Field recording and the sounding of spaces

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Field recording and the sounding of spaces

Abstract

This article concerns the spatial functions of field recordings, defined as audio recordings of the myriad soundings of the world. I suggest that field recordings are doing geographical work outside the usual academic repertoire of texts, numbers, maps and images, and develop this idea through four arguments. First, I amplify the diversity of ways in which field recordings are used, distinguishing between four styles with different spatialities. Second, I argue that field recordings are both representational and performative, their playback doubling or hybridising space in the present through sound performed by an ensemble of audio machines. Third, following Grosz, I suggest that this performative reiteration of worldly vibration is affectively potent. Field recordings thus demonstrate that representation and affect need not be opposed. Finally I argue that field recordings can be understood as contributing to the production of space. Drawing on Lefebvre, I make a political-economic analysis of field recording, drawing attention to underlying processes of labour. The article includes audio clips that demonstrate some of these arguments.

Keywords

sound, audio, vibration, art, performance, affect, environment, media

Introduction

This article is about field recording, defined as the production, circulation and playback of audio recordings of the myriad soundings of the world: the sounds of animals, birds, cities, machines, forests, rivers, glaciers, public spaces, electricity, social institutions, architecture, weather – anything and everything that vibrates. Field recordings are made by sound artists and sound designers, researchers, musicians and hobbyists. “Field recordings are composed with, performed in concert venues, installed in galleries, released as CDs, worked into an audio-visual matrix with film and other media and made available in sound maps and other online forms of distribution” (Lane and Carlyle, 2013, page 11). Field recordings also play an integral role in natural history documentaries, in film and television production as wild tracks and room tone recordings [1], and in soundtracks for meditation and relaxation. Field recording can therefore be heard as a form of non-academic geography. Its place in mainstream media is too marginal to count as popular geography, but like travel writing, certain kinds of journalism and documentary film making, landscape painting and photography, field recording is a set of cultural practices through which a wide variety of people are engaging with spaces, places and environments.

Field recordings are commonly understood as ethnographic representations of places (Drever, 2002; Rennie, 2014). It is often claimed that they generate a deeper awareness and knowledge of the world, and sometimes that they offer a means by which to renew human connections with more-than-human life that have been eroded by modernism. This article explores some alternative lines of thinking, making four inter-related arguments about the geographies of field recording.

First, I suggest that field recordings are used in such diverse ways that it makes sense to distinguish between different styles of field recording. To this end, I sketch out a rough typology of four styles with differing spatial effects. These styles overlap considerably, and their differences arise in the ways field recordings are used as much as in the recordings themselves. Subsequent arguments apply more to some of these styles than to others.

Second, I argue that in addition to their representational functions, field recordings are also performative, something happening here and now as well as a document of another time and place. The playback of field recordings involves “the performance of representation as an activity” (Bennett, 2013, page 505). Such performances reconfigure present space, with acoustic traces from the recorded space-time folding into the playback space-time, effecting a doubling or thickening of space. Field recordings can

generate spatial juxtapositions, montage and playful detournement, providing a means of what Rendell (2006) calls critical spatial practice. Amplifying the performativity of field recordings also draws out the range of natural, material and machinic actants involved.

Third, extending these arguments about performativity, I attend to the affective qualities of field recordings, drawing on Grosz's (2008) understanding of art as intensifying sensation by working with the vibrations of the universe. Field recordings represent the vibrations of the world but they also performatively reiterate these vibrations; they *are* vibrations, oscillations of microphone diaphragms, electricity, loudspeakers, air and bodies. These vibrations literally move beings. In sentient beings, these movements may be felt as sensations of joy, sadness or a sense of the uncanny. Equally field recordings may produce more mundane affects such as boredom, irritation or indifference. Against any notion of representation and affect as opposed or mutually exclusive, I suggest that some of the most vibrant, evocative field recordings are those that make full use of both of these registers simultaneously. In relation to non-representational theory, field recordings show that these qualities can be mutually reinforcing.

Fourth, I suggest that field recordings can be understood as contributing to the production of space. Field recordings generate three-dimensional vibrational spaces – dynamic, fluid and temporary

but spaces nonetheless. Drawing on Lefebvre, I discuss how field recordings effect spatial superimposition, interpenetrating more durable spaces. A Lefebvrean account also points towards a political-economic analysis of field recordings, revealing their underlying processes of labour, and their participation in wider economies.

Underlying all of these arguments is a broader interest in recognising the kinds of geographical work done by media practices outside the usual academic repertoire of written texts, numbers, maps and images. It is common for geographers to claim that, etymologically, the discipline is at root a form of earth-writing, but writing is too narrow a framework to account for the diversity of geographical practices. Many other kinds of media are involved in doing geography, including audio. More fundamentally, metaphors of writing and inscription are ill-suited for understanding the functioning of contemporary digital media, including digital text. Digital data storage uses electrical currents to charge microscopic particles in magnetic materials or semiconductors. These processes are quite different to the etching of lines on surfaces. Moreover, data storage is always coupled to systems of transmission and transduction: data buses and interfaces, cables and optical fibres, power supplies and wireless networks, loudspeakers and screens. The technologies that provide the best general model for understanding these systems are not the inscriptive mechanisms of

writing, printing or drawing, but those such as radio and telephony that propagate and transmit vibration through space.

In thinking about the geographies of field recording, the article extends previous work on the spatial functions of audio media and sonic artistic practices (Butler, 2006; Cameron and Rogalsky, 2006; DeSilvey, 2010; Gallagher, 2014; Gallagher and Prior, 2014; Revill, 2013; Smith, 2000). My arguments also relate to wider discussions in geography about art, non-representational theory, performance, affect and the more-than-human. Research in sound studies, sonic geography and the anthropology of sound has expanded rapidly in recent years, including much scholarship on sound and space (e.g. Augoyard and Torgue, 2006; Blesser and Salter, 2007; Bull, 2000; Saladin, 2014). Whilst this literature is clearly of relevance to the paper, it is too rich and varied to summarise here. To maintain focus I have opted to concentrate only those works that relate to field recording directly, or to the arguments I want to make about it.

