

1 | Introduction – music, sound and space:
transformations of public and
private experience

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Topological music, sonic-spatial practices

When new instruments will allow me to write music as I conceive it, the movement of sound-masses, of shifting planes, will be clearly perceived in my work, taking the place of linear counterpoint. When these sound masses collide, the phenomena of penetration or repulsion will seem to occur. Certain transmutations taking place on certain planes will seem to be projected onto other planes, moving at different speeds and at different angles ... We have actually three dimensions in music: horizontal, vertical, and dynamic swelling or decreasing. I shall add a fourth, sound projection ... [the sense] of a journey into space. Today, with the technical means that exist and are easily adaptable, the differentiation of the various masses and different planes as well as these beams of sound could be made discernible to the listener by means of certain acoustical arrangements ... [permitting] the delimitation of what I call 'zones of intensities'. These zones would be differentiated by various timbres or colours and different loudnesses. [They] would appear ... in different perspectives for our perception ... [They] would be felt as isolated, and the hitherto unobtainable non-blending ... would become possible. (Varèse 2004 (1936): 17–18)

Over the past few weeks the Old Schools Combination Room has been buzzing with workshops, talks, film showings and a steady stream of visitors and participants. Today, it was properly pumping. Responding to the refusal of University management to engage in any sort of discussion with the occupation of the Old Schools, protesters staged a noise protest in the afternoon, blasting music towards the Vice Chancellor's ... office out of the windows of the Senior Combination Room ... We launched the noise protest – which involved amplifiers blasting music, an electric guitar, drums, pots, pans and chants over megaphones – in response to the

I am grateful to the following colleagues for their perceptive and valuable comments on this Introduction: Robert Adlington, Lionel Bently, David Borgo, Don Brenneis, Andrew Eisenberg, Martin Kretschmer, Katharine Norman, Gascia Ouzounian, Deniz Peters, George Revill, Tom Rice, Jonathan Sterne, Patrick Valiquet and Simon Waters, as well as anonymous reviewers. Many of their suggestions were enormously helpful. None of them, however, are responsible for the final cut.

Cambridge University Press

978-0-521-76424-7 - Music, Sound and Space: Transformations of Public and Private Experience

Edited by Georgina Born

Excerpt

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University's refusal to engage in discussion ... and a group of students took drums to the main entrance of the Old Schools to be heard there ... If the University is more willing to implement a forcible and violent eviction than to speak to the students it claims to speak for, we must hold them to account for their choice ... We have collectively agreed upon and implemented a safer spaces policy, as a framework for addressing these concerns within our space.¹

The two opening quotations between them lay out the terrain of this book. The juxtaposition of these vivid tableaux is intended to highlight the mutual relations between music, sound and space, as well as the generative potential of bridge-building between, on the one hand, the study of music and sound and, on the other, the study of spatial and social processes. In the first quotation, the French–American composer Edgard Varèse – who described his music as ‘organised sound’ and himself as ‘a worker in rhythms, frequencies, and intensities’ – inaugurated a discourse on twentieth- and twenty-first century music that has since grown exponentially in both influence and extent. The copious topological, spatial and mobile metaphors coined by Varèse to imagine and describe the sonic material of his musical works – shifting planes, colliding masses, projection, transmutation, repulsion, speeds, angles and zones – not only prefigure the later interest in spatialisation in electronic and electroacoustic music and what has come to be called sound art, but they point in the direction of the themes of this volume, echoing some of the core conceptual terms that it summons up. The second quotation comes from a website statement issued by students who occupied a central building in Cambridge University for several weeks in late 2010 in protest against major cuts to British university funding by the government. In reaction to the cuts, a campaign to defend public universities gathered pace in a number of cities: the ‘defend education’ movement.² What is striking in the statement is the prominent role given to music- and noise-making in the actions intended to elicit a public dialogue with the authorities, particularly collective acts of noisily mobilising in and occupying public space, as well as the insistence on creating independent ‘safer spaces’ to foster self-organisation and participatory political dialogue. Issues of sound and space therefore had a focal place in the movement’s political imagination.

