

Vocalic space: socio-materiality and sonic spatiality.

Introduction

This chapter looks at the ways in which social and cultural theory might provide a set of resources for theorising sonic spatiality. This is worked through the specific example of the spatiality of voice conceptualised through Steven Connor's (2000) conception of 'vocalic space'. Social and cultural theory has had relatively little to say about music and even less to say about the sound itself or the qualities of distinctively sonic experience and its associated sonic realm or sonic spatiality. Yet sound exhibits qualities which reoccur in many theoretical figurations without necessarily being subject to the sort of critical interrogation which might suggest the potentials and limitations of the sonic. Sound surrounds and envelops, it touches and affects the listener in intimate ways that directly engage mood and emotion. It echoes, refracts, travels and decays, traversing boundaries and permeating public and private spaces alike in complex ways that are difficult to predict and control. Whilst voice blurs boundaries between spheres coded variously as nature and culture by expressing raw emotions whilst simultaneously carrying complex symbolic communication in the form of spoken language. Music combines both these characteristics to varying degrees. Reviewing what he calls 'sonotropism' in western philosophy since the Enlightenment Scherzinger (2012, 350) argues that the un resolved tensions and contradictions between the apparently unmediated authenticities of raw sound and its civilizing possibilities as artful rational communication encourage a 'metaphysical valence in excess of the usual mediators of language, culture, and history' to the extent that the utopian, deconstructive and transformative potential of music and by implication sound is never thoroughly pursued. Yet in a range of more recent theory from the 1960s onwards, for example that by Lefebvre, Derrida, Chion, Kristeva, Deleuze and Ihde, sound and the sonic began to form an increasing focus for theorising. In terms of space and spatiality, such work is largely concerned with issues of directionality, measure, difference, embodiment and experience. These authors provide a set of rich sources for present day authors interested in the relationships between sound, space and place.

Drawing on this work in the context of more recent theorising by Dollar, Labelle, Nancy, Born and others this chapter argues that the sonic provides a rich terrain for thinking through spatiality. Sound is not an object or an entity in the conventional sense of the word but rather a set of processes and properties operating in and through other materials. Sounds are only recognisable as such in the moment of their making, unfolding elaboration, the sensing and the memory of that moment. The fugitive, fragile temporal qualities of sound are centrally implicated in the phenomenal qualities of sonic space and spatiality (Revell 2016). Thought of in this way sound produces distinctive experiences of space, it is a central component in imagining and remembering time and place, has distinctive material qualities yet at the same time demands an active practice or performance in order to bring it into presence. Voice offers a distinctively problematic terrain on which to examine the

qualities and implications of sonic spatiality. Sounds carry words whilst seeming to remain independent of them, writing seems to be developmentally more 'advanced' than orality. At the same time it seems to provide privileged access to a sonic expressivity which it seems to both surpass and erase. The idea of 'voice' embraces these ambiguities and the multiple histories which they trace. As the Lacanian scholar and musicologist Mladen Dollar (2006, 31) suggests:

[T]he voice appears to be the locus of true expression, the place where what cannot be said can nevertheless be conveyed. The voice is endowed with profundity by not meaning anything, it appears to mean more than mere words, it becomes the bearer of some unfathomable originary meaning which, supposedly got lost with language . In this context, voice can be understood as a complex socio-material assemblage, a set of physical sound-producing processes which are bound into both social relations and very complex nexus of cultural associations. Its distinctive spatiality is a marker of individuality, authorship, agency, authority and power, reflexive self-realisation and social reach.

This chapter begins examining in more detail some of the ways in which sound and space are theorised in social and cultural theory. It then moves on to examine the questions of sonic mediation raised most distinctively by voice as a means of communication. The Chapter then proceeds to examine Connor's conception of vocalic space drawing on a socio-material conception of voice. It explores some of the ways in which the ambiguities highlighted by Dollar (see above) are produced as a result of the spatial properties of sound as socio-material event.