The article begins by defining field recordings. This first section is necessarily descriptive since many readers will be unfamiliar with the subject matter. Conceptual material then follows, expanding on the arguments outlined above. Audio examples of field recordings are presented in an effort to performatively enact some of the points made, enabling readers to experience of how field recordings function.

What is field recording?

Field recording is a diverse practice, best understood as a set of techniques rather than an artform as such given the variety of ways in which it is used. Like location sound and electronic news gathering in the mass media, it commonly takes place outside of acoustically controlled spaces such as studios and concert halls. Field recording attends to worldly sounds, the vibrations of the multiplicity of beings, materials and forces that come together to form environments, in contrast with the narrower preoccupation in conventional audio production with music, human speech and defined sound effects. Field recording as I understand it here also includes practices of listening, reviewing and editing recordings, composition and mixing, playback and audition. These processes are arguably more geographically salient than the process of recording itself, since a single recording, if presented in different ways, can produce different spaces.

The public circulation of field recordings dates back at least as far as the 1930s. Early examples include Walter Ruttman's *Weekend*, a radio piece composed from recordings of everyday life in Berlin, and Ludwig Koch's 'sound-books', using gramophone records of birdsong to educate listeners in species identification (Lorimer, 2007). During the 1950s, 60s and 70s, field recordings found their way onto vinyl for sale to enthusiasts, hobbyists and tourists. A quick scroll through

the cheerfully retro-styled online collector's catalogue of 'Jez Randell's All Vinyl Experience' (Randell, 2013) turns up 12 inch records of aircraft sounds (both military and civilian), motorbike sounds from the Isle of Man's TT race, LPs with titles such as 'Australian Bush Sounds', 'Echoes of Merseyside', 'Church Bells of Kent' (description: 'good, if not a bit repetitive') and souvenir records of sounds from tourist hotspots such as the Grand Canyon and the Tower of London. Also listed are nine seven-inch EPs of British bird sounds released in the 1960s by oil company Shell in what must surely be one of the earliest instances of greenwash. This example hints at the politics implicit in how field recordings are framed, funded and circulated, an argument to which I will return in due course.

Steam train sounds also appear to have been something of an obsession for mid 20th Century hobbyist recordists, whose nostalgia for a dead mode of transport is echoed in the current feel for vinyl as an aging medium. The Argo Transacord label released an exhaustive collection from 1955 onwards, whose titles map out a geography of rail both bluntly prosaic ('Trains from Tyne Dock', 'Sounds of Shunting') and more evocative ('Dukedogs and the City', 'Panniers and Prairies'); from the acutely local ('On a Banker from Beattock', 'The 11.15 for Torpantau') to the more worldly international ('Orient Express', 'Venice-Mestre', 'Narrow Gauge on

the Costa Brava’). It is a back catalogue with impressive place specificity.

In music and sound art, musique concrete and Cage’s attention to ambient sound had formative influences on the development of field recording as a creative practice. An early example is Luc Ferrari’s *Presque Rien No.1*, a tape composition from 1970 edited from recordings of daybreak in a Dalmatian fishing village. The acoustic ecology movement and the World Soundscape Project came into being around the same time, establishing field recording as a method for musical compositions that could also function ethnographically (Rennie, 2014). Schafer’s notion of the world as a musical symphony (Schafer, 1994) found expression in a 1973 LP, *The Vancouver Soundscape*, and in subsequent work by soundscape composers such as Barry Truax and Hildegaard Westerkamp.

In the age of networked digital media, field recordings are on the increase once again. This expansion might be attributed to the availability of cheap portable recorders, the expanding possibilities of online sharing, the gradual assimilation of sound art and experimental music into mainstream culture, the itinerant mobility that characterises modern life and the rising prominence of environmental concerns. Field recordists with international profiles can be found in Australia, Canada, Europe, Japan, Scandinavia and the USA. Public presentations of field recordings are increasingly

common, from temporary works of fine art such as *White Sound* by Bill Fontana in which sounds from Chesil Beach in Dorset were fed live to central London, to more instrumental forms of sound design such as the ‘audio benches’ in Berlin’s Nauener Platz, which attempt to mask traffic noise with recordings of birdsong and ocean waves, and a Scottish hospital radio station that is using soundscape recordings to help patients sleep. There have also been a few encounters between field recordings and academic geography. For example, in 2008, to celebrate the 50th anniversary of the Institute of Australian Geographers, the Room40 label released *Audible Geography*, a CD featuring works by several notable field recordists, and at the 2010 RGS-IBG Annual Conference in London, soundscape composer John Drever performed *-scape [Goodwins]*, a multimedia work based on field recordings of a sand bank off the south coast of England.

Some field recordings reach a mass audience. The work of sound recordist Chris Watson, for example, is regularly broadcast on television and radio, including in soundtracks for David Attenborough’s natural history programmes. *Inside the Circle of Fire*, a recent installation by Watson in Sheffield’s Millennium Gallery using field recordings of the city, attracted tens of thousands of visitors. An increasing number of audio walks and mobile sound works are bringing field recordings into public spaces, both urban and rural (Butler, 2006; Gallagher, 2014; Myers, 2010; Pinder, 2001;

Saunders and Moles, 2013). Audio maps such as *Radio Aporee*, *Favourite Sounds* and the *London Sound Survey* are making field recordings available online. In radio, Resonance FM's *framework* show is dedicated to field recordings, and *Radio Birdsong*, a temporary 'filler' signal broadcast on digital radio and consisting of a looped dawn chorus recording, gained regular listeners who complained when it was shut down. Field recordings are geographically uneven, with a bias towards the minority world and major cities, but this is somewhat counterbalanced by the interest of field recordists in wildlife sounds and the sounds of other cultures and spaces. Examples include anthropologist Steve Feld's recordings of the Bosavi rainforest in Papua New Guinea and Peter Cusack's recordings of oil fields in Azerbaijan. For the historically inclined, archival collections of field recordings can be found in The British Library, the Pitt Rivers Museum and Cornell University's Macauley Library. All of these examples ought to counter any sense that field recording is a novel or unexplored form of culture.

