SoundEffects
An Interdisciplinary Journal of Sound and Sound Experience

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Foggy notion

Sound and weather, and the intermingled senses

www.soundeffects.dk
SoundEffects | vol. 8 | no. 1 | 2019 issn 1904-500X

Abstract

This article explores our intermingled experiences of fog as imperatives to consider the fluid connections and crossovers between sound and weather. It takes from cultural and literary references and a first-person writing practice, drawing on anthropology and geography to address a lack of literature in sound studies and acoustic ecology, also considering different sensory experiences of the world through John M. Hull's writing on rain, snow and sound. Fog has an immediate effect on our senses and experiences of the external world, and its distortions affect sound. However, neither the Sound Studies Reader *nor* The Oxford Handbook of Sound Studies *contains indexed entries for fog or weather. Other sound studies texts discussing weather concern themselves with that which produces sound directly. But as anthropologists, geographers and field recordists have shown, weather is a deeply intermingled sensory experience. Fog presses its presence upon us in a visual, aural and tactile sense. We can see the water vapour, feel it on clothes and skin. In fog, sonic information takes priority over visual, and damp mist makes alien a familiar place or a known landscape. 'Night is empty or hollow; fog is full', writes Serres (2008), and in this fullness the senses are profoundly altered. This article explores the effect of fog on our sonic experiences of the world, asking how fog affects what we hear, its effects on our perception of the environment, and how these findings point to further possible interrogations of the interrelations of sound, the senses and weather.*

Introduction

Sound studies literature lacks any focussed interrogation of weather and sound that considers both sensory perceptions of an environment and cultural social contexts. Experience of weather is sensorially intermingled: We feel the rain on our skin, may lift our hands to confirm its presence, hear it hit leaves or concrete, glass or soil. We see changes of light – a darkening of the skies, or the appearance of clouds, and in urban places, the first fat wet droplets of a downpour may be coupled with the smell of damp dust. But what does this mean, and how does it apply to the way we hear sound in fog? This article addresses a sensory experience of fog to suggest a deeper engagement with how weather and sound interact through a sound studies perspective, drawing on anthropology, sensory history and experience. The experience of fog is intermingled and presents an imperative to consider more fluid connections and crossovers between sound and weather. To fully reveal these multi-sensory and contextual resonances, I use a methodology that draws on literature, archival material and first-person writing practice to interrogate the way fog affects our experiences of sound, through mixing, mingling and movement between sources. I found it necessary to bring in a first-person writing practice in order to provide

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sensory material with which to better challenge presumptions about experiences of sound, place and weather.

Within academic practices there are various disciplines in which first-person writing exists – ethnography, anthropology and beyond into nature writing. 'Nature' writing is not, in my conception, anti-human, concerned with idealised observation of the so-called 'natural' world, but requires humans 'not only as observers, but as intrinsic elements' (Peelle quoted by Cowley, 2008). I reject the type of nature writing that Jonathan Raban lamented as involving 'all that moral uplift in the woods and mountains' (Gordon, 2008), and am instead interested in using a first-person narrative voice to approach human-nature-place relations as intermingled, contextual and blurry.

Paul Stoller, in a talk given at the University of Manchester, stated that the burden of his research was 'to produce a narrative that will have legs' (Stoller, 2016). This does not mean inventing a dramatic storyline, but documenting and communicating that which the writer experiences. Caroline Steedman is clear that her writing from archives does not constitute the blending of the roles of the historical novelist and the historian. Instead she discusses Paul Ricoer's work, which characterises narrative as 'a kind of semantic innovation; to the way in which something new is brought into the word by language' (Steedman, 2001, p. 144). In texts by Bruce Smith (1999), Mark M. Smith (2007), Hoffer (2003), Schmidt (2000) and Classen (2012), sensory history is cast as fighting for ground amid more traditional historical modes – the tone of their introductions always acknowledges their dismissal of traditional history and the methodological hurdles, particularly when studying sound.