Theorising Sound and Space

Until relatively recently sound as a medium has received little of the systematic treatment afforded to the textual and the visual. Even more elusive are any explicit engagements with notions of sonic spatiality. Most frequently the sonic has acted as a metaphoric vehicle when theorists account for aspects of other social phenomena as for example in Weber's figuration of the orchestra and symphonic music as an exemplar of rational spatio-temporal organisation. Questions of habit and experience in terms of bodily relationships with space can be found for example in the phenomenology of William James (1890, see Newman 2015) and perhaps most notably in writing by Merleau-Ponty (1962). His description of the 'organist' who is practiced and skilled in the execution of his music but is faced with an unfamiliar instrument to play opens on to a consideration of spatial attunement as the processes by which the performer adapts his routinised practice to an unfamiliar spatial context (Merleau-Ponty 1962, 146-7). The sonic as a mode for some kind of space of intersubjective communication connects a range of authors from Adorno's (1989, see also Leppert 2002) concern with the authenticity and revolutionary potentials of classical composition contrasted with popular culture to Attali's (1985 [1977]) argument that sound grounded in originary moments of communal co-productions and traditional ritual presages

social change. Attali examined these relationships in music through painting in what he called a cartography of sound. In this context, the notion of listening suggests a variety of routes into more systematic metaphorical engagements with the sonic and the spatial. Said adopted the notion of polyvocality as an organising principal as part of a cultural criticism which valorises the contingencies of geographical distribution over the temporal certainties of historical narrative. He explored the implications of this in a number of his later publications including *Musical elaborations* (1992), *Parallels and Paradoxes* (2002) and *Music at the Limits* (2008). De Groot (2010) shows how for Said polyvocality is linked to and deeply informed by the practice of musical counterpoint as a model for an ecumenical consciousness invoking sensitivity in responsiveness to others based in a grounded worldliness. The trope of the sonic as an ethical ground for engaging in the world is a reoccurring one. It is the perceived intersubjective qualities and possibilities of sonic space that have informed some of the more elaborate treatments of sonic spatiality ranging from Murray Schafer's (1994) conception of acoustic ecology (see Revill 2012) and Don Ihde's (2007 [1976]) phenomenology of listening or Barthes (1985) consideration of the grain of the voice through to Les Back's (2007) adoption of listening as a model for the conduct of social science. In this context the notion of voice and the ethical possibilities of polyvocality are particularly important.

As many recent authors note, the key to recognising the materiality of sound as more than simply a response to affective and reflective listening practice is to conceptualise it as spatio-temporal event. Perhaps the first academic consideration of sonic space as a process of making can be found in the work on auditory and acoustic space by anthropologist Edmund Carpenter and media theorist Marshal McLuhan in the late 1950s (Schafer 1994: 83), Carpenter, in particular was concerned with the phenomenological properties of sonic environments. Thus their characterisation of auditory space is recognisably familiar in terms of present day relational approaches to spatiality. For them auditory space has 'no favoured focus':

It is a sphere without fixed boundaries, space made by the thing itself, not space containing the thing. It is not pictorial space, boxed-in, but dynamic, always in flux, creating its own dimensions moment by moment. It has no fixed boundaries, it is indifferent to background. The eye focuses, pinpoints, abstracts, locating each object in physical space, against a background; the ear, however, favours sound from any direction (Carpenter and McLuhan 1973, 35-7).

Perhaps Carpenter and McLuhan's most radical insight was their assertion that where sound is concerned space is made and shaped by the qualities of sound itself. It is clear from Carpenter and McLuhan and subsequent phenomenological accounts of sound that the qualities and characteristics of sound and sonic experience question conventional and cartographic conceptions of space. Though Carpenter and McLuhan's account of the phenomenological qualities of sound have been widely recognised, their claim that, with sound, space is made by the thing itself, by, in and through the processes of making sound,

is only now recognisable in the context of other theoretical debates concerning relational conceptions of space as a profound conceptual move. Both Carpenter and McLuhan were concerned with cultural questions of language and communication and with this in mind the direct implications of their formulation for conceptions of voice are not difficult to trace. Spoken utterance might be thought of as an defining example of sound as spatiotemporal event moving from speaker to listener in a contingently evolving and elaborating communicative action.