Field recording has also staked a place in the methodologies of social and cultural research, offering ways both to empirically document the relations between sound and space, and to actively intervene in them. Those looking to "push the limitations of current conventions of representation and knowledge-making", to take "knowledge beyond the prescribed environments and to bring it into dialogue with new disciplines, spaces and audiences" (Last, 2012,

page 708), have found considerable potential in field recording as a research method. For example, in 2010, *Experimenting with Geography*, a creative methods event at the University of Edinburgh, involved sessions on field recording from sound artists Matt Rogalsky and Louise K. Wilson. Yet as I have argued elsewhere [removed for anonymity], phonography is methodologically underdeveloped in comparison with photographic and videographic techniques (e.g. Garrett, 2011; Pink, 2007; Rose, 2000). If researchers working with audio are to develop critical, reflexive and insightful understandings of what they are doing, more conceptual work on these practices will be needed.

Against this background, the remainder of the article thinks through the geographies of field recording, its representational, performative, affective and spatially productive functions. Two principles guide my account. First, I emphasise the materiality of field recording as a technological practice involving vibrating matter, electricity and machines. “Technology is not only a passive surface for the inscription of meanings and signification, but a material assemblage that partakes in machinic ecologies.” (Goddard and Parikka, 2011, page 1) These machinic ecologies operate differently to human perception and language, and thus cannot be wholly understood via sociological, discursive and phenomenological perspectives (Ernst, 2013). Second, there is a need for critique. Discussions of field recording are sometimes implicitly or explicitly

celebratory, portraying them as inherently beneficent, offering people a way to re-connect to their environment and enhance their sensory awareness. Field recordings may produce these kinds of effects and affects, but equally they may be experienced as boring, vacuous, alienating or disconnecting. Field recordings also enact power, sometimes in ways that could be critiqued as orientalist, elitist, romanticizing, voyeuristic, objectifying or otherwise problematic. Important here is a recognition of the political economy of field recording within the wider global economy of art, digital media and technology, a theme explored further in the final section of the paper.

Styles of field recording

Field recordings are made and used for a wide variety of purposes. As a rough-and-ready means of orientation, I suggest a four-fold typology that enlarges upon previous distinctions between soundscape composition and acousmatic music (Drever, 2002). My aim is not to provide an exhaustive system of categorization, nor to ‘pigeonhole’ works into particular genres, but rather to recognise the different ways in which field recordings are used, and the resulting diversity of political effects. Field recordings could easily be divided up differently, and in practice there is considerable crossover between these styles. It should also be emphasised that these styles are as much about the presentation of field recordings

as the act of recording itself. The same recording can be presented in different styles, with differing effects.

1. The nature style, in which audio recordings are used to ‘capture’ the vibrations of animals, plants, habitats and ecosystems. Such recordings are used in natural history programmes for television and radio, for scientific research in fields such as bioacoustics and ecology, and by wildlife enthusiasts. In this style, the audible presence of humans is usually erased as far as possible, avoiding human voices, the noise of cities, transport systems and so on. Some nature recordists frame their work as a means of highlighting, protecting and conserving a nature that is ‘under threat’ from humans. This is somewhat paradoxical, however, since the travel to remote locations and precision-engineered gear involved in nature recording depend on the exploitation of natural resources, and the very systems of modern technology and mobility that tend to be disavowed by the recordings. Nature recording produces spaces which have been “meticulously constructed by hundreds of recordists over many decades, who have all sought out tiny windows in time and space where man cannot be heard” (Michael, 2011, page 207). The result is often beautiful or otherworldly spaces in which ‘nature’ is aestheticised, and sometimes romanticised as a pristine, exotic ‘other’. This style of field recording thus enacts a particular kind of political ecology and political economy.

[Audio clip 1 – nature] Caption: A dawn chorus from Holyrood Park, Edinburgh. An example of nature field recording.

Any critique of nature recording must be balanced with an appreciation of the painstaking craft involved, and the often compelling results. Serious practitioners commit to an unglamorous routine of late nights, early mornings, travel through difficult terrain, careful listening and patient hours spent waiting for action to happen. As a result, nature recordists often have a deep sonic awareness, coupled with an encyclopaedic knowledge of animals and their sounds. Some nature recordings create a space of excessive naturalness, implausibly depopulated. But equally nature field recordings can produce beautiful spaces, with soothing and calming affects; fantastical spaces that provoke the imagination; and enchanting, haunting, atmospheric or otherworldly spaces, giving listeners a momentary encounter with the radical otherness of nature. For example, recordings of aquatic plants and animals, made with hydrophones [2], can reveal a magical world of vibrating life beyond ordinary human perception.

Michael (2011) argues that some forms of nature recording construct what Morton (2007) has termed a dark ecology, forcing an awareness of the abject aspects of nature, sounds that we would rather not hear. He cites Chris Watson’s close-up recording of

vultures feeding on a zebra carcass in the Kenyan desert as an example of field recording creating a gruesome natural space, red in tooth and claw. Such works are “shorn of the larger aspiration of the reconciliation of human and natural worlds through a regenerative act of listening. Instead Watson seems entirely comfortable with his work’s relationship to forms of quite jarring electronic music or electroacoustic composition.” (Montgomery, 2009, page 150)

2. The soundscape style, as developed in acoustic ecology and soundscape composition, where the aim is to document and represent the soundings of a particular environment. Soundscape works maintain a clear referential relationship between recordings and the contexts in which they were made (Drever, 2002). They recognizably re-present the sounds of somewhere, conveying a sense of how a place sounds, often with contextual details provided via photographs, textual descriptions and track names that index the recorded location. Listeners are invited to listen ‘through’ the technology to hear the recorded place.

Unlike the nature style, soundscape recordings allow for more mingling of human and more-than-human sounds, accepting whatever sounds happen to be occurring in a given space and time. Nevertheless, like the nature style, soundscape recordings usually exclude the audible presence of the recordist. Urban soundscape recordist Ian Rawes, for example, says that “I reject recordings if my

own breathing or footsteps are in them and can’t be got rid of. Otherwise it’s like taking a photo when your finger’s poking out over part of the lens.” (Lane and Carlyle, 2013, page 143) Some soundscape artists make their embodied presence more overt, however. Peter Cusack is “starting to put my breathing or footsteps into the recordings deliberately because I think they are relevant as part of the atmosphere” (ibid., page 196).

[Audio clip 2 - soundscape] Caption: A soundscape recording made in Kings Cross Station, London.

Soundscape recordings are generally made with stereo microphone set ups, using two related channels of information to produce spatial effects, rendering movement and distance. One popular technique is binaural recording, in which mics are attached near the recordist’s ears or to the ears of a dummy head [5]. Played back over headphones, the result is an extremely lifelike mimesis of the recorded field, a three-dimensional illusion of presence. But as LaBelle points out, there is also a profound alterity at work in soundscape recordings:

> “place paradoxically comes to life by being somewhat alien, other, and separate, removed and dislocated, rather than being thoroughly mimetically real…as a listener I hear just as much displacement as placement, just as much

> placelessness as place, for the extraction of sound from its environment partially wields its power by being boundless, uprooted and distinct.” (LaBelle, 2006, page 211)

This displacement can also be heard as a merging, in which recordings fold sounds of the recorded space into the space of playback, which always has its own sonic character, its own background noises, reverberances and resonances. A doubling effect comes into play, thickening, melding, juxtaposing or fusing acoustic space-times; a form of spatial bricolage or hybridization. Nature recordings can also be heard as performing this kind of doubling, merging the sounds of the recorded ecosystem with those of the playback space. Following Lefebvre, such processes can be understood as spatial superimposition, an argument to which I return in the final section of the article.

3. The acousmatic style. Acousmatic sounds, as defined by musique concrete pioneer Pierre Schaeffer (2004), are those that one hears without seeing their sources. The word derives from the acousmatics, students of Pythagoras who listened to his teachings from behind a curtain, so as to focus their attention on his voice. Phonographic technologies are inherently acousmatic, ripping sounds out of context and displacing them from their source, scrambling the meanings and associations they had in situ (Koutsomichalis, 2013). Acousmatic field recordings make use of this

decontextualisation to invite ‘reduced listening’, attending to the aesthetics of recorded sounds rather than trying to discern their sources (Chion, 1994). In its more extreme variants, and in contrast to soundscape recordings, the acousmatic style deliberately works to accentuate abstraction, presenting sounds “devoid of semiotic attachments to identifiable referents” (Kim-Cohen, 2009, page 125). “Here the goal is to ‘purify’ the sound, to strip it of its origin and memories (though it may well be that the same erased origin remains to haunt it)” (Cutler, 2004, page 146). The acousmatic style is as much a mode of presentation as a mode of recording, since nature and soundscape recordings easily become acousmatic if presented without contextualisation.

[Audio clip 3 - acousmatic] Caption: An acousmatic field recording – an abstract texture, in which the sound source is unclear.

The acousmatic style of field recording creates abstract spaces, which in Lefebvrian terms may be conceived (by an artist) and perceived (by an audience), but not really lived. Such spaces may be highly suggestive and atmospheric, with listeners unsure of what exactly they are hearing, provoking their imaginations to fill in the gaps, wandering in “reverie, myth, and fantasies of cosmic journeys” (LaBelle, 2006, page 27). Francisco Lopez, one of the more vocal advocates of the acousmatic style, claims that his works use field recordings to create hyper-realities rather than re-

presenting pre-existing realities (Lopez, 2004). For some the resulting spaces are inspiring, freeing, intensely imaginative, but for others these spaces can feel incomprehensible, over-exaggerated, culturally elitist or alienating. Kim-Cohen (2009) is critical of how, in attempting to decontextualise sound, acousmatic music sometimes ignores its unavoidable recontextualisation, and the discursive frameworks within which sound is always heard. For example, Lopez's likes to perform in the centre of the audience, with listeners positioned in concentric circles with their backs towards him and invited to wear blindfolds to produce a truly acousmatic experience. Writing about a performance of this kind in New York, Kim-Cohen argues that, in context, a panoptic space of power and subjection was created:

> "just two miles from the site of the World Trade Center, in the midst of the U.S. War on Terror, in the wake of revelations of abuses at Abu Ghraib and at Guantanamo Bay – the whole scenario takes on sinister overtones. This is not to suggest that Lopez intends to lord menacingly over his audience, but that he seems blissfully (if problematically) naïve regarding the connotations of his extended text." (Kim-Cohen, 2009, page 124)

4. Sound art styles. This is a fuzzy notion at best as sound artists are highly eclectic, and those who use field recordings do so in

diverse and idiosyncratic ways, often incorporating aspects of the other styles outlined above. Nevertheless, there are some distinctive ways of using field recordings that are common in sound art. These involve creative experimentation with overlooked, hidden or ordinarily inaudible sounds, often through interventions in sonic environments via site-specific installations, performances or audio walks. Useful here is Cox's definition of sound art as disclosing the unconscious background noise of the world, what in Deleuze and Guattari's terms is the virtual dimension of sound, as distinct from intentional, ordered sounds such as music, speech and acoustic signals:

> "the crackling of cosmic radiation, the rush of the wind, the roar of the sea…every signal is issued against the backdrop of this noise…the background hubbub of life, the ceaseless sonic flux. Just as objects fill visual space, noise is what fills the auditory field: the hum of fluorescent lights, the rustling of leaves or fabric, the sound of traffic, radio static" (Cox, 2009, page 20)

Phonographic technologies have brought this background noise into the cultural sphere and enabled artists to work with it. Audio recording devices register the "messy, asignifying noise of the world" (Cox, 2011, page 154), and struggle to discriminate between signal and noise: "The apparatus unsemantically 'listens' to the

acoustic event” (Ernst, 2013, page 61). Even with the engineering of highly directional microphones, filters, frequency curves and noise reduction systems, devices designed to record signals such as music and speech inevitably also record “the reverberations of the room, the hum of electricity, the whir of the machine, and countless incidental sounds that make up the auditory field… For more than a century now, audio engineers have attempted to eliminate or reduce this field of noise, which, however, sound artists embrace as their very material” (Cox, 2009, pages 22-23).

[Audio clip 4 – sound art] Caption: An example of the kind of field recording often used in sound art, made using contact microphones attached to a radiator in Dundee Contemporary Arts.

Sound art styles of field recording often make use of alternative kinds of transducers, such as contact microphones [3] and induction coils [4]. Binaural recordings are sometimes used to hallucinatory effect, blurring the distinction between live and pre-recorded realities, as in Janet Cardiff’s audio walks (Pinder, 2001). Sound artists have also developed experimental techniques for working with the ambiences of particular places, such as repeatedly recording, playing back and re-recording background sounds to produce resonances, as in Alvin Lucier’s seminal *I Am Sitting In A Room* and Jacob Kirkegaard’s *Four Rooms*, and filtering background noise through technologies that tune it, as in Bruce Odland and Sam

Auinger’s permanent installations in public spaces. Such styles of field recording may include elements of representation, but used in ways that rework, reconfigure, detourne, fictionalise or otherwise play with space.

Vibrating spaces: representation, performance, affect

As I have already suggested, field recordings often function to represent spaces and environments, particularly in the soundscape and nature styles, which produce aural knowledge of places, what Feld terms acoustemology (Feld and Brenneis, 2004). For Drever (1999, 2002), thinking about field recordings as representations opens up questions about their construction, framing, politics and ethics, what has been included and excluded, and how power is being enacted by representing particular beings in particular ways.

However, in the wake of non-representational theory, the question arises: are field recordings only representations, or are there other ways of understanding what they do? Filtered through non-representational theory’s emphasis on practice and performance (e.g. Thrift, 2000; see also Smith, 2000), some forms of field recording seem explicitly performative, particularly sound art styles. Field recordings are often used in audio walks, for example, which are performed by listeners through their walking movements and shifts of attention in what Myers (2011) describes as a form of participatory theatre.

More fundamentally, there is a lively performativity in the operation of phonographic machines. Unlike landscape photographs or paintings, which appear as immediately present for seeing, field recordings have to be enacted to be heard, taking time to unfold. What we think of as ‘audio’ on an MP3 player, hard drive or web server is an intricate arrangement of particles embodying in physical form the on or off values of millions of bits. Looking to the materialist theories of media archaeology, these arrangements of particles can be understood not as representations but rather as a kind of microscopic physical texture, resolutely non-semantic and non-discursive (Ernst, 2013). In the recording process, this texture is shaped through an ensemble performance involving various human and more-than-human actants. The vibrations in the environment being recorded, its acoustic qualities of reflection and absorption; the recording apparatus of microphones, cables, preamplifiers, electrical currents, memory cards, batteries and headphones; and the recordist’s ears, hands and eyes – all of these forces and machines function together in a carefully orchestrated arrangement.

The notion of field recording as ‘capturing’ sounds from ‘out there’ in the world, like a hunter capturing prey, is misleading. Sounds are not objects but fleeting movements, waves propagating amongst bodies. A field recordist is no more able to capture the sound of a bird than a hunter is its flying. What the field recordist brings home

is not sound from the environment, but arrangements of charged particles in semiconductive materials in solid state or ‘flash’ memory, or the magnetic surfaces of hard drives, tapes and minidiscs. These recordings are not sounds. The sounds, if they are anywhere at all, are still ‘out there’ in the field, dissipating through space.

On playback, the texture of the recording acts as a set of instructions for a further performance, something akin to an extremely precise musical score for an electro-mechanical orchestra. Data is spun into vibration through digital to analogue converters, amplifiers, loudspeakers, air and ears, again working together as an ensemble. Only through this process do recordings become sounds. These performative qualities mean that field recordings are as much about the here-and-now, “unfolding in the present” (Vogelin, 2010, page 4), as they are representations of a there-and-then. The performances of playback may represent the spaces where the recordings were made, but in doing so they also make spaces anew, generating vibrating fields of waves.

Any notion of the playback space as a blank canvas is problematic. Field recordings do not present themselves in vacuum, and cannot be isolated from the already present soundings of the environments in which they are auditioned. As I have already suggested, the result is the folding of (at least) one sound environment into another,

effecting a kind of doubling or layering of space. Audio generated from the traces made ‘out there’ in the field melds and mixes with the acoustics of the playback location, its background noise, reflections, absorptions and resonances, to create a new hybrid space. The performative nature of space itself, its instability, malleability and reconfigurability, thus becomes apparent. Field recordings enact something akin to what Kanngieser (2013) describes as Dada’s disruption of one context via the insertion of another, albeit usually in less shocking and more subtle ways.

The spaces of field recordings can be understood as the material and technological spaces of microphones, loudspeaker arrays and headphones, or the architectural spaces of editing studios, art galleries and public installations. But at a more fundamental level, the spaces produced by field recordings are spaces of vibration, formed from the movements of sound waves – invisible fields rippling and swirling around, bouncing off surfaces, playing on listening bodies, funneling into them and through them, producing for listeners a “physically haptic experience, as the fluctuating air pressure impacts on one’s body” (Drever, 1999, page 27). These vibrating spaces can be understood as aural architectures (Blesser and Salter, 2007) or acoustic territories (LaBelle, 2010), in which space is reconfigured through sound.

In thinking about field recordings as vibration, Elizabeth Grosz's work on art is helpful. Grosz understands vibration as elementary to life. It is "the common thread or rhythm running through the universe from its chaotic inorganic interminability to its most intimate forces of inscription on living bodies of all kinds and back again" (2008, page 54): the explosion of a supernova, the beating of a heart, the flutter of wings, the flow of electrons, the rumblings of an earthquake. She defines vibration as "oscillations, differences, movements of back and forth, contraction and dilation: they are a becoming-temporal of spatial movements…Vibrations are vectors of movement, radiating outward, vibrating through and around all objects or being dampened by them." (ibid., page 55) Grosz does not restrict vibration to sound, but many of the examples she discusses are sonic, such as music and birdsong, and her definition of vibration is reminiscent of acoustic science, which understands sound as oscillatory movements propagating through matter (e.g. Kinsler et al., 2000).

Grosz argues that the function of vibration is not only to enable life to survive but to multiply and intensify life, to "generate excess, further vibratory forces, more effects, useless effects, qualities that can't directly be capitalized." (Grosz, 2008, page 54) For example, while birds use alarm calls to warn off predators, their songs are more complex and appear to perform an erotic courtship function. Male birds sing to charm and woo females, and to mark out territory

for breeding. Birdsong is an affectively potent force and one that has long captivated field recordists, especially those working in the nature style.

Following Deleuze, Grosz sees the arts as working with vibrations, framing them, composing them as a way of accommodating the chaos of the universe. “The visual and sonorous arts capture something of the vibratory structure of matter itself; they extract colour, rhythm, movement from chaos in order to slow it down” (ibid., page 19). Field recordings work directly and explicitly with the vibrations of this chaos, understood as the infinite, disordered fullness from which all living things arise, referred to by Deleuze and Guattari as the virtual. Chaos animates all life, enabling it to reinvent and propagate itself, to constantly become-other, but it also threatens life with disorder, dissolution and death. According to Grosz, art, like philosophy and science, is one way that humans have devised for relating to this chaos, “in order to live with it…to reduce it to some form that the living can utilize without being completely overwhelmed” (ibid., page 28). Returning to Cox’s conception of sound art, acoustically this chaos is background noise, the myriad vibrations of the world, which field recording does not so much capture as transduce, amplify, intensify and reiterate.

Grosz’s draws attention to the affective qualities of worldly vibration, in a way that resonates with my performative account of

field recordings: “There is something about vibration, even in the most primitive of creatures, that generates pleasureable or intensifying passions, excites organs, and invests movements with greater force or energy…Vibrations, waves, oscillations, resonances affect living bodies, not for any higher purpose but for pleasure alone.” (2008, page 33) And not only pleasure but other affects too. Goodman (2009) writes of how sound can generate fear and dread, creating a bad vibe, particularly at the extremes of the frequency range of human hearing.

The conception of affect on which both Grosz and Goodman draw follows a line of thinking from Spinoza through Deleuze and Guattari via Massumi that has animated much recent work in the social sciences and humanities. Affect, in this formulation, is defined as the capacity of bodies to affect and to be affected by other bodies, thereby augmenting or diminishing a body’s capacities to act (Massumi, 1987). In the simplest terms, affects are forces that move bodies, producing “a non-conscious experience of intensity” (Shouse, 2005). Affect, in this sense, is always performative since it is a kind of doing, an activity that has effects on the world. These ideas are not uncontentious (e.g. Leys, 2011; Pile, 2010; Thien, 2005), but they are helpful for understanding how sound moves bodies: for example, in the formation of listening selves (Simpson, 2009), the political functions of voices, such as those of Hitler and Reagan (Kanngieser, 2012), sound’s capacity to alter bodies,

evident in tinnitus for example (Ash, 2014), and the visceral connections to place that are forged by environmental sounds (Duffy and Waitt, 2013).

A couple of examples will illustrate the affective possibilities of field recordings and the spaces of vibration they produce. In the terms of my typology, these projects combined soundscape and sound art styles of field recording. In *Transplant*, sound artist John Wynne made extensive sound recordings in a heart and lung transplant hospital as part of a collaborative documentary project with a photographer (Wainright and Wynne, 2008). The material was used to produce gallery installations, a DVD and a radio programme, all of which blended recordings of patients' voices, speaking about their experiences, with soundscape recordings of hospital ambiences, the machinic sounds of medical equipment, alarms and buzzers. In these works, familiar sounds can be heard – footsteps in a corridor, the beeping of heart monitors – but also sounds whose source cannot be ascertained with any clarity: a certain atmosphere, a sense of institutional space, hard to pin down. The work is supercharged with affect. Understated rather than sentimental, it evokes a sense of quiet dread, of mortality and frailty; the visceral, bodily sensation of illness, death hovering close by; but also hope, hanging on by the fingernails, the miracles of medical science, of new life.