The subject matter of the present collection congeals at the intersection of a series of related terms: music, sound, space, and how these phenomena

¹ Statement by students occupying the Senior Combination Room, Cambridge University, in protest at the threatened cuts to university funding, 1 December 2010, www.defendededucation.co.uk/old-schools-occupation/safer-spaces-agreement (last accessed 18 August 2012).

² For the Cambridge branch of ‘defend education’, see www.defendededucation.co.uk/ (last accessed 18 August 2012).

have been employed to create, mark or transform the nature of public and private experience. While music and sound have long been employed to cultivate realms of both public and private experience,³ these capacities accelerated with the burgeoning of sound media from the late nineteenth century. The early telephone, for example, was ‘startling and pleasurable in its capacity to transmit bodily and intimate physical sounds, suggesting a fluid interchange of separated spaces, in which the interior of the body is transmitted ... to the inner ear of the listener’ (Connor 1997: 206); indeed ‘a long series of literary phantasms ... rewrite eroticism itself under the conditions of gramphony and telephony’ (Kittler 1999: 56). In parallel, the gramophone and its precursors made it possible in the first decades of the twentieth century for music-listening to be relocated from the music hall, jazz club or concert hall to the home or brothel, while radio broadcasts enabled music to accompany not only domestic life but factory labour and political meetings (Korczynski and Jones 2006). Already apparent is a dual movement that is characteristic of this history: both interiorising, in the domestic provenance of early sound media and the inter-corporeal, prosthetic uses of telephony, and exteriorising, in those media oriented more to engendering collective forms of life and work.

At the base of this collection is the conviction that ‘perhaps the most important distinguishing feature of auditory experience ... [is] its capacity to ... reconfigure space’. With the development of modern sound media, according to Steven Connor, ‘the rationalized “Cartesian grid” of the visualist imagination ... gave way to a more fluid, mobile and voluminous conception of space ... Where auditory experience is dominant, we might say, singular, perspectival gives way to plural, permeated space. The self defined in terms of hearing rather than sight is a self imaged not as a point, but as a membrane ... a channel through which voices, noises and musics travel’ (all Connor 1997: 206). As the chapters that follow demonstrate, however, the auditory self is also an embodied self that responds and re-sounds: in the words of Jean-Luc Nancy, sound is ‘tendentially methexic (that is, having to do with participation, sharing, or contagion)’; it ‘spreads in space, where it resounds while still resounding “in me”’ (Nancy 2007: 10, 7). But the contributors to this volume go further, proposing that the auditory self, as listener, musician, sound artist or sonic *flâneur*, can be positioned equally as a boundary point that impedes or stops the flow of music

³ Corbin (1998), for example, a historian of sound and the senses, charts how church bells produced communal experiences of sonically mediated public space long before modern sound media, sonic publics that were traversed by hierarchical social relations while also engendering collective ritual, memory and passion.

and sound, as well as being potentially initiatory in relation to sound and music – as much agentive and mediating as mediated.

The first section of this Introduction aims to identify key conceptual themes running through the book, while suggesting how these themes link to existing discussions and move them in generative new directions. In this light, the second section gives an overview of the individual chapters, bringing out their singular contributions to the volume. The book, which has its origins in an interdisciplinary conference held at the Centre for Research in the Arts, Social Sciences and Humanities at Cambridge University, brings together scholars of music, sound, mediation and modernity.⁴ It does so in order to address a series of changes in the contemporary experience of music and sound – changes that, as the chapters make clear, are associated with but not limited to their evolving forms of technological mediation. In this combination of preoccupations, the volume explores new ground. But it is also framed by a web of disciplinary and interdisciplinary areas of enquiry. Recent years have seen a veritable avalanche of scholarship devoted to the interconnections between sound and space, in some cases making links also to music and audio technologies. This is evident in the emergence and evolution of the overlapping interdisciplinary fields of film sound studies (Altman 1992a, 1992b; Chion 1994; Lastra 2000), soundscape and sound studies (Schafer 1994 (1977); Connor 2000b; Kruth and Stobart 2000; Sterne 2003; Hilmes 2005) and auditory or aural culture studies (Bull and Back 2003; Drobnick 2004), as well as in the growing attention paid to these matters in history (Attali 1985; Chanan 1995; Corbin 1998; B. R. Smith 1999; M. M. Smith 2001, 2004; Thompson 2002), anthropology and ethnomusicology (Feld 1982, 1996; Born 1995, 2005; Lysloff and Gay 2003; Erlmann 2004; Feld and Brenneis 2004; Fox 2004; Hirschkind 2006; Samuels *et al.* 2010), sociology (Bull 2000, 2007; DeNora 2000; Back 2007) and geography (S. J. Smith 1997; Leyshon, Matless and Revill 1998; Revill 2000; Connell and Gibson 2003; Wood, Duffy and Smith 2007). To these can be added developments in two further, sociologically influenced interdisciplinary fields: science and technology studies (Pinch and Bijsterveld 2004; Bijsterveld 2008) and popular music studies (Whiteley, Bennett and Hawkins 2005; Krims 2007). Manifestly, sound, space, music and technological mediation are high on the scholarly agenda.

⁴ The conference, held in April 2008, is archived at www.crash.cam.ac.uk/events/70/ (last accessed 18 August 2012). I am greatly indebted to those speakers, musicians and artists who gave presentations but have not contributed to this volume: Michael Bull, Ruth Davis, John Levack Drever, Brandon LaBelle, James Lastra, Martin Stokes and David Toop, as well as the respondents, Steven Connor, Ben Etherington, George Revill and Ben Walton.

However, such a profusion of research poses its own challenges; as one commentator observes, ‘these various venues of academic work on sound phenomena so rarely speak to or take heed of each other’ (Hilmes 2005: 252). A core aim of this collection is, then, to create productive cross-currents between fields that have hitherto developed without much mutual reference. A first way in which the volume experiments is by placing chapters that address questions of music and space, from the perspective of the music disciplines, into dialogue with others that examine sound and space. A founding observation of the collection is that musicology and the burgeoning literatures on sound and auditory cultures have proceeded largely in isolation from each other. On the one hand, research in sound studies has had little to say about music’s inhabitation of and entanglement with the encompassing acoustic environment. This is despite the fact that the work of R. Murray Schafer and other seminal writings in this area have registered music’s interconnections with the wider soundworld (Schafer 1994 (1977), Chapter 7; Bull and Back 2003, Part V). It is also despite the fact that from the outset soundscape research provided the stimulus for compositional activities, as in the music of Barry Truax, Hildegard Westerkamp and others. On the other hand, musicology and music analysis have continued to focus in recent decades primarily on those score-based lineages of twentieth-century Western art music that conceive of musical materials primarily in the terms of orthodox music notation. They have been slow as yet to respond to those parallel waves of post-1950s developments – experimental music, electronic, electroacoustic and computer music, interactive, site-specific and installation-based sound art, as well as electronic popular musics – in which musical thought and practice are irreducible to a score, where the ontological distinction between music and sound is disturbed,⁵ and which foreground the creative possibilities – whether in recorded media, live performance or installations – of the mutable boundaries between music, sound and space.⁶ The dominant academic music disciplines therefore continue to uphold the nineteenth-century formulation of musicology ‘as a kind of musical philology’ (Cook 2008: 58), making it difficult to address not only music as performance and event, but also

⁵ See Nattiez 1990: Chapter 2 on the heterogeneous and relational semantic content of, and the shifting classificatory distinctions between, concepts of music and sound as well as sound and noise with reference to both historical and cross-cultural research.

⁶ For an attempt to classify and define the various movements composing this broad historical field of developments, and a commentary on musicology’s relative neglect of them, see Landy 2007: 1–19.

those many genres of twentieth- and twenty-first-century music that have embraced new materials, new performance practices and new media.

As if in response to this impasse in the academic music disciplines, one of the most cogent implications of the growing attention to sound across the humanities and social sciences has been methodological and epistemological. In part this amounts to a ‘critique of “visualism”’ (Erlmann 2004: 1; cf. Connor 1997): a concerted attempt to wrest the bases of human knowledge away from the long-standing hegemony of visual, text-based and representational models. For Veit Erlmann, a key figure in forging close relations between sound studies and the anthropology of the senses and of sound, a methodology attuned to ‘hearing cultures’ partakes in a larger project of ‘sensuous scholarship’: ‘“Hearing culture” suggests that it is possible to conceptualize new ways of knowing a culture and of gaining a deepened understanding of how the members of a society know each other’ (Erlmann 2004: 3). Steven Feld (1996: 94–5) traces the twin origins of this approach, showing how from the outset conceptual links were drawn between sound and space. He finds them in the work of music philosopher Victor Zuckerkandl (1956) and anthropologist Edmund Carpenter (1960), both of whom propounded the idea of ‘auditory space’. Zuckerkandl’s writings, for instance, which drew on Bergson, William James and Heidegger, detailed how ‘space is audibly fused with time in the progression and motion of tones’, stressing ‘the interpenetration of auditory space and time’ (Feld 1996: 95). While Zuckerkandl’s influence was felt among a generation of anthropologists of music, ritual and symbolism, Carpenter’s was evident in the founding in 1970 of Schafer’s World Soundscape Project, which, integrating art and science, was the first research programme to focus on the nature of the sonic environment and resulted in the coining of soundscape studies and the concept of acoustic ecology. As Feld (1996: 95) explains, ‘Schafer’s group began recording, observing, and acoustically analysing the sonic experience of space and place ... and developed an analytical vocabulary, a notation system, and a comparative framework for the study of acoustic space and its human interpretation and feedback.’

While acknowledging the significance of the Schaferian lineage, Feld criticises its tendency to reify ‘a visual-auditory great divide’ (1996: 96).⁷

⁷ See Ingold 2000b for another insightful commentary, with reference to James Gibson and Merleau-Ponty, on the tendency to draw an opposition between vision and hearing in the work of such writers as McLuhan, Ong and Carpenter, and to equate vision with objectification or ‘speculation’ in the work of Jay and others. Ingold stresses instead the complementarity between visual, auditory and other sensory modalities, arguing from ethnographic evidence that in certain cultures vision as well as hearing amounts to a mode of participation or ‘being’ that is elicited by particular environments. He makes the ironic point that the critics of visualism

Rather than dichotomising vision and hearing, anthropology today – in the work of Feld, Erlmann, David Howes (Howes 1991) and others – advocates the embedding of interdisciplinary research on sound and hearing in wider cultural and historical analyses of the interplay between the senses: the study of ‘sensory ratios’ (Feld 1996: 96). Feld himself is a pivotal figure in both sound studies and the anthropology of the senses; he exemplifies a particularly generative direction, one that takes its orientation from another key turn in sound studies: to phenomenology, via Merleau-Ponty and later writers. Feld’s work is exceptional in addressing both music and sound and their interrelations as part of a broader framework of enquiry, which, in a classic paper from 1996, he identifies as a combination of ‘social phenomenology and [a] hermeneutics of senses of place’ (Feld 1996: 91).⁸ In this way he points to a second innovative dimension of this book, which responds to a common feature of the various (inter)disciplinary initiatives: the relative *underdevelopment* of analytical approaches to the *social* dimensions of the interweaving of music, sound and space. Each of the chapters in this volume addresses the social mediation of music, sound and space, whether from the perspective of their capacity to engender modes of publicness and privacy, their constitution of forms of subjectivity and personhood, their affective resonance, or their embedding in capitalist dynamics of commodification and reification. A core aim of this Introduction is to show how, taken as a whole, the contributions augur a new kind of social phenomenology of music and sound, and one that expands considerably upon previous conceptions.

invariably have their source ‘in the very Cartesian epistemology that they seek to dethrone. What they offer, then, is ... a critique of modernity dressed up as a critique of the hegemony of vision’ (Ingold 2000b: 287).

⁸ It is beyond the scope of this Introduction to address the important questions posed in anthropology about the relations between space and place (Feld and Basso 1996), and by ethnomusicology about the significance for music of place and locality (e.g. Stokes 1994; Solomon 2005a, 2005b; Wolf 2009), although certain chapters do address these issues (see Chapter 2 by Ouzounian, Chapter 8 by Eisenberg and Chapter 11 by Dueck). Suffice it to note Edward Casey’s cogent critique, by way of a sensuous phenomenology, of any conception of place in which it is subsumed by what are thought to be primary, universalised categories of space and time, such that ‘generality, albeit empty, belongs to space; [while] particularity, albeit mythic, belongs to place’ (Casey 1996: 15). With reference to the philosopher A. N. Whitehead, Casey argues against ‘the tendency to posit a plane of abstract perfection and purity [i.e. space or time] onto which complexities and dirty details come crowding [i.e. place]’ (Casey 1996: 45). Rather, ‘space and time are themselves coordinated and co-specified in the common matrix provided by place’ (Casey 1996: 36). Casey’s remarks are highly salient to the alternative accounts of space as well as the sonic–social phenomenology elaborated in what follows. My thanks to Don Brenneis for suggesting that I mention these issues, and in particular for referring me to Casey.

Feld (1996: 97) stresses the embodied and spatialised nature and the affective entailments of sound perception:

Sound, hearing and voice mark a special bodily nexus for sensation and emotion ... By bringing a durative, motional world of time and space simultaneously to front and back, top and bottom, and left and right, an alignment suffuses the entire fixed or moving body. This is why hearing and voicing link the felt sensations of sound and balance to those of physical and emotional presence.

With reference to his seminal ethnography of the Kaluli people of the rain-forests of Papua New Guinea (Feld 1982), Feld introduces the concept of *acoustemology* (acoustic epistemology). With it he points to 'acoustic knowing as a centrepiece of Kaluli experience; how sounding and the sensual, bodily, experiencing of sound is a special kind of knowing, or put differently, how sonic sensibility is basic to experiential truth in the Bosavi forests' (Feld 1994). 'Acoustic knowing', then, is an experiential knowledge based on the intimate relations between sound, space and place. *Acoustemology* invokes the way that 'space indexes the distribution of sounds, and time indexes the motion of sounds. Yet acoustic time is always spatialized ... And acoustic space is likewise temporalized' (Feld 1996: 97–8). This orientation is amplified by Feld's ethnography, in which Kaluli socialities more fully enter the frame, and in which he shows how Kaluli musical experience cannot be understood without reference to their wider ontology and ecology. For Kaluli, music is embedded in and constitutive of not only their environmental ecology and collective experience of space and time, but their social relations and rituals, emotions and labour. Feld charts in both ordinary and ceremonial music-making a series of ambiguities and fluidities concerning the boundary between collective emotion and the aesthetic and symbolic valencies of musical performance, as well as between improvisation and composition, music-making and everyday work and play, and individual and collective experience. Musical expressions therefore weave through and form an indissociable part of Kaluli socialities.

Several fruitful insights can be derived from Feld's work. First, he indicates the significance of a sonic-social phenomenology, one that is generalisable as both epistemology and method. Second, he shows convincingly that at the core of our embodied experience of sound and music lies the interrelation between, and mutual modulation of, space and time. Third, Feld portrays these modes of experience – sound, music, their spatialities and temporalities – as immanently affective and as generative of subjective impression, expression and transformation. And fourth, his insistence on the mutuality of these modes of experience, and of the sounded imbrication

of bodies and environment, gestures also in the direction of a theory of mediation of sound and music:⁹ of their complex and multiple, sensory and affective, material and social forms.

Space in/and music

If sound studies and the anthropology of sound have drawn illuminating links between sound and space, how have the music disciplines understood the relations between music and space? While ‘space’ has often been used in ambiguous and metaphorical ways in relation to music, it is possible to distinguish three broad ways of conceptualising space in/and music in these literatures: three distinct lineages of practising and cognising musical spatiality.

A dominant, formalist approach to musical spatiality, allied to score-based, visual and graphic representations and analyses of music, limits itself to a concern with the internal operations of musical sound conceived primarily in the terms of what is called ‘pitch space’. To illustrate from recent work: Edward Campbell, in his study of the music and philosophy of Pierre Boulez, writes that ‘the concept of musical space, in the sense of pitch space, is a fundamental one for many writers’ (Campbell 2010: 220) and cites approvingly the metaphorical reading of musical space in Zuckerkandl (1956) and Roger Scruton (1997) in this regard. Campbell explains that ‘From a spatial perspective, tonal music can be thought of as tracing paths through pitch space by means of the system of keys and their

⁹ It is important to clarify the term mediation in relation to music and sound. In earlier writings I pointed to the importance of understanding music as ‘inherently “mediational” – liable to mediation’ (Born 1991: 158), in the sense that music is always (but variably) experienced through a constellation of aural, notational, visual, performative, corporeal, social, discursive and technological forms – forms that mediate the music (or sound). Such an approach makes it possible to ‘move beyond ... impoverished and essentialist notions of how music conveys meaning by developing an analysis of the multiple, specific forms in which it is experienced’, allowing us to grasp ‘the multitextuality of music-as-culture, and the need to analyse its particular forms – aural, visual, technological, social, discursive – as an ensemble’ (Born 1991: 159). This conception (which I developed independently) in some ways converges with the general definition of mediation given by Bruno Latour (2005), which he draws through a contrast: ‘An *intermediary*, in my vocabulary, is what transports meaning or force without transformation ... *Mediators*, on the other hand ... transform, translate, distort, and modify the meaning or the elements they are supposed to carry’ (Latour 2005: 39, emphasis in original). Mediation, then, transforms both elements in the relation posited by it: thus, in writing of music’s social mediation I refer to how music is transformed by its social manifestations or embodiments, as well as to how the social is produced and transformed by music. On these issues see later sections of this Introduction as well as note 81 on the concept of ‘musical capitalism’.

modulation to distinct but related regions', and he continues by way of the Second Viennese School's alternative, dodecaphonic manipulation of pitch space in the form of the twelve-tone series and its transpositions, as well as Schoenberg's idea of the 'unity of musical space' (Campbell 2010: 220). Campbell is persuaded to engage in the analysis of pitch space because of its central place in Boulez's musical poetics. He charts its changing status in Boulez's writings, particularly the efflorescence of spatial concepts in his Darmstadt lectures in which Boulez identified "the conception and realisation of a *relativity* of the various musical spaces in use" as an urgent objective' (Campbell 2010: 220, citing Boulez 1971: 83) and distinguished two main pitch-space states, 'smooth' and 'striated', as the basis for an expanding taxonomy including such sub-species as curved, regular and irregular striated pitch spaces (Campbell 2010: 221–5).¹⁰ A similar spatial ontology is palpable in dialogues between composers, for example in commentaries by Boulez and Alexander Goehr on what they perceive to be problems with Messiaen's compositional style. As Arnold Whittall describes, they charge Messiaen with having 'no idea of musical levels: all was surface' (Goehr 1998) and with accomplishing the mere juxtaposition as opposed to development of musical ideas, a failing linked to his lack of interest in constructing 'organic wholes' in the tradition of Germanic organicism (Whittall 2007: 244–5).

It is intriguing that since the 1970s analogous spatial metaphors have been a feature of psychoacoustical research. Here space is no longer conceived intramusically, but as a property of the interface between sonic or musical object and perceiving subject. This stance is manifest both in theories of auditory perception that focus on the way that sonic sensory data are grouped and segregated by individual listeners into what are called 'auditory streams' (McAdams and Bregman 1979; Bregman 1994 (1990); Bregman *et al.* 2000),¹¹ and in theories concerned with the analysis of perception of musical timbre in terms of 'timbre space' (Wessel 1979). The latter paradigm is symptomatic of the close interconnections that arose between research on psychoacoustics, music synthesis techniques and new aesthetic possibilities in computer music (Born 1995). In the words of David Wessel (1978):

¹⁰ Boulez's distinction between smooth and striated space was given wider philosophical and political resonance by Deleuze and Guattari (1987: Chapter 14), which has in turn stimulated further spatial orientations in social theory, e.g. Osborne and Rose 2004: 211.

¹¹ On the intuitive deployment by composers of Bregman's psychoacoustical principles, see Harley 1998.