The properties of sound, rhythm and music are central to the work of a number of theorists whose writings have proved important for those developing critical approaches to spatiality. Giles Deleuze, Michel Serres, Jon-Luc Nancy and indeed Henri Lefebvre amongst others all find important places in their work for questions of spatiality raised by the properties and practices of sound and rhythm. For Lefebvre's (2004) *rhythmanalysis*, rhythm, sound and particularly the practices of listening are central to an engagement with Lacan's psychoanalysis (Gregory 1995, 41, 1997). In this work attention to underlying rhythmical structuring is key to exposing regulatory spatial truths (Burgin 1996, Revill 2013). Both working alone and with his collaborator Felix Guattari, Deleuze also places rhythm in a formulation inextricably bound up with the sonic at the centre of his ontological understanding of the world. For Deleuze socio-material assemblages which organise as rhythmically coherent refrains (or rifs) connect, and remake the milieu of stratified organised worlds (see for example Deleuze and Guattari 1988). There are clear suggestions of a musical melodic conception of rhythm here. Music and art have been particularly important influences on Deleuze's thought and in a well known example he draws on the music of Olivier Messiaen composed in response to bird song as a key example of the processes of deterritorialisation, of 'becoming other' (Bogue 2003, 4, 13-31). For these authors attention to the rhythmic qualities of amplitude and frequency, periodicity, recurrence and intensity directs attention to the co-constitution of the space and time (Elden 2001, 818, 2004a, b). To this extent Lefebvre and Deleuze connect together the sonic and the rhythmic in pursuit of a topological spatiality which enfolds social and material properties in ways that begin to unpack Carpenter and McLuhan's earlier insightful assertion.

Vibration and the physicality of resonance form a second and key means by which much contemporary theory connects sound to rhythm in terms of spatiality. Nancy's (2007) work on listening practices develop a conception of the 'resonant subject' which feed in to his broader concern with the relationality of living together developed in for example *The Inoperative Community* (1991) and *Being Singular Plural* (2000). Here listening and the physicality of resonance and reverberation speak to conceptions of both material volume and socio-spatial organisation. In its concern with listening, Nancy's work occupies some shared ground with that of Michael Serres. Serres has been concerned with both the sensing subject and with the communicative practices which participate in the socio-material

constitution of worlds. For Serres the concept of noise suggests notions of both struggle and the pure multiplicities from which contingent order and organisation might be built (Serres 1982b, 51-55, 1995, 48-60). In this regard his conception of noise has some congruence with the underlying world of pure multiplicity in which Deleuze and Guattari's refrains play an organising and transformative role across the consolidations of strata. Serres' concern for the multisensory body is evident also in Nancy's figuration of the 'resonant subject' and shows some echoes of Lefebvre's concern with listening to the rhythms and regimes of bodily experience. However, Serres' (1982a, 1993, 2008) long standing concern with a world bound together by communicative practices suggests a greater capacity in his work to embrace the creative implications of sound and rhythm thought together in terms of the making of space and spatiality (Connor 2002a, b). His work has important implications for the properties of sonic mediation, sensation and sense making. This is important for a conception of sonic spatiality which moves beyond the duality of materials and bodies and allows some consideration of intermediation, the making, transmission and transformation of meanings. Serres' work is also a particular reference point for Connor's conception of 'vocalic space'.

The emerging field of sound or sonic studies is an important catalyst encouraging more sustained engagements with sonic spatiality. This wide-ranging field of work has shown how approaches and agendas grounded variously in technology, culture, social institutions and practice can be brought together to provide a more symmetrical and simultaneous focus in sound as a socio-material phenomena with very distinctive characteristics. The influence of social studies of science and technology has been important for developing thinking around sound production and reproduction technologies from concert halls to mp3 players. Amongst the most important recent work on sound and spatiality is the collection edited by Georgina Born (2013) which includes an important agenda setting and theoretically substantive introduction by Born herself. Born (2013) takes the ways in which sounds make and remake relationships between public and private realms as an important starting point for a critical social science approach to the relations between music, sound and space. She cites the 'veritable avalanche of scholarship devoted to the interconnections between sound and space as motivating factor for her collection (Born 2013, 4). Drawing on the work of Steven Connor, she says 'perhaps the most important distinguishing feature of auditory experience ... [is] its capacity to ... reconfigure space' (Born 2013, 3). Thus Born takes Connor's concern with sonic spatiality as an important starting point for studies of sound and sonic experience within social science. Important and welcome as this is, it seems to miss the radical qualities of Carpenter's earlier formulation of sonic spatiality which speak readily to current geographical debates concerning the theorisation of space.