Another example is *Kilmahew Audio Drift No. 1*, a site-specific sound work I produced as part of research in a landscape in the west of Scotland that contains a unique series of ruins from medieval, Victorian and modern times [reference removed for anonymity]. The drift was designed to be listened to on a portable MP3 player whilst walking in the landscape. Like *Transplant*, it is broadly ethnographic, using a mixture of field recordings and interviews with people about the site. These are layered together, sometimes densely, blending different stories about the place together in a way that reflected the multi-layered, composite character of the ruins. As with all such creative works, the range of responses from listeners has varied considerably, but there is a recurring theme: an affect of the uncanny, the spectral, of the drift conjuring up phantoms. The sound of a barking dog, for example, has made some people ‘freak out’ in a quite visceral and not necessarily pleasurable way. Others experienced a sense of reanimation and repopulation, the ruins coming back to life.

[Audio clip 5 – Kilmahew] Caption: An excerpt from *Kilmahew Audio Drift No.1*. Auditioned insitu, a binural field recording of a barking dog generates powerful affects for some listeners.

Leaving aside the complex ethical issues raised by these works, common to both is a potent combination of representation and affect. I want to argue that it is precisely this mix of different

registers that makes these works ‘work’. Their representational aspects are all the more effective for their affects. These affects enable the works to tell compelling stories, to represent places in a way that carries a certain force of truth, albeit partial, messy, multiple truths. They produce knowledge that hits home. Conversely, the representational aspects of these works, the fact that they are recognisably portraits of people and places, heightens their affects. Had Wynne’s recordings of the hospital been presented in an extreme acousmatic style, stripped of all recognisable detail, we would hear abstract, unidentifiable clicking, whirring and reverberating sounds – evocative, perhaps, but without the visceral impact that comes from the knowledge of their context. In these works, as with many field recordings, representation and affect are mutually reinforcing.

The turn towards the non-representational in geographical thought risks denigrating representation as inherently stultifying, lifeless and stolid. Harrison (2000, page 499) complains about “the inability of knowledge in social analysis to do anything other than hold onto, produce, represent, the fixed and the dead; a failure to apprehend the lived present as an open-ended and generative process; as practice.” But field recordings unfold their representations in practice, in the performance of playback. At the point of audition, data becomes vibration, movement. The vibration of spaces is represented through vibration itself – a form of representation that

is not fixed or dead, but lively and affecting. Field recordings demonstrate that representation and affect need not always be opposed. As Dewsbury argues (2003, page 1911), “[t]he representational system is not wrong: rather, it is the belief that it offers complete understanding – and that *only it* offers any sensible understanding at all – that is critically flawed.”

Producing spaces: superimposition and political economy

How best to understand the spatial functions of field recordings, as representational and affective vibrations? As I have already intimated, looking to Lefebvre, it might be thought of as a form of spatial production. There are reasons for caution with this line of thinking, however. Lefebvre warns against loosening the definition of production too far from the Marxian conception of the generation of commodities through labour: “We speak of the production of knowledge, or ideologies, or writings and meanings, of images, of discourses, of language, of signs and symbols…Such is the extension of these concepts that their comprehension has been seriously eroded.” (ibid., page 69) He also understands social space as relatively durable. Most of his examples are spaces where form has been imposed on land, such as villages, cities, roads and piazzas. The spaces created by field recordings are more ephemeral and amorphous.

If some repurposing of Lefebvre's work can be allowed, however, there are insights to be had in at least two areas. First, his thinking can help in understanding the relationship between the representational dimensions of field recordings and their physicality as fields of vibration. For Lefebvre such things are not mutually exclusive but co-exist and interfere, lending space a multivalent, complex character. His thought is attuned precisely to exploring the relations between such different kinds of spatiality, rather than conflating or slipping between them. Of particular relevance is the analogy he makes between the production of space and fluid dynamics:

> "where the principle of the superimposition of small movements teaches us the importance of the role played by scale, dimension and rhythm. Great movements, vast rhythms, immense waves – these all collide and 'interfere' with one another; lesser movements, on the other hand, interpenetrate." (Lefebvre, 1991, page 87)

This analogy is apt for understanding field recordings, since acoustic theory is derived from fluid dynamics. Sound waves in air behave in much the same way as waves in liquids. As I have already suggested, we can think of field recordings as superimposing sounds onto spaces, with the recordings mixing new layers of vibration into the playback situation, such that the two become "intercalated,

combined, superimposed” (ibid., page 88). Spaces become doubled and hybridised through field recordings, their pre-existing acoustics mixed with machinic renditions of sounds traced from other spaces and times.

Second, Lefebvre’s thought helps to situate field recordings in a political economy of social-spatial labour relations. Again, this is helpful given the tendency of many field recordists to focus on their craft and its aesthetics. A critical account needs to push in the opposite direction, situating field recordings in wider technological, socio-economic and political contexts. The aspiration of many field recordists is towards acoustic transparency, through the use of equipment with low noise, high bandwidth, high dynamic range and so on, all of which tends to hide the production process. But Lefebvre invites us to work backwards from the finished work to the social-economic-spatial relations of its genesis (ibid., p.113), unravelling networks of labour, such as:

(i) The labour of the field recordist: freelance work by an artist or sound recordist, or the unpaid activities of a hobbyist, or the salaried labour of a researcher. Usually this is the labour of individuals who live in the minority world, under conditions of neo-liberal capitalism.

(ii) The labour that produced the equipment used: from the work of low paid employees in far-eastern technology factories,

such as Foxconn’s vast Chinese campuses where Apple computers and iPods are assembled, to workers in smaller firms building more specialized gear. This labour is varied, including research and development, software engineering, assembly line work, machine operation, quality control, marketing, sales and technical support.

(iii) The labour of distribution and infrastructure: including work in CD duplication plants and retail outlets, in the travel and transport industry (for the movement of recordists and equipment), the work of technicians, IT and telecoms workers including programmers, engineers and systems analysts.

I want to end with a brief example of how such a political-economic analysis can be put to work. The ‘BE OPEN sound portal’ was an immersive audio playback structure developed for the London Design Festival, installed in the flagship location of Trafalgar Square in 2012, and later outside the Chelsea College of Art and Design in 2013. A circular enclosure with a monolithic black exterior and pure white interior, the portal contained a nine-channel ambisonic (surround sound) speaker system, surrounded by baffles designed to shut out the noise of the city round about. The portal was designed as a pure listening space, a blank canvas for aestheticised sound, immersive and abstract. Members of the public were invited to enter

to listen to a programme of commissioned audio works, including several based on field recordings.

One work, *Strata*, by sound artist Mark Peter Wright and students from the London College of Communication, used field recordings of London to bring the messy detritus of the city back into the purified space of the portal. For example, the work included a recording of the bawdy calls of cockney traders hawking wares at a flower market. Insitu, this humourously detourned the space, undermining the exclusionary effects of its design and the underlying politics of noise control.

[Audio clip 6 – Strata] Caption: An excerpt from *Strata* by Mark Peter Wright, Sophie Mallett, Yiorgis Sakellariou and Brigitte Hart. Courtesy of the artists.

Looking at the labour underlying the portal, bespoke fabrication was by a small, specialized Brighton-based firm called Millimetre, while the design was by multinational engineering corporation Arup, whose services include acoustic consultancy, concert hall design and noise control. The branding of the portal, in press releases, websites and media articles, emphasised Arup’s role but made no mention of Millimetre. In effect, in addition to showcasing the artworks, the sound portal was a means for a global multinational to hawk its own wares in the heart of London, in a high-profile, prestige

public space. In *Strata*, field recordings both participated in this process and playfully critiqued it. Furthermore, the BE OPEN foundation, which funded the portal, is a philanthropic project of Yelena Baturina, Russia's richest woman, a billionaire oligarch whose wealth was generated in the construction industry. Tracing the production of this space therefore uncovers multiple layers of labour: the labour of sound artists and market traders; the labour that went into the computing and audio equipment used to produce and reproduce the works; the labour of Arup designers and engineers; the fabrication labour of Millimetre; and the accumulation of capital via the labour of Russian builders. There is a parallel between these forms of productive labour and the audio production processes involved in field recording. Both involve repetitious work, and both blur the boundaries between machinic processes and human actions, between the aesthetic and the economic.

In this analysis, field recordings emerge not as neutral aesthetic objects, but as participants in the production of a global space of consumer electronics, international travel, digital media infrastructure, arts institutions, and engineering and design companies. Field recordings produce small spaces nested inside these larger networks, small vibrations riding on the back of longer, slower, waves.

Conclusion

In this article, I have argued that field recording constitutes a form of geographical practice that both represents spaces and produces them anew through reiterative performances. Field recordings involve a mixture of human, technological and natural actants, which rework spaces through vibration. These vibrations generate affects, intensifying sensation by physically moving bodies. Field recordings produce space through a superimposition of sound that interpenetrates pre-existing spaces, effecting a layering or doubling, which can produce hybrid spaces, or work to critique, detourne or reconfigure space. In other words, field recordings work through space.

Rather than being mutually exclusive, the representational and affective functions of field recordings are simultaneous and can reinforce each other. Field recordings are also not politically neutral. They create spaces with implicit values, exclusions and inclusions: the decontextualisation of acousmatics, the romanticism of nature styles, the realism of soundscape recordings, the experimentation of sound art styles. There is also a political economy of field recording involving an extended network of labour – the work of artists, technology manufacturers, designers, technicians – and systems of global transport and electronic communications within which equipment, recordists and their recordings circulate, and which they thereby help to reproduce.

There is a paradoxical spatiality to the practices of field recording, a simultaneous intimacy and distancing. On the one hand, field recordings take listeners closer to the vibrations of worldly beings, materials and structures. At the point of audition, the listener's body and attention become vibrational, moving in sympathy with acoustic traces of the recorded space. But at that very moment, the recorded world is also displaced, for the listener is in fact vibrating together with an ensemble of machines, here in the present. The space-time of recording feels simultaneously palpable and irrevocably lost, both close to hand and out of reach. Field recording is therefore evocative of present absences, spectral traces of spaces (Foreman, 2011; Gallagher, 2014). Looking to the past there may be a sense of melancholy, even nostalgia. But facing towards the future, field recording reiterates the world by repeating, amplifying and intensifying its vibrations, reinventing space through sound.

Notes

[1] In film and television production, a wild track is a sound recording that is not synchronised with the moving images. It creates an ambient background for the scene. Room tone is a recording of the background noise of a space where filming has taken place, used in post-production to cover over gaps created by edits to the dialogue.

[2] Hydrophones are underwater microphones. They use waterproofed acoustic sensors to transduce physical vibrations

within liquids into electrical audio signals. Hydrophones can be used to create renditions of the vibrations of aquatic plants respiring, sounds made by aquatic animals (e.g. dolphin calls, whale song, shrimp snapping, limpets grazing) and machinic processes such as boat engines.

[3] Contact microphones transduce vibrations passing through solids into electrical audio signals. They usually involve piezoelectric sensors that are attached to vibrating surfaces and objects with some form of clamping device to improve the acoustic coupling.

[4] Induction coils (sometimes called telephone pickups) generate audio signals from the electromagnetic fields emitted by electrical devices such as computers, telephones and televisions.

[5] In binaural recording, a pair of miniature omnidirectional microphones is placed inside or close to the recordist’s ears, ether by using in-ear mics or by clipping the mics to a hat, spectacles or specially designed headgear, or inside the ears of a dummy head. The technique incorporates the acoustic qualities of a human head into the recording, including differences in time and intensity of sound arriving at each ear. When auditioned on headphones, binaural field recordings closely mimic what would have been heard in situ by a human listener, creating a lifelike three dimensional acoustic scene with accurate spatial cues.

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