My methodology has parallels in and is partly borrowed from more general nonfiction and journalistic writing practices, where there is an absence of disciplinary protocols that allows for the researcher and writer to go where it is necessary to answer a research question. This methodology therefore requires the loosening of disciplinary boundaries for its application in order that literature and theory from various disciplines can be applied. I contend that taking a more interdisciplinary approach to sound studies and acoustic ecology improves understanding of the dynamism and plurality of senses and sound and of the soundscapes, as exemplified by this short study of sound and fog.

Absent literature

There is a striking absence of literature within the field of sound studies that engages with the weather. Neither the *Oxford Handbook of Sound Studies* nor the *Sound Studies Reader* contains any indexed entries for weather, meteorology, thunder, rain or fog (Sterne, 2012, pp. 555-566; Pinch & Bijsterveld, 2012 561-593). Augoyard and Torgue mention weather in relation to other effects, but never specific weather

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events (2014). Schafer (1994) and Truax (2001) discuss the weather, but primarily (excepting a few short paragraphs on snow) weather that *produces* sound, for example thunder, rather than weather that *affects* sound like fog. Schafer lists, rather than analyses and as is typical, idolises weather sounds as prized 'natural' parts of the soundscape, rather than understanding the relationship between weather and sound (1994, pp. 19-24).

Douglas Kahn's *Earth Sound Earth Signal* (2013) only discusses dramatic or disastrous weather events such as thunder and earthquakes (which were historically counted as meteorological). Weather features in a signal transmission diagram in Jonathan Sterne's book on the MP3, but is not discussed (Sterne, 2012). Blesser and Salter (2009a, p. 176) note how soundscape music 'emphasised the sounds of life: chirping songbirds, barking dogs, and storming weather' and discuss the effect of weather on sound transmission and reception in terms of the effects of temperature, writing: 'The aural architecture of a particular space is a microclimate of auditory spatial awareness', but fail to address the effects, experiences or connections between sound and weather. In *The Sound Book*, Trevor Cox details a number of cases of strange acoustic phenomena related to acoustically conductive weather, including a tale from a 19th-century physics textbook of a ship's sail bringing to focus the sound of bells and festivities from the shores of Brazil 100 miles away because of the weather conditions (Cox, 2014).[1]

Weather is often incidental, acknowledged as affecting sound transmission, but not addressed directly: David Hendy writes of how calm weather affects echoes in the Ring of Brogdar (Hendy, 2013 p. 74), and Bernie Krause notes that weather affects sound recordings in various ways (2016). Steven Feld's study of the Kaluli demonstrates that their listening to birds can tell them about the weather through atmospheric barometric-like effects on sound transmission (Feld, 2012, p. 84), and in *Soundscape Ecology* Almo Farina details how meteorological conditions can affect the transmission of sound, primarily in the way that wind inhibits the transmission of biophonies – the sounds of animals and other creatures: 'Weather conditions and in general climatic contexts have a great influence on the sonic environment, affecting the sound activity of vocal species' (2014, p. 39). However, all these discussions are brief and are often about acoustic transmission. Typically, the weather is discussed in reference to so-called 'natural' environments. None of the discussions explore weather in any depth, nor do they consider how sensory experience may be influenced by social, cultural or historical contexts.

Texts that explore weather from an anthropological perspective have been relatively late to emerge (studies of the climate's and weather's effect on economics notwithstanding), according to Strauss and Orlove (2003), although anthropologists such as Ingold have explored the issue in depth. A rich seam of historical writing also exists on cultural and social histories of weather and meteorology (Barnett,

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2015; Harris, 2015; Huler, 2007; Moore, 2015; Redniss, 2016. Despite this, there are no sensory histories of the weather.

Practice-based sound work frequently engages with the weather. It features heavily in sound art, field recording practices and soundscape recordings (Yanagisawa, 2018; Samartzis, 2016; Riek, 2013).[2] In direct dialogue with the weather, Andrea Polli's *Atmospherics/Weather Works* sonifies atmospheric data on storms and other meteorological events (Polli, 2004, p. 175), but most notable perhaps, for the absence this article addresses, is Chris Watson's *Weather Report* (2003), which captures recordings of various meteorological environments – the sound of a place in particular types of weather, rather than a recording of the weather type itself. Watson's hypothesis is that weather affects places sonically in subtler ways than just the sounds themselves.

Sound propagation in various weather conditions can be calculated and is accounted for by contemporary acoustic science, but our perceptions are not just physiological, and fog presents an acute case for this in its many metaphorical, allegorical and symbolic deployments.

Definitions of fog

Fog is formed when hot and cold air currents meet and condensation forms, often because of a temperature inversion. Fog is not smog, which is fog that contains particulate matter. Fog is not smoke, the billowing clouds of pollution that result from the burning of fuel. Fog, mist and clouds are variations on the same principle: condensation, and it is their location and density that defines what they are. Fog is also, crucially, not mist, although the technical dividing line between fog and mist is a distinctly human-centric definition: The difference is only in how far you can see (Whitaker et al., 2003; Barry & Chorley, 2010). The Met Office defines fog as being a state when visibility is less than one kilometre, and they have what they call 'fog points', temperature points specific to particular areas that, along with the right wind, moisture and lack of clouds, will cause fog (Met Office, 'What is fog', 'How do you forecast fog').

Like clouds, distinctions between types of fog are largely based on how and where they form in terms of site and altitude.[3] The cooling of the ground produces radiation fog: When land takes in heat during the day and cools during the night, it creates fog. This fog hangs over marshes and lowlands in the early morning, relies on calm winds and usually disperses soon after sunrise, as the sun warms the ground. Advection fog looks the same as radiation fog, but is caused by moist air drifting into a cold environment, or vice versa, causing condensation to form. Advection fog can form in windy conditions and is the fog that rolls in, as in John Carpenter's *The Fog*, and the fog we see at sea. There are also valley fogs, hill fogs and upslope

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fogs. Upslope fog is where a fog of moist air is driven up the slopes of a mountain, although it is usually almost indistinguishable from an orographic stratus (a hilltop cloud). In South America, *camanchaca* are dense fogs that do not produce rain, and the Shoshone in Western United States experience a freezing fog called a *pogonip* (Tung, 2015). There is also such a thing as a fogbow: pale in colour, a half-halo of glowing white mist (Whitaker et al., 2003; Barry & Chorley, 2010; Met Office, n.d.).

Contemporary acoustics hold that in and of themselves fogs and mists have little effect on sound propagation in air. It is the conditions under which fogs form, and the way in which they are often accompanied by other atmospheric conditions such as temperature inversions, which significantly affect how sound travels (Peters et al., 2011, pp. 48-49). While fogs are made of water molecules, these molecules are not close enough to affect sound transmission in a way comparable to the way sound travels in a liquid. However, this hides a complexity: The answer to the question of how fog affects sound transmission is not an easy yes or no, because fog is never just fog; it is coupled with other factors.

Additionally, the material qualities of fog – the way it affects what we can see of the world around us, its presence and its effect on our senses – load it with symbolism. Its simultaneous formlessness and materiality has rendered its meanings moveable, multiple and shifting and affects our experiences of sound. While fog is directly and immediately perceivable through a plurality of sensory encounters, it remains ungraspable, elusive. These qualities have lent fog (and mist) particular connotations.

Cultural connotations and representations

Misty meteorological phenomena are symbolic in various cultures, have been used and interpreted as signs and omens, and have acquired a collection of meanings and cultural baggage. Fogs and mists often denote mystical conditions or meeting points between worlds, are harbingers or thresholds that bridge the spirit world and the real.

On a hot day in March 2016, I visited the Fushimi Inari Shrine in Kyoto. Following a crude hand-painted sign for a waterfall, I came upon a small temple (one of hundreds on this route) sheltered in a lush green hollow between the rocks. The ground was poured concrete, shaded from the hot afternoon sun by trees and foliage. The altar was in front of the waterfall, a narrow stream of cold clear water clattering onto the rocks from above. As I stood quietly in front of the altar, thankful for the cool shadows, the sun broke through a gap in the trees, cutting over the stone altar in front of me, lighting my upturned face, and as it did so, it set my breath into great plumes of mist. The effects of light and temperature were deeply affecting. My fogged breath summoned a visible and tangible threshold that felt like a portal

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into another world or the presence of something spiritual, a feeling signalled by my misted exhalations.

French philosopher and art historian Hubert Damisch writes that banks of cloud in classical art are sites of 'transcendence; rapture; miraculous apparitions' (Damisch, 2002, p. 44), but we find the material presence of these suspended droplets is exploited antiquity and the present. Fog is frequently used as a symbol of divine, spiritual or ghostly interventions, to reference the feeling I felt in Kyoto. In British coastal folklore floating islands appear from the mist before disappearing forever. Jennifer Westwood describes one 16th-century story from Bodmin in Cornwall, where a great fog is seen appearing in the north-east, out of which a castle emerges (Kingshill & Westwood, 2012, pp. 4-5). Aphrodite spirits Paris away to safety in a thick mist in *The Iliad*, and John Carpenter's fog (1980) rolls into a sleepy town on the Californian coast bringing leprosy-riddled zombie pirates.

Fog is a persistent trope in 19th-century gothic fiction: 'Without the fog, we'd lack half of 19th century literature', author Philip Hoare quipped in a journalistic feature about fog (Hoare, 2015). Fog and smog in London are covered in depth by Christine Corton (2015), and in British gothic literature fog appears in Conrad (1973, p. 5), repeatedly in Conan-Doyle's Sherlock Holmes stories and in Jekyll and Hyde (Stevenson, 1866). Dickens opens *Bleak House* with an overbearing fog (Dickens, 1853, p. 1), and Dracula arrives in Whitby in a sea fog described as a 'damp oblivion' (Stoker, 1897). These fogs bring ghosts, monsters and confusion.

Elsewhere, fog represents angst or confusion, a manifestation of inner states. In Ingmar Bergman's *Persona* (1966) fog and the foghorn appear in a scene where Elisabeth appears in Anna's room, a moment where Anna's and the viewer's grasp on reality begins to loosen. In Michelangelo Antonioni's *Red Desert* (1964) Guiliana almost drives into the harbour in a deep fog, following a confusing and anxious orgy scene. Sartre also frequently invokes a fog in *Nausea* (1964) as an allegory for Roquentin's dislocation. Fog imposes a threshold, not just indicating the supernatural, but also between our environment and ourselves. In fog, the air imposes itself upon our skin – while there is no resistance, we are made aware of a barrier, a divide that we can see and feel. The 'fog of war' is a way of talking about all that is uncertain about battle, the way that there is only confusion, no matter how well planned a manoeuvre or strategy might be. It has its roots in Carl von Clausewitz's 1987 text *On War*, a way of explaining the persistent and total confusion that was at the heart of war.

Ultimately, all these instances come together in fog's disorientating effects, whether literal, sensory, emotional or psychological, in ways that can be magical or terrifying. But the relationship between fog and people in literary and dramatic representations is not just allegory or one-directional pathetic fallacy. As Richard Misrach and Rebecca Solnit write: 'The sky isn't just a reflection of mood but a creator of one' (Misrach & Solnit, 2000, p. 9). Fog is not just an external manifestation of

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inner feelings, but also has the capacity to cause those feelings. I will argue that fog does this through depriving us of that which we rely on to make our way through the material world, that is, detail and depth.

Sensing fog

One November morning I cycle along the Thames estuary to my office in a dense fog. My eyes strain to focus, and the air is thick with moisture, forming in droplets on my clothes. The air smells different: It is damp and cool, and sound travels oddly. Just like in the dark, my breath, quickened from the cycle, seems louder. Across the water from here I can usually see the Kent coast and on clear days make out the metal fretwork on the power station gas containers, but today the fog is so dense even the green-hatted groynes are swallowed in grey mist. Visibility is down to about 20 metres, and everything I can usually see is gone: The Crowstone obelisk that marks the end of the City of London's jurisdiction is a hazy shadow out to sea; cars disappear in the mist as the road slopes up to Chalkwell. I can hear the modern fog siren, a high beep at the end of the mile-long pier, although it is easy to miss over the sound of cars and seagulls. Further down the coastal path the horn is masked entirely by the cacophonous honk of the Siberian geese that migrate here for the winter, a surround sound gobbling that puts edges on my hobbled sense of space. The fog is altering, amplifying, demoting and sharpening my sensory experiences in various ways.

Michel Serres describes being on a boat in fog: 'On an open bridge, swamped by a pea-souper, you retain the tactile certainty of being situated between the captain and the watch, phantom neighbours like phantom limbs, but you lose the sense of their size, the shape of their profile and your feet, like their bodies, vanish into the unfathomable distance' (Serres, 2008, p. 69).[4] Fog and weather affect our sensory experience of the world on land and at sea, but these effects are not purely physiological. Serres describes fog as provoking anguish that 'not only comes from darkness', but which 'trails and crawls, in layers, over our arms, shoulders, thighs, stomach and back' (Serres, 2008, p. 68). Fog induces a feeling of detachment through a tactile, corporeal imposition of damp air on the skin in a way that is intensely multi-sensory.

On the estuary I feel the imposition of the fog on my skin; it obfuscates my visible surroundings and its acoustic distortions sever and reorganise my sensory connections to the outside world. In the deepest part of the fog I feel alone, separate from those around me. Steven Connor writes: 'Fog is the undoing of place and spatial differentiation. The fog creeps in and out of every crevice and turns the earthly into the airborne' (Connor, 2010, p. 180). But fog does not bring darkness, as Serres writes: '[S]hadow retains the features of the world, whereas mist transforms them

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continually by homeomorphism, causing distances, measurements and identities to be lost' (Serres, 2008, p. 69). Serres describes how fog affects perception of a familiar place or a known landscape, but it does not inhibit ability to see in the same way darkness does.

Bodies in fog

Geographer Craig Martin writes that fog 'forces a phenomenological engagement with embodied immersion: one's body enveloped and entwined with space' (Martin, 2011, p. 454). Fog has a dual effect, he says: It immerses us in the heaviness and materiality of the air, the water droplets suspended in the air projecting a stillness and through this, the sense that time is suspended, the air is given a physical presence, 'entangling us with space in a determinedly material sense', and that 'whilst fog challenges distanced perception, it intensifies the immersive qualities of the air' (Martin, 2011, p. 455). Sonja Boon, Butler and Jefferies write similarly that in fog we sometimes 'lose our familiar senses of time and place, but its thick and heavy presence shows us new ways of engaging with the world' (Boon, Butler, & Jefferies, 2018, p. 66). Ingold watches the weather change on the coast in Aberdeen and interrogates how his experience and feelings about the landscape change with it. He asks: 'When I stood by the sea on that March day, was I not as much bathed in light as enveloped in sound?' (Ingold, 2005, p. 98).

Martin points to an important distinction in experiences of fog between a desire for immersion or the struggle to locate oneself (Martin, 2011, p. 455). Here I will distinguish between two experiences of fog: one like mine on the estuary where I am able to immerse myself, the other might be a mariner in fog – where the fog poses a problem, through the need to locate oneself, to navigate away from danger. The way we 'immerse' ourselves depends on being able to be safely, momentarily, disorientated. The disorientated mariner in fog is in danger. While we may plant our feet, we may not, in the densest fog, be able to see them. In place of a visual reference, sound becomes a navigator.

Sound in fog

Martin, in the article discussed above, locates the bodies around him by the noise of their feet on the ground. The fog offers no solidity, no surfaces to a sighted person. Martin points to sound becoming that which literally grounds him and locates those around him in the fog through the crunch of their shoes on the Dungeness shingle, and when the foghorn sounds he writes that it 'served to slice through and penetrate the thickness of fog in an attempt to restore clarity' (Martin, 2011, p. 465).

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A BBC radio show from 2018 discussed how snow is also known as 'blind man's fog' due to the way it deadens the acoustic echoes and reflections through which the visually impaired often make their way through the world, in the same way that fog removes the visual information used by those without visual impairment (BBC, 2018). The broadcasters, all of whom are blind, discuss how weather and sound affect their sense of the world, how different weather gives varying amounts of information.[5] John M. Hull's diary of blindness emphasises this, in a diary entry that records the effect weather had on his perception of the world, on how rainfall is like what a sighted person experiences upon opening the curtains: 'If only there could be something equivalent to rain falling inside', he writes. 'Then the whole of a room would take on shape and dimension' (Hull, 2017, pp. 18-19). In rain Hull can navigate as if the world is visible. Snow does the opposite, and the acoustic information is lost.

Ingold points to an asymmetry in our perception: 'If sound is what we hear', he asks, 'then why do we not see light? Why do we so readily assume on the one hand that we see things rather than light, but on the other that we hear sound rather than things?' (Ingold, 2005, p. 98). While Frances Dyson may be correct in writing that 'there is no singular sound, no such thing as "a" sound' (Dyson, 2014, p. 24), I would argue that we do hear *things*. As I write I hear the radio, a plane outside and my fingers on my keyboard. I also see light as it changes over the estuary I can see from my office window. In describing the sounds depicted in a postcard from Japan, Don Ihde writes that 'I "hear" the rain and "listen" to the peasants running and to the rustling of the mats' (Ihde, 2012, p. 111) identifying things heard, if in a sonic imaginary. I remark on a change in the light over the Thames, not the water it hits. This indicates that the way light or sound is expressed as being seen or heard, or given objects, has more to do with the nuances of (the English) language than the nature of sensory experience. When theorising about sound and weather, the way we describe it depends on our various sensory abilities or impairments and the language we speak.

Sensory horizons

In the fog, my visual horizon is obscured, and the place I am situated is defined instead by my acoustic horizon. Edward Casey writes that the horizon 'is the single most powerful orienting factor in a landscape', describing it as the 'epicentre' of any scene (Casey, 2005, p. 163). On the estuary the cacophonous honk of the Siberian geese that migrate here for the winter replaces my visual horizon with a nearer acoustic one, honking out the mudflats that I can no longer see.

Blesser and Salter have referred to this as an 'acoustic horizon', and describe it as the analogue of visual horizon: 'An acoustic horizon, centred at the listener, represents the area over which sonic events can be heard', they write. 'It is the analog to a visual horizon' (2009, p. 4).[6] The assertion is a footnote in a talk, but prompts a useful

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discussion. On the estuary, the geese constitute my acoustic horizon, the limits of what I can hear being the analogue of what I can see. But if it were not for the fog I would be able to see further than I could hear – does the analogue therefore still stand? Variables such as amplitude and volume play a part in what I can hear, and brightness and visibility play a part in how far I can see. Both limits are conditional on landscapes and obstructions, along with physiological variants between individuals concerning impairments and age and the state of the atmosphere, among other things. In which case, is it a useful analogue?

But this acoustic horizon does not have the same qualities as the visual horizon. It is far more dynamic. Hull discusses the sensory experience of deaf and blind people in encountering others: 'For the deaf person, people have an abiding presence. They are there, all the time, every day. For the blind, people are not there unless they speak' (Hull, 2017, p. 78). If the acoustic horizon only exists when something makes a sound, and a horizon is that which orients, then the acoustic horizon is one which moves with every sound: 'Sound and space – however one defines these terms – are phenomenologically and ontologically intertwined. Sounds, after all, are always in motion' (Eisenberg, 2015, p. 193).

To talk of analogues then is not particularly useful beyond a gesture towards that which is at the limits of our sight or hearing in any given moment. Objective limits for sight are much more fixed and static than they are for sound. Whose limit is being discussed also matters: the deaf, the elderly, the young all have different actual and potential acoustic horizons. The acoustic horizon is on the move, in the way that Hull says people are not there unless they speak: The horizon is the furthest away thing making a sound. This is where the asymmetry is located, in the expansion and contraction of the acoustic horizon in comparison to the fixedness of the visual horizon. Considering who is in fog affects how the sound might affect that individual – sensory experience in fog is not just about vision being replaced by sound.

Sensory hierarchies

A visual hegemony is insufficient to explain the reorienting effects of sound in fog, but how can we view the interaction of the senses? In recent developments in theories of sensory functioning the multisensory has been criticised for implying separate senses operating concurrently but in silos (Fulkerson, 2014, p. 364). Neuroscience deploys references to different types of intermingled sensory experience – multi-modal and cross-modal. The multi-modal refers to one unified experience that happens as a result of the coordinated operations of more than one sense. The cross-modal describes cases where the operations of one sensory modality influence or make a difference in the operations of another (Fulkerson, 2014, p. 366). In

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lieu of a quantitative study on fog and the senses, I will not attempt to argue for which one fog prompts, but in relation to sound Peter Bailey writes that 'the other senses manifestly overlap in the generation and reception of sound, colluding or colliding, reinforcing or confusing' (Bailey, 1996, p. 54).

Through taking this into consideration sensory experience can be discussed without invoking a hierarchy of discrete elements, but one where there can be dominance without elimination, and where social and cultural context counts alongside physiology: 'Perception is informed not only by the personal meaning a particular sensation has for us, but also by the social values it carries' (Classen et al., 2014, p. 1). This is crucial for the way we are able to discuss the way weather and the senses interact. Ingold writes that 'perceiving the weather is a mode of being' in that it is an intermingled experience of light, sound and feeling (Ingold, 2005, pp. 102). Weather and the senses present a joint imperative to reframe a view of the world through fluxes and mediums, in that sound and light are 'infusions of the medium in which we find our being and through which we move' (Ingold, 2011, pp. 138).

Leigh Eric Schmidt sets up a model which stresses 'multisensory complexity', keeping in mind (as Schmidt says) the intricate and uneven modern sensorium, 'its perceptual disciplines and experiential modes more diffuse and heterogeneous than the discourses of Western visuality and ocular centrism allow' (Schmidt, 2000, p. 22), in a framing that can contain differing abilities when combined with an understanding of cross-modalities and multi-modalities. Sound in fog is therefore about the way fog as a multi-sensory experience affects the way we hear or listen *in conjunction with and affected by* the other senses, in a time and in a place. Without this nuance we collapse into sensory silos, isolating sound, as Ingold warned against in 'Against Soundscape' (2007).

Fog's effect on the way we hear the environment is not simply about how it (and its attendant atmospheric conditions) affects acoustic transmission in the scientific sense, nor can it be analysed through establishing a sensory hierarchy by which its perceptual effects are aligned and gauged as demoting and reorienting a hegemony. Hearing a sound in fog combines with visual, tactile and, to a lesser extent, olfactory and even gustatory (in terms of perceivable moisture in the air) sensations. In the way that fog removes visual information about distance and depth, it also places hearing as a primary sense for navigation and orientation, as Martin describes locating others via the sound of shoes on shingle and the foghorn.

Historical senses

This article has so far looked at sensory experiences in fog, and what the relations of sound and vision lend to our understanding of multisensory encounters with the environment. However, these experiences of fog also come loaded with the cultural

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and social connections discussed at the beginning of the article. My experience of mist in Kyoto does not stand alone, but is filtered through my knowledge of Western horror films, literature and my personal spirituality. Smith writes: 'We must stress the primacy of context if we are to avoid becoming hostage to the rhetorical sensory hierarchy sponsored by a given class of a particular place and time' (Smith, 2007, p. 15).

Senses do not operate in a temporal and historical vacuum, as is exemplified in work on sensory histories of the 'proximate' senses (smell, touch and taste) such as Mary Douglas's foundational text on the changing sensory attitudes to dirt, *Purity and Danger* (2003), Emily Cockayne's *Hubbub* (2007), Constance Classen's cultural history of touch (2012) and Alain Corbin's history of smell (1986). But considering social and cultural associations with weather is a complex undertaking that will not be fully addressed here. Robert Jutte writes that we have to break with the aprioristic assumption of the 'naturalness' of sense perception (Jutte, 2005, p. 9), and Classen warns against using a particular set of adjectives to characterise the sensory world of the 19th century (or any one time period) due to its heterogeneity and the breadth of sensory experience (2014, p. 2), and warns sensory historians not to neglect the plurality of sensory experiences in various societies (Howes & Classen, 2013 p. 12), pointing to possibilities for the experience of horror and immersion found earlier in this article.

More generally, conceptions of the air in Western science have developed in particular ways. In Jayne Elizabeth Lewis's *Air's Appearance* she talks of English pneumatic chemists such as Robert Boyle as grappling with the invisibility of the air, its ubiquity and its 'charismatic encryption' in folk and faith (Lewis, 2012, p. 3). The historical aspect of the sensory also comes with an additional consideration, according to Smith: 'Frequently, the descriptions we have of the use of the senses were established by – and left by – elites, which likely reflect their preferred understanding of reality, but not reality in its full, multivalent, contingent texture' (Smith, 2007, p. 15). Classen et al. open their account of the age of Empire with two scenes, in a royal bedroom and a slum lodging in London, to display the diversity of sensations that depended on class and wealth (Classen et al., 2014, pp. 1-2). As such, when we consider fog, we must consider associations based on social, cultural and historical contexts on a case-by-case basis.

Conclusion

In this cumulative study of fog through the literary, the sensory, the historical and anthropological and the geographical, the connections between fog and sound indicate that there is more work to be done in interrogating the relationships between sound and weather. This article has challenged discrete operations of the senses

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and found a gap in sound studies literature that considers cultural contexts alongside weather. The relationship between sound and fog depends on these contexts, of culture, place and time, and our experience of it depends on who we are and, in the case of this article, on whether we can afford to be lost.

In this article I have argued that both sensory and social and cultural representations should be explored when considering the way sound is perceived and understood in fog. This article has looked at experiences of fog and how senses, culture and the weather are connected, with specific reference to sound. Craig Martin writes that in fog we become entwined with space and simultaneously want to indulge in being immersed in the heaviness of the air. It is with sound that Martin reorients himself in the fog at Dungeness, with the crunch of shingle underfoot and the foghorn sounding. John M. Hull, in his diary on blindness, talks of sound as that which can illuminate a space. Sound does not just reorient through replacing a visual horizon with a sonic one, but is part of a more complex sensory interaction. Attending to sound and weather therefore requires an attendance to multisensory and mingled experience of weather, and how historical contexts might muddle in and affect these experiences. What I have attempted to show is that while there remains a dearth of literature engaged in weather and sound, the future engagement requires joined-up thinking in order to explore how we might describe these relationships through a methodology that is historical, experiential and sensory.

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Notes

1 Elsewhere, the related 'atmospheres' have become an area for study in architecture around urban ambiances, in writing by Gernot Böhme (2016), Jean-Paul Thibaud (2015) and others, but these too focus on the atmospheres and ambiances of urban environments.

2 In music the subject of weather is too vast to address here, but it is present in music from the traditional to the avant-garde, the underground and the pop mainstream, from The Weather Girls' classic pop hit to Derek Bailey playing with butoh dancer Min Tanaka in a wooden house in a rainstorm (1996).

3 Luke Howard's cloud classifications, still in use today, rely on the altitude of cloud formations for identification.

4 Serres features throughout this article, which is perhaps apt considering Steven Connor has said that 'reading Michel Serres is like reading an animated weather map' (Connor, 2008).

5 E.g., for a blind person, putting a hood up restricts the sonic information about the world the person receives. The result is that, for the visually impaired, going out in the rain means getting very wet.

6 This Blesser and Salter talk is the only literature that has thus far been sourced which claims such an equivalence relation, and the claim is a footnote.

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