A particular issue here and more generally in literature appertaining to sonic space is that ontological questions concerning the nature of sonic space and its making are difficult to separate from those concerning both the experience of sound and the ways in which sound

shapes our understandings of particular spatialities. It may be significant that Carpenter and McLuhan made their pioneering insights into the qualities of sonic space from the perspective of what was then a highly innovative and rapidly developing theoretical terrain of communications studies. The concept of communication places emphasis on both message and medium. However, where sound is concerned the way in which sound is always everywhere embedded in other materials and is brought into presence as the vibration of those materials whether hard or soft, air, water, wood, metal or flesh is particularly problematic in terms of any separation between medium, message, the processes of transmission and the substance of any sonic event or object. In the context of such entwined questions of experience and ontology, the next section of this paper takes seriously Carpenter and McLuhan's conception of space made in sound by focusing on the way these issues are problematized by the question of sonic mediation

Sound, space and mediation

As Connor (2000) suggests, the concept of voice like that of sound itself can only be understood through consideration of both its material and cultural properties and that the simultaneous mediation of these are central to the spatiality of voice and the making of vocalic space. Weidman (2015, 232) argues that whilst the material-sonic experience of voice – learning to gurgle, laugh, scream, speak, sing and to listen to others doing so – seem to be natural and universal, such experiences occur within culturally and historically specific contexts. Thus she claims that the sonic and material experiences of voice are never independent of the cultural meanings attributed to sound, to the body and particularly to the voice itself. Weidman argues that these aspects of voice are often treated differently in academic analyses. Where the sonic dimensions of voice are treated as carrier or context, the cultural communicative dimensions of authorship and authority are taken as having intrinsic and universal value (Weidman 2015, 233). Dollar (2006) echoes this assertion arguing that voice seems still to maintain the link with nature on the one hand, whilst on the other hand seeming to transcend language and its associated cultural and symbolic barriers. However as Rée (2000) argues such formulations have important spatio-temporal specificity. He shows how eighteenth-century thought endorsed the long standing link in western religious thought between spirituality and the voice as an expression of the deepest truths and universal laws. For enlightenment philosophy, Rée (2000, 64) suggests, the voice, 'is not only the centre of the world of sound, but also the expressive secret of the soul'. Such conceptions continue to be widely recognised and endorsed in both academic work and lay knowledges; they are evident in common conceptions valorising the sincerity of oral testimony, the authenticity of the creative expression and the democracy of the popular electoral voice. Yet the understanding of voice in sound as simultaneously medium, message and transmission always located as vibration in other materials renders voice very difficult to locate. This suggests an urgent need to explore the qualities of sonic mediation.

The question of sonic mediation is raised by Georgina Born (2013) and by Brandon LaBelle (2010) in rather different formulations of sonic space. As an artist and writer on sound culture LaBelle's study of what he calls 'acoustic territories' provides an imaginative journey through the sonic resonances of the city. Both Born and LaBelle share a conception of sounds and rhythms as actively productive of spaces and spatialities and that these spaces have multiply enfolded topological qualities that both challenge and compliment dominant ocular centred and Newtonian conceptions of space and time. Both are centrally concerned with the ways in which the sonic and the rhythmic together mediate relationships between public and private, self and other. Both develop their own particular take on its role mediating diverse material and social realms. At the same time both argue for an active sense of hearing rather than a passive sense of listening as fundamental to the transformative qualities of sonic spatialities. Where Born systematically brings together work from across the social sciences, LaBelle offers a creative if provisional take on sonic spatiality. Born's use of the term mediation, like LaBelle's use of the term 'association', suggests something of the role played by sound in connecting and remaking, the formation and reformation of spatial assemblages. Yet the term mediation in relation to sound remains frustratingly difficult to pin down.

Though, as Michael Chion (1999) claims, sound can be thought of as 'a cultural object constituted via an act of attention and naming (cited in Mermoz 2004, 233), it can equally be figured as a profoundly physical phenomenon which only exists when embodied in other material. Sound unlike light cannot travel through a vacuum and requires substantial matter, in the form of air, earth, water, organic or mineral materials to embody and give it presence. Sound forms an immersive medium through which worlds are experienced, at the same time the qualities of specific sounds shape and are shaped by worldly experience. To this extent sound as medium might easily be thought of as mediation. Yet the fragility and ephemerality of sound are also important factors. Because sounds are events, made and experienced in the processes of striking, sounding or resounding which decay in time and die away, the perception and understanding of sound registering with and in the listener has critical importance in the making of sounds as events in time and space. Thus the qualities of sound highlight the ambiguous multiple meanings of the term mediation in the formation of spatialities and spatial relations in ways which are not satisfactorily addressed by Born, LaBelle or other authors. In the case of sound, mediation can never be simply a matter of either transmission or translation but always involves a relational making simultaneously involving production, transmission, reception and interpretation through and within entities and materials. Sound is at once medium - the sensuous stuff through which the world is experienced; method - processes of resonance and the practices of embodied and reflexive engagement which engage the world; and modality - the structure or sensory register through which the world is engaged, connecting entities and animating experience in its meaningfulness (Revill 2016, 246). An approach to sonic spatiality which starts from Carpenter and McLuhan's premise that sonic space is made by the sound itself

rather than the space containing the sound needs to seek the 'thinginess' of sound as co-produced within each of these realms simultaneously.

In this context, Augoyard and Torgue (2005) are critical of both the idea of a 'Sound Object' with an independent existence separable within its own discrete space and the notion of soundscape as a more or less objective space containing sounds. Rather they conclude: firstly that 'no sound event, musical or otherwise, can be isolated from the spatial and temporal conditions of its physical signal propagation' and secondly, that 'sound is also shaped subjectively depending on the auditory capacity, the attitude, and the psychology and culture of the listener' (Augoyard and Torgue 2005, 4). The sense in which the production of sonic spaces suggest the co-dependence of media, method and modality results in a situation in which mediation can be found simultaneously in the physicality of produced sound waves, the shaping of that sound within the particular circumstances of its occurrence and in the receptivity and understanding of the listening ear. In the apparently hyper-relational world of sonic experience where sounds only seem to exist as within and through particularly delicate and ephemeral assemblage of materials practices and entities, mediation seems to be everywhere and nowhere. In this context and with a brief acknowledgement of both the Deleuzian concept of event and Merleau Ponty's phenomenology of perception Augoyard and Torgue develop a notion of sonic effects in order to problematise any simplistic relationships between sounds, their causes and products. For them:

... the sonic effect, sometimes measurable and generally linked to the physical characteristics of a specific context, was not reducible either objectively or subjectively. The concept of the sonic effect seemed to describe this interaction between the physical sound environment, the sound milieu of a socio-cultural community, and the "internal soundscape" of every individual (Augoyard and Torgue 2005, 9).

Augoyard and Torgue do not fully develop their idea of the sonic effect, rather they admit that their use of this notion is provisional and open to revision and clarification. The concept is useful because it holds in play the multiple domains of mediation in which sound has co-dependent and simultaneous presence yet ultimately the term may be unhelpful to the extent that a focus on 'effects' seems to place undue emphasis on the products and outcomes of sonic processes. In spite of the danger of reification, their formulation certainly points towards the ways in which sonic 'effects' might be thought of as a heterogeneous assemblage of processes, practices, bodies and entities which together mutually shape both perceiver and perceived. This work certainly contributes something to our understanding of the interrelated socio-material relationality producing and produced by sonic processes such as 'compression', 'envelopment', 'fade' or 'rallentando' such that they neither solidify into objects, dissipate as mere perceptual stimuli or are held in static networks as simple message carriers. From this position the idea of sonic effects may be used in a context that

is concerned with effectiveness, not in the sense of an ability to meet predetermined outcomes but rather one which is interested in the capacities, potentials, resources and actions by which entities and their relations are made, remade and transformed. To this extent Augoyard and Torgue's conception of sonic effect is congruent with Ingold's (2007) argument that mediation should not be thought of as the passive connection of two or more discrete entities but rather that we should think of mediation and by implication the term 'effect' as an intransitive verb, a process of ongoing transformation rather than a simple linking of A and B. This formulation is also sympathetic to an active co-dependence of sensing and sense making found in Nancy's (2007, 5) work on listening and Serres (1982a, 1993, 2008) work on communication. In this context, Connor's work on vocalic space in his cultural history of ventriloquism provides a useful basis to proceed in terms of exploring some of the particular socio-material qualities of sound which participate in the production of the distinctive characteristics of sonic spatiality.

Theorising Vocalic Space

In the introduction to his cultural history of ventriloquism the cultural studies scholar Steven Connor (2000, 12) points to what he calls 'the inalienable association between voice and space.' He suggests that the voice takes up space, in two senses. It inhabits and occupies space and it also actively procures space for itself. The voice takes place in space, because the voice *is* space. He expresses the wish that his work contributes towards what he calls 'an as yet insufficiently elaborated subtheme of the history of the social production of space, namely the conception of 'vocalic space'.' It is certainly true that humanistic and ethnographic social science has attributed high value to the perceived power of voice as oral testimonies to deliver rich accounts of tacit knowledge affective and embodied experience (see Back 2007, Revill 2016). The following two sub-sections explore Connor's conception of vocalic space in relation to other work by other authors taking a socio-material approach to sonic spatiality.

Speaking out: The concept of voice as a bridge between the sonic, the embodied and the expressive, poses a range of important questions in terms of the spatiality of sound's physical and experiential properties. Voice as a particular categorisation of sound can be understood as a complex socio-material assemblage, a set of physical sound producing processes which are bound into both social relations and very complex nexus of cultural associations. It is a marker of individuality, authorship, agency, authority and power, reflexive self-realisation and social reach. The notion of voice problematizes perceived separations between experience and meaning, because in the form of communicative utterance it brings together sound and language, affective expression and symbolically structured interaction both practically and conceptually. A focus on voice brings affective and reflexive together in assertions of local, regional and national sentiment and belonging. Theories of the individual, group identity and democratic process all share a conception of

voice as a sovereign expression of feelings, wants, desires and interests. Thus voice operates as a signifier of presence, meaning and purpose at a variety of geographical scales in ways which are widely accepted but often taken for granted. By coining the term vocalic space, Connor (2000, 12) wishes to highlight:

the ways in which differing conceptions of the voice and its powers are linked historically to different conceptions of the body's form, measure, and susceptibility, along with its dynamic articulations with its physical and social environments.

This characterisation of voice certainly resonates with the conception of voice as simultaneously 'nature' and 'culture', highlighted by Dollar, Rée and Weidman. Addressing this duality Connor (2000) understands 'vocalic space' as a socio-material assemblage mediating between the phenomenological body and its social and cultural contexts. He is particularly concerned with the ways in which the voice is held both to operate in and itself to articulate, different conceptions of spaces, as well as to enact the different relations between what he terms 'the body, community, time, the worldly and the spiritual'.

The sonic qualities of vocal expression produce distinctive vocalic spaces that highlight the co-dependencies of medium, method and modality, production, transmission, reception and interpretation discussed earlier. Though sounds and particularly those sounds coded as voices worthy of attention are often diffuse and pervasive, reverberating, resounding, creating complex senses of echo and decay, they are often experienced as singular, directional and focused. As Augoyard and Torgue (2005, 75) suggest in their discussion of the 'cocktail party effect' voices provide points of active focussed listening allowing the brain to select out particular sounds from the general hubbub and concentrate attention on them to the exclusion of others. The need to process sound and isolate and attend to particular component as for instance a voice which addresses us as individuals is closely related to the distinctive complexities of sonic spatiality. Sounds interact and mask each other high or low, loud or soft, incessant or fugitive. In spatial terms, heard sounds give embodied sensation to properties of depth, distance and proximity, suggesting feelings of clarity, delicacy and intimacy, transforming and animating the experience. Sounds mask, envelope, echo at a distance and reverberate deeply within bodies in ways which are specific both to its phenomenal properties and to historically constituted modes of listening, understanding and interpretation. These qualities of sound embodied in voice and voices lend particular kinds of density, texture and form to sonic space. At the same time these properties of sonic complexity provide sounds with the valence and mutability key to the contingency and vitality of sonic spatiality.

Augoyard and Torgue (2005) address the spatial complexity of sound through what they call the effect of metamorphosis. They define this as a perceptive effect generated by the unstable and changing relations between elements of a sound ensemble (Augoyard and Torgue 2005, 73). This is derived firstly from the instability of sonic structures perceived in time; and secondly the distinctiveness generated by specific parts of an ensemble in any

given sound composition (Augoyard and Torgue 2005, 74). The physical properties of sound are important in this respect. Where light waves mask each other becoming opaque on surfaces, sound waves constantly collide and combine in space (Rée 2000, 31). The result is that sounds always have what Rée (2000, 31-2) calls 'a special kind of complexity' making them inherently social and heterogeneous. Thus the philosopher Roger Scruton (1997, 13) claims that unlike vision the entire sound world is always present in our perception, 'if no sound is too loud, I may be able to hear all the [physically audible] contents of that world'. The human ability to discriminate and differentiate this heterogeneous sound world and tune in to a specific conversation amongst the multiplicity of other sounds (Augoyard and Torgue 2005, 28). Augoyard and Torgue (2005, 123) call this 'syechdoche' defined as the ability for someone listening to a complex sound ambience to prioritize one specific element through a form of selective listening. In this context as Brandon Labelle has shown, sonic spaces and by implication vocalic spaces are shared, conflictual, intimate, animate and energetic, combining points of focus with points of diffusion in ways that both contrast and compliment other sensory experiences of place. In this way vocalic space might be understood as inherently polyvocal and attention to individual voice always a matter of active attention.

Where sonic complexity is a basis for judgement prioritising between voices, meaningful communications and background noise it is also as a basis for discriminating between spaces of self and other. Connor claims that voice establishes me as an inside capable of recognising and being recognised by an outside. He says: 'my voice comes from the inside of a body and radiates through a space which is exterior to and extends beyond that body (Connor 2000, 6). Here Connor refers to the characterisation of sound as event which is central to Carpenter and McLuhan's assertion that sound is given form, substance, volume and location only as a spatio-temporal event. For Labelle like Carpenter and McLuhan, the spatial qualities of sound are intimately bound into the experience of sound and consequently its temporal structuring. The sense of sound as spatio-temporal event forms the basis for Labelle's conception of sonic mutability, arcs of rhythmic movement linking two points in time. In this sense of trajectory there are echoes of Scruton's conception of sonic transformation, but perhaps more directly Deleuzian ideas of rhythmic lines of flight:

Auditory knowledge is a radical epistemological thrust that unfolds as a spatio-temporal event: sound opens up a field of interaction, to become a channel, a fluid, a flux of voice and urgency, a play of drama, of mutuality and sharing, to ultimately carve out a micro-geography of the moment, while always already disappearing, as a distributive and sensitive propagation (LaBelle 2010, xvii)

The qualities of differentiation and aggregation associated with the processual sonic qualities of voice as sonic utterance generate both difference and transgression through movement. Thus like a game of 'Chinese whispers', a rumour moving through a crowd or a manifesto broadcast to the world, vocal events gather support and opposition, actors, agents and resources, new and reinforced meanings unevenly as they travel and transform

(Revill 2016, 248). Songs, shouts, cries or indeed radio or other broadcast and networked media gather and connect, creating constituencies, audiences, assemblies and publics spatially and temporally both proximate and at a distance (Waite, Ryan, and Farbotko 2014, Pinkerton and Dodds 2009).

Listening in: For Connor it is the spatial complexity of voice in the context of the trajectory of sonic events that leads to his assertion that together these produce a reflexive sonic space which holds together conceptions of inside and outside, self and other, thus he concludes (2000, 4-5): 'and yet because I am always apart from my voice that such participation is possible. To speak is always to hear myself speaking. Learning to speak depends upon being able to hear myself in this way.' For Connor this sense of reflexivity is more marked in voice than in other modes of perception and communication. In turn this orientates a sonic space of the body that Connor (2000, 4-5) suggests 'provides a dynamic grammar of orientation:

the voice always requires and requisitions space; the distance that allows my voice to go from and return to myself. The very possibility of a world coming and going, the fact that I am able to learn that my voice both comes from me and goes from me, may be programmed in part by the exercise and experience of my voice.

The trajectory of the voice as it articulates spaces of listening both displaces and situates senses of self. He says as I speak a set of complex spatio temporalities of the self are performed in which I seem to be situated in front of myself, yet at the same time leaving myself behind. Connor thus concludes, if my voice is out in front of me, this makes me feel that I am somehow behind it. As a kind of projection, the voice allows me to withdraw or retract myself.

The sense of vocal trajectory raises two further important qualities of sonic spatiality. Firstly, the quality of acousmatism is associated with the difficulties intrinsic to locating the specific source or point of production for sound. Secondly, that voices seem to have the capacity to touch at a distance. As originally formulated by Pierre Schaeffer and adopted by Michael Chion (Revill 2016, 249-250) (Chion 1999) the term acousmatic describes 'the noise which we hear without seeing what is causing it.' Origins for the term lie in the history of philosophy, the Acousmatics were the disciples of Pythagoras who followed the teachings of the great man for five years without being able to see him as he spoke concealed by a curtain. Thus the term has a special association with the properties of voice and speech (Dollár 2006, 60-61). The acousmatic voice is simply a voice whose source one cannot determine, whose origin cannot be identified, or cannot be placed. Augoyard and Torgue (2005, 130-131) understand acousmatism through the sonic effect of 'ubiquity'. They define ubiquity as the paradoxical perception of a sound that we cannot locate, but which we know intuitively has a localised source for its production. This sonic effect they argue is particularly apparent in reverberant locations built of hard materials such as squares,

streets, underground parking garages, halls and corridors. In these kinds of places where there is an increase in the relative number and intensity of reflected sounds to direct sounds, a single momentary sound can create a multitude of reflections and delocalized echoes. Such effects are also characteristic of for instance a shout or call in a crowd of people, bird and animal calls or insect noise in rural and natural environments such as woodland and open country where sonic permeability cannot be matched to available hidden or disguised visual stimuli.

Voices speak to us across time activating and animating memory whilst simultaneously problematising space. Voices are therefore often experienced intimately even within highly public contexts through the capacity for sound to shape sonic experience in the form of what Murray Schafer calls 'touch at a distance'. As Hendy says (2013, xiv), Schafer's notion 'captures perfectly the way that sound travels further than the length of an arm but arrives in someone's ear as a tangible thing, triggering a real emotional response'. The open and unselective nature of hearing renders the listening subject particularly vulnerable to the contingency and heterogeneity of sound. In this sense hearing shares with touch some of the haptic capacity for relatively direct and apparently uninhibited engagement with others and otherness. As Schafer (1994, 11) puts it:

Touch is the most personal of the senses. Hearing and touch meet where the lower frequencies of audible sound pass over to tactile vibrations (at about 20 hertz).

Hearing is a way of touching at a distance and the intimacy of the first sense is fused with sociability whenever people gather together to hear something special.

Drawing on Schafer's formulation, Hendy suggests that the 'touch' of sound is foundational to the ways it shapes experience socially, culturally and experientially. He goes on to outline, how the intersection of touch and sound is both more profound and more extensive than that of a simply physical bodily encounter. Once heard, sounds can sometimes seem to resonate in consciousness dominating thought processes apparently masking other thoughts and feelings whilst directing consciousness in what Ihde calls the auditory imagination (Ihde 2007 [1976], 131-6). In this way voices can touch intimately across great distances when the physical presence of sound as vibration is recreated electronically by radios and TV sets, headphones, loud speakers and sound systems.

For Connor (2000, 7) the sense of touch in sound opens up what he calls the essential paradox of voice. Here he draws on Serres (2008) account of the important role played by touch in the recognition of self presence and the identification of similarity and difference. Following on from the characterisation of voice as event he says: 'if my voice is mine [it is] because it comes from me, it can only be known as mine because it also goes from me.' He argues that there is no other feature of the self that is so defining precisely because there is no other feature of myself whose nature it is thus to move from me to the world, and to move me into the world. He suggests (2000, 9-10) that the sense of touch in voice is key to this experience. He argues that the normal conditions of hearing-oneself-speak are

conditions not only of monitoring, but also of pleasurable autostimulation. Thus for Connor pleasure is much more than auditory, consisting as it does in a rich composite of auditory and other sensory gratifications. It constitutes what he calls 'the prospect of a quasi-tactile self-caress':

As we listen to our own voice, we feel as well as hear its vibrations, feel the complex, self-caressing dance of tongue, palate, and lips, counterpointed with the pleasurable muscular rhythms of the breath being drawn in and released (Connor 2000, 10).

The Lacanian cultural theorist and musicologist Mladen Dolla (2006) explores further the paradox of voice discussed by Connor and shows how this produces ambiguous and contradictory spaces that might be understood as central to conceptions of voice. These spaces figure voice variously as opening up both spaces of origin and authenticity and the composite truths of politics and social science. He argues (echoing Connor) that the voice belongs to the body, yet (echoing Chion) he says that whilst voice emanates from the orifice of the mouth it also appears to be disconnected from the body. Its point of production and connection with the body (the larynx) is both hidden from us at the same time that the speaking subject seems to address us directly in sound. Voice is of the body, speaks for the body but is simultaneously detached, merely a resonance resounding and echoing from somewhere deep within. Thus for Dolla voice is always 'in search of an origin, in search of a body', always without a satisfactory resting place, without tangible points of contact or anchor in the body. The implication of this for the sonic spatiality of voice is that it is inherently fetishised and ambiguous always to some extent other, as sounds unfold and elaborate they are constantly reformulating and transforming the spaces of its active relationality.

Conclusion

Until relatively recently sound has constituted a neglected field for theorising spatiality. This chapter has shown how concepts drawn from social and cultural theory can provide resources enabling a more sustained engagement with sonic spatiality. Though many authors acknowledge and indeed invoke the distinctiveness of sonic space, it is only since the development of interdisciplinary sound studies that scholars have begun to adopt a critical approach to this distinctiveness and commenced the process of unpacking and elaborating the implications and consequences of its previously taken for granted assumptions. Grounded in this scholarship and drawing on Carpenter's innovative and provocative conception of space made by sound rather than simply space containing sound, this essay has argued for a conception of sound as a socio-material assemblage. Such assemblages are located simultaneously in the materials and practices of production, transmission and reception (hearing and listening). A consideration of sound brings into prominence key questions concerning the mediation of cