes the event to the extent that,

without it, the Mela would not be the Mela. There would be no point in coming. This is made

explicit in the following extract (where P22 is joined by another, P22R2):

> Extract 5: (P22: 51 yr old female)
> *P22: there is no disturbance for us*
> *I: no trouble?*
> *P22: no*
> *I: like there is this noise all the time, there is this crowd, people are coming*
> *P22: no. No disturbance*
> *P22R2: it feels so nice*
> *I: it feels so nice?*
> *P22: it is pure joy*
> *P22R2: you get darshan. There are discourses from morning to evening. This is*
> *pure joy. This is what we have come for, no?*
> *P22: religious songs play around the clock*
> *I: ok. If they didn't play religious songs and just play any other songs then you*
> *wouldn't like it?*
> *P22: no, no, then my heart would not be in it*
> *I: then you wouldn't?*
> *P22: no…*

Thus far, our analysis of the interview material largely corroborates the findings of the

experimental study. That is, positive evaluations of noise in the Mela are not tied to its

physical intensity but rather to its social framing as denoting religion. We are not yet in a

position to distinguish between explanations of this framing effect is terms of valence (i.e. the

Mela and religion are seen positively, so is anything associated with them), in terms of

consonance (i.e. religious noise which is consonant with the religious nature of the Mela is

seen positively) or in terms of identity (i.e. those for whom the religious nature of the Mela is

highly self-relevant view religious noise in the Mela positively). Nonetheless we have already

encountered some pointers of relevance to this issue.

First, it is striking that our respondents, when voicing approval (or, at least, lack of

disapproval) of loud noises, don't refer to just any of the noises that occur in the Mela. They

don't mention public service announcement, the cries of traders or the sound of traffic. Rather

they refer to religious noises. This suggests that the fact that a noise originates in the Mela or else is associated with the Mela is not enough to make it positive. Rather, it is critical that the noise is consonant with - or even constitutive of - the core religious dimension of the event.

Second, when, in extract 1, P25 expresses no concern about an ability to converse, or when, in extract 5, P22 says she is not disturbed by the noises because listening to religious discourses is what she has come for, it suggests that not just anyone in the Mela would be so positive. If one was a trader who relies on dialogue to sell one's wares, or if one were a service worker who had come to work rather than to listen to discourses, then the noise of the Mela might well be disruptive. In other words, kalpwasi identity, and the priorities associated with this identity, may well be critical to the significance associated with sounds (and hence the evaluations made of them). These are the issues which will concern us in the next two sections of the analysis.

3.2.2 Distinguishing positive and negative noises: We have concentrated above on the nature of positive evaluations of the noises at the Mela, That doesn't mean that there are no negative evaluations. Extract 6 provides one such instance:

> Extract 6: (P20: 60 yr old female)
> *I: OK auntie, the Mela is so crowded, there are so many different types of people here, and on the main bathing days it is particularly crowded and there is noise throughout the day. What is your experience regarding this? In other words, do you like it or do you*
> *P20: (interrupting) When it is extremely noisy I find it problematic*
> *I: OK you find it problematic*
> *P20: yes, when it is extremely noisy I find it problematic when we come to our camp where you are now, then we get some peace.*
> *I: ok…*
> *P20: so when we are here we feel like seeing, taking the name of God, seeing God, but when we will go to very noisy places , then your mind is a strange thing you know, it will wander here and there, for example, 'who is fighting there?', 'what is happening there? Let's go and see' and so on. So we go before sunrise to bathe.*

At first glance, this may seem at odds with what we have shown and argued thus far. For P20, the crowds at the Mela are aversive, their noise is intrusive and hence she seeks

actively to withdraw from such environments to the relative calm of the kalpwasi camp.

However, in her last turn, it becomes clear that the types of noises she is referring to are very

different to those which elicit approval in others. They are they noises associated with

conflict or spectacle rather than devotion. They are sounds which distract from the ability to

concentrate on religious experience and the aim of withdrawal is precisely to regain that

ability. The ideas expressed in extract 6 are not opposed to those we have previously

encountered. They represent the other side of the same coin. If noises that are consonant with

religion and which facilitate religious practice are evaluated positively, so noises which are

dissonant with religion and which compromise religious practice are evaluated negatively.

This can be seen with particular clarity by contrasting the next extract to extracts 1 to

5:

> Extract 7: (P2: 53 yr old man)
> *P2: now hurdles brother, every day! Sound systems go up. Forget about the crowd! Who knows what the government, now look this is government regulation. We kalpwasis have come here to pray not to listen to music. Now here they have fitted sound systems everywhere. We cannot concentrate for even one minute on our prayers. Now, we are not at such a stage that we are one with God, so disturbance is how shall I put it, being created by our government. The rest is…*
> *I: you mean to say the noise*
> *P2: (interrupts) this should not be put here. They can do what they like in their own places. Where there are kalpwasis they should be left to do their prayers! Now here they have put them everywhere and tell us, we cannot sleep nor can we do our prayers. Now if these by mistake (pause) there is so much noise, we speak so loudly, then it is fully disturbed!*

Here, as before, the reference is specifically to the sounds broadcast from

loudspeakers. What is more, the songs referred to here are, musically, often almost

indistinguishable from the religious songs referred to above. But the point is not what they

sound like but what they denote. Secular music, whatever it sounds like, has no place in the

Mela. It is opposed because it is alien and hence an intrusion – and it is noteworthy that P2

further underlines this by associating such music with an alien outgroup – the government.

This chimes with the complaints of P12, a 65 year old man. He contrasts the past when the

Mela administration was in the hands of holy men –representative of the ingroup – to the

present day control by political authorities. "*Now, it is nothing like it used to be*", he says.

"*Now it is only commotion*". The word commotion beautifully summarises the way

kalpwasis experience noise shorn of its religious meaning. Commotion is everything that

kalpwasis seeks to avoid. It is the precise opposite of that spiritual serenity which they seek in

the Mela.

By now, however, it should be clear not only that consonance with spiritual values is

critical to the evaluation of noise in the Mela, but also that this consonance is rooted in

kapwasi identity. In Extract 7 above, for instance, the speaker constantly expresses his

concerns in relation to group values and priorities: it is kalpwasis who have come to pray,

kalpwasis who cannot concentrate, kalpwasis who should be left their prayers. Let us finish

by making the relevance of identity to the experience of noise more explicit.

3.2.3. Soundscapes and identity based practices. One of the most eloquent descriptions of the

place of noise in the experience of a kalpwasi is provided by P21:

> Extract 8: (P21: 60 yr old female)
> *P21: Watch the crowd of Mother Ganga, chanting 'Sita Ram' and moving along.*
> *After bathing when we light (the lamp) at the ghat, what comes out from our*
> *mouths? We start reading verses of Mother Ganga. There are so many*
> *loudspeakers hung up, people are moving along singing bhajans and all...hey*
> *Krishna Govind hare Murari, hey nath Naryan Vasudeva! (a line from a bhajan*
> *containing the names of Gods). It comes out automatically.....*
> *I: (interrupting) they're playing very loud*
> *P21: it comes out automatically*
> *I: It's so loud aunty, doesn't it hurt your ears? All the time it is being played so*
> *loud.*
> *P21: daughter this year, the volume is low. Don't know what Mayawati* [the
> current chief minister of the local Indian State of Uttar Pradesh] *has ordered.....*
> *I: (Laughs).*
> *P21: otherwise the place would be buzzing. Like right now you can smell the*
> *hawan (an incense) from each and every tent, look carefully you can*
> *I: (overlapping) yes*
> *P21: the environment around here becomes so beautiful.*

At the start, people are defined in collective terms as *'the crowd of Mother Ganga'* -

the Ganges being a sacred river for all Hindus but particularly important to those pilgrims

who devote themselves to bathing twice a day in its waters over the whole month of the Mela. Subsequently she denotes the crowd, in which she herself is included, as '*we*'. There is never a reference to herself, or to anyone else, in individual terms. The experience she describes attaches to all members of the crowd by virtue of being kalpwasis.

Second, the noises she describes are both external and internal to the crowd. There is a consonance between the two and indeed the loudspeakers facilitate the religious chanting of crowd members. More than this, people cannot help but be drawn into singing the names of the Gods.

Third, the noise of the loudspeakers is not experienced as too loud. If there is any problem it is that they are not loud enough. There is another telling contrast here. If P2 in extract 7 accuses the government of being responsible for playing secular music too much, here P21 accuses the government (in the form of Mayawati, the State Chief Minister) of being responsible for playing religious music too softly!

Fourth and finally, the overall experience is one where everything - the sounds of music, the smells of incense, the sights of the Ganges, the chants of the crowd - coheres around religious prescriptions and hence provides an environment that is '*beautiful*'.

Putting all these elements together, we see how the noises of the Mela combine to form an overall soundscape. This is part of an immersive environment which allows people to become totally centred on kalpwasi spiritual practices and this is something that is experienced as highly positive. Social identity is central here. Indeed it is possible to reframe the above by saying that noise is evaluated less for its volume than for its ability to contribute to (or distract from) the ability of kalpwasis to enact their identities.

It is possible to take this argument one step further. Sometimes, sound (or rather, soundscapes) are not just part of an immersive environment. The soundscape is an immersive environment which drowns everything else out, which draws people totally into immediate

religious experience and which excludes all else:

> Extract 9: (P25: 60 yr old female)
> *P25: We feel good. We all move singing and playing instruments, those who know the song, join them in singing….*
> *I: yes*
> *P25: we chant, we recite, whatever is on the sound system we join in.*
> *I: yes*
> *P25: it transforms the mind. We don't even remember our home, where we are. There is so much of noise (laughs).*

Here, as in the previous extract, we can see the mirroring of the sounds from the loudspeakers and the sounds of the group (again referred to with the collective 'we' and not the individual 'I'). We see how people are drawn into participating in a collective religious practice. But in many ways this extract sums up the whole point of being a kalpwasi, which is to throw off one's worldliness, forget one's day to day concerns, and to devote oneself totally to spiritual activities - to become at one with the Gods. In this way, the manner in which people give meaning to noise in the Mela, and the way that they value it, is not only about its consonance with the religious nature of the Mela. It is intimately bound up with their identity as kalpwasis and their ability to be true kalpwasis.

3.3. Study two discussion

This qualitative study both confirms and extends the findings of the experimental study. It shows quite clearly that evaluations of noise are not a function of its physical properties. After all, comparing extracts 7 and 8, we see that people can be irked by relatively muted sounds and experience very loud sounds as beautiful - complaining, if anything, that they are not loud enough! What is critical, then, is the social framing and the social significance of the noise.

By exploring in some depth the meaning and significance of noise in the lives of our respondents we can go some way towards elucidating how this framing works and distinguishing between the roles of valence, consonance and social identity. The first and most obvious point is that 'valence' seems an inadequate explanation of how people

experience and evaluate noise. Just being associated with the Mela is not enough. Many sounds in the Mela are seen as intrusive, they are seen negatively and (as we saw in extract 6) people try and get away from them. What is important is whether the sounds are consonant with the religious meaning of the Mela. Indeed much of what we have uncovered could be summarised in the simple phrase 'religious, good; secular, bad'.

However, perhaps most interestingly, our analysis points to the importance of social identity processes. That is, it is not consonance between the nature of noise and the religious meaning of the Mela that is important, so much as consonance between the nature of noise and the religious meaning of the Mela *for kalpwasis*. But here, it is important to stress that (kalpwasi) social identity is not just about ideas and beliefs, but also about actions and social practices. Our evidence suggests that noise is evaluated in terms of whether it compromises or facilitates the ability of kalpwasis to enact their identity. If it compromises, it is seem as intrusive and irksome. If it facilitates, it is not seen as intrusive but as beautiful.

One important caveat is in order. Unlike the experimental study, the rich interview material allows us to explore the dynamics (specifically, the identity dynamics) which are implicated in evaluations of noise. However, like the experimental study, our interviews are limited to kalpwasis. Thus we are not able to provide comparative data or explore the different ways in which those with different identities evaluate sound. From what we have found here, we would hypothesise that the market trader, the service worker and the tourist, as a function of their specific beliefs, values and practices, would evaluate the sounds of the Mela in different ways.

4. General discussion

The Mela is truly a cacophonous event. The sheer volume of noise, its multiple sources and its persistence throughout the days and nights suggest at first glance that we could expect reactions of annoyance and stress. Yet, as both of our studies show, this turbulent stream of

noise is not perceived as overwhelming or as indiscriminately invasive or irritating. Indeed it is often experienced as positive, blissful and serene. This paradox is at odds with much conventional research into noise perception and so has potentially wider implications for the understanding of the social nature of sensory experience.

On first inspection, the reason for this positive experience could be argued to be located in the particularities of this event and its attendees. To be sure, there is much evidence, reported here and elsewhere (e.g. Tewari et al., 2013; Pandey et al., 2013), that this collectivity has strong norms of cooperation, social support and helping behaviour which no doubt make the endurance of the uncomfortable environment easier. But our analysis indicates that our respondents actively discriminate between different noises, reacting positively to some and negatively towards others, independently of the intensity or persistence of the noises themselves. In other words, pilgrims' reactions to noise depended on some perceived quality of the sound. Consequently, there is evidently much more going on here than straightforward desensitization or resilience to an environmental stressor.

We found our participants to report an array of complex and nuanced responses to different noises. Again we might provide a simplified explanation, that the pleasantness of the experience might relate to the objective quality of the noise, so perhaps clear speech or melodious music was evaluated more positively than screeching sound systems or blaring loudspeakers. However, as our experiment succinctly demonstrates through the use of a single mélange of sounds attributed to different sources, it is the perceived origins of the noise rather than its absolute qualities that affect the experience of the pilgrim.

Our interview study goes on to demonstrate that the key determinant of whether a noise is perceived as positive or negative, is its fit with the pilgrim's ideals and expectations of the Mela. Noises which were deemed appropriate to the Mela such as the religious songs and discourses were reportedly experienced positively (regardless of sound quality) while

those viewed as intrusive or alien to the Mela, such as political broadcasts, were reported as intrusive and aversive. Crucially though, our data demonstrate that this was more than simply a positive evaluation of the Mela as a sacred place. Noise was always interpreted in relation to the purpose of the Mela, the religious experience of the attendees or the religious practices which kalpwas entails. In a manner akin to the way in which total immersion in a media environment has been found to heighten the enjoyment of cognitive and emotional engagement or 'transportation' (Green & Brock, 2000; Green Brock & Kaufman, 2004), our pilgrims sometimes reported being swept away by the noise and of forgetting themselves in the overwhelming sensation. From this perspective, the very scale and ubiquity of noise at the Mela may be in itself an identity-enhancing experience.

Of course our argument would be strengthened by examination of the experiences of non-kalpwasis, including day bathers and those who provide services and sell goods at this event. Theoretically, we would expect these people to fare less well in this noisy environment. Indeed, our work elsewhere demonstrates that non-kalpwasis typically respect pilgrims for their distinctive ability to tolerate the harsh conditions of the Mela (Pandey et al., 2013). Yet still, a systematic analysis of the experiences of non-pilgrims would shed further light upon how cacophony impacts upon those with low identification or those outside of the pilgrim group.

However on the basis of our present findings, we argue that our results contribute to the literature on the perception and experience of environmental noise in three broad ways. First, our findings build on the growing body of sociological and anthropological literature which suggests that the perception of sound is shaped by meanings attributed to it and in turn is demonstrably context-dependent (Atkinson, 2007; Bijsterveld, 2008; Erlmann, 2004; Samuels, Meintjes, Ochoa & Porcello, 2010; Thompson, 2002). In particular, framing noise as coming from the Mela environment affords a more positive experience of this cacophony

than does a framing in terms of the city. Second, this experience appears to be identity-based and collective in nature. While there is individual variability in the reports of the positivity of the noise at the Mela this is systematically rendered meaningful by pilgrims though reference to their collective experience as pilgrims. Third, the experience of sound for some participants appears to be bound up in the expression and enactment of this identity. Sound is the medium as well as the milieu of identity practice for these pilgrims.

More generally from a social identity perspective, this collective enactment of identity through the creation and experience of sound mirrors recent developments in the theorizing of 'collective self-objectification' (CSO) in crowd psychology (Drury, Cocking, Beale, Hanson, & Rapley, 2005; Drury & Reicher, 2005). This phenomenon occurs when the identity of the crowd is felt to be made real through the actions of the crowd members such as protesting, taking control of a territory or simply celebrating their identity. Such experiences of CSO have been found to enhance the experience of collective participation and to predict a strengthening of group identity as well as future participation in collective events. In the present instance it would appear that the internalized social identity of the pilgrims is felt to be sonically projected onto the environment and it would appear that, for a short while at least, the world is constituted by the sound of pilgrims' own being. This sonic phenomenon of course bears closer scrutiny, especially in the light of the rich traditions of collective vocal performance in the Mela as well as the great many crowd experiences which facilitate a similar sensory experience - from football chanting (Thrills, 1988), music concerts (Moore, 2007), marching bands (Jarman, 1997) and singing in the workplace (Korczynski, Pickering, Robertson & Jones 2005) to the wide variety of religious services and celebrations which have collective noise-making as a central focus. On the basis of our evidence here, we can suggest that such soundscapes which operate to create a soundscape of one's own social identity are likely to afford a rich vein of further inquiry.

References

Atkinson, R. (2007). Ecology of Sound: The Sonic Order of Urban Space*. Urban Studies, 44 (10)*, 1905-1917. doi:10.1080/00420980701471901

Bailey, P. (1996). Breaking the sound barrier: A historian listens to noise. *Body & Society, 3,* 49–66. doi:10.1177/1357034X96002002003

Bijsterveld, K. (2008). *Mechanical Sound: Technology, Culture and Public problems of Noise in the Twentieth Century.* Cambridge, MA: The MIT Press.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77-101. doi:10.1191/1478088706qp063oa

Cassidy, C., Hopkins, N., Levine, M., Pandey, J., Reicher, S., & Singh, P. (2007). Social identity and collective behaviour: Some lessons from Indian research at the Magh Mela at Prayag. *Psychological Studies, 52,* 286–293.

Cohen, S., Evans, G. W., Stokols, D., & Krantz, D. S. (1986). *Behavior, health, and environmental stress.* New York: Plenum.

Connell, J., & Gibson, C. (2004). World music: Deterritorializing place and identity. *Progress in Human Geography*, *28*(3), 342-361. doi:10.1191/0309132504ph493oa

Drury, J., Cocking, C., Beale, J., Hanson, C., & Rapley, F. (2005). The phenomenology of empowerment in collective action. *British Journal of Social Psychology*, *44*(3), 309-328. doi:10.1348/014466604X18523

Drury, J., & Reicher, S. (2005). Explaining enduring empowerment: A comparative study of collective action and psychological outcomes. *European Journal of Social Psychology, 35,* 35–58. doi:10.1002/ejsp.231

Erlmann, V. (Ed.). (2004). *Hearing Cultures: Essays on Sound, Listening, and Modernity*. Oxford: Berg.

Evans, G.W., (2001). Environmental stress and health. In: Baum, A., Revenson,

T., Singer, E. (Eds.), *Handbook of Health Psychology* (pp. 365–385). Erlbaum, Mahwah, NJ.

Evans, G., & Cohen, S. (1987). Environmental stress. In D. Stokols, & I. Altman (Eds.), *Handbook of Environmental Psychology* (pp. 571–610). New York: Wiley.

Evans, G. W., & Kantrowitz, E. (2002). Socioeconomic status and health: The potential role of environmental exposure risk. *Annual Review of Public Health*, *23*, 303–331. doi:10.1146/annurev.publhealth.23.112001.112349

Fields, J. M. (1993). ''Effect of Personal and Situational Variables on Noise Annoyance in Residential Areas,'' *Journal of the Acoustical Society of America*, *93*, 2753–63. doi:10.1016/j.jsv.2005.11.034

Green, M.C., & Brock, T.C. (2000). The Role of Transportation in the Persuasiveness of Public Narratives. *Journal of Personality and Social Psychology 79*(5), 701–21. doi:10.1037/0022-3514.79.5.701

Green, M.C., Brock, T.C. & Kaufman, G.E. (2004). Understanding Media Enjoyment: The Role of Transportation into Narrative Worlds. *Communication Theory, 14*(4), 311–27. doi:10.1111/j.1468-2885.2004.tb00317.x

Gidlof-Gunnarsson, A. Ohrstrom, E. (2007). Noise and well-being in urban residential environments: the potential role of perceived availability to nearby green areas. *Landscape and Urban Planning, 83*,115–126, doi:10.1016/j.landurbplan.2007.03.003

Guski, R**,** Felscher-Suhr U., & Schuemer, R. (1999).The concept of noise annoyance: how international experts see it. *Journal of Sound and Vibration, 223*, 513–27. doi: 10.1006/jsvi.1998.2173.

Hicks, C. L., von Baeyer, C. L., Spafford, P. A., van Korlaar, I., & Goodenough, B. (2001). The Faces Pain Scale-Revised: toward a common metric in pediatric pain measurement. *Pain*, *93*(2), 173. doi:10.1016/S0304-3959(01)00314-1

Jarman, N. (1997). *Material Conflicts: Parades and Visual Displays in Northern Ireland.* Oxford: Berg.

Job, R. F. S. (1988). Community response to noise: A review of factors influencing the relationship between noise exposure and reaction. *Journal of the Acoustical Society of America*, *83*, 991–1001. doi:10.1121/1.396524.

Korczynski, M., Pickering, M., Robertson E., & Jones K. (2005). 'We sang ourselves through that war!' Woman, music and factory work in world war two. *Labour History Review, 70* (2), 185-214. doi:10.1179/096156505X53618

Kroesen M., Molin, E.J.E., & van Wee, B. (2011). Policy, personal dispositions and the evaluation of aircraft noise. *Journal of Environmental Psychology, 31* (2) 147-157. doi:10.1016/j.jenvp.2010.09.004

Leather, P., Beale, D., & Sullivan, L. (2003). Noise, psychosocial stress and their interaction in the workplace. *Journal of Environmental Psychology*, *23* (2), 213–222. doi:10.1016/S0272-4944(02)00082-8

Lepore, S. J., & Evans, G. H. (1996). Coping with multiple stressors in the environment. In M. Zeidner, & N. S. Endler (Eds.), *Handbook of Coping* (pp. 350–377). New York: Wiley.

Ljungberg J.K., & Neely, G. (2007). Stress, subjective experience and cognitive performance during exposure to noise and vibration. *Journal of Environmental Psychology, 27* (1), 44–54. doi:10.1016/j.jenvp.2006.12.003

Maclean, K. (2008). *Pilgrimage and power: the Kumbh Mela in Allahabad, 1765-1954*. Oxford University Press, USA.

Moore, R. (2007). Friends Don't Let Friends Listen to Corporate Rock: Punk as a Field of Cultural Production. *Journal of contemporary ethnography*, *36* (4), 438-474. doi: 10.1177/0891241607303520

Pandey, K., Stevenson, C., Hopkins, N., Reicher, S. & Shankar, S. (2013). Cold Comfort at the Magh Mela: Social identity processes and physical hardship. Manuscript submitted for publication.

Passchier-Vermeer, W., & Passchier, W. F. (2000). Noise exposure and public health. *Environmental Health Perspectives Supplements*, *108*(1), 123–131.

Prayag Magh Mela Research Group (2007). Living the Magh Mela at Prayag: Collective identity, collective experience and the impact of participation in a mass event. *Psychological Studies (Special Issue on the Social Psychology of Collectivity), 52*, 293-301.

Samuels, D. W., Meintjes, L., Ochoa, A. M., & Porcello, T. (2010). Sounded Anthropology. *Annual Review of Anthropology, 39*, 329–345. doi: 10.1146/annurev-anthro-022510-132230

Stansfeld S., & Matheson M.P. (2003). Noise pollution: non-auditory effects on health. *British Medical Bulletin, 68,* 243–257. doi: 10.1093/bmb/ldg033

Stansfeld, S., Haines, M., & Brown, B. (2000). Noise and health in the urban environment. *Reviews of Environmental Health*, *15*, 43–82. doi: 10.1515/REVEH.2000.15.1-2.43

Tewari, S., Khan, S., Hopkins, N., Srinivasan, N., & Reicher, S. (2012). Participation in Mass Gatherings Can Benefit Well-Being: Longitudinal and Control Data from a North Indian Hindu Pilgrimage Event. *PloS one*, *7(10),* e47291.

Thompson, E. (2002). *The soundscape of modernity: architectural acoustics and the culture of listening in America, 1900-1933*. Cambridge, MA: MIT Press.

Thrills, A. (1988). *You're not singing anymore: A riotous celebration of football chants and the culture that spawned them*. London: Ebury Press.

Tully, M. (2001). *The Kumbh Mela.* Delhi: Indica.

Wallenius, M. A. (2004). The interaction of noise stress and personal project stress on

    subjective health. *Journal of Environmental Psychology, 24,* 167–177. doi:

    10.1016/j.jenvp.2003.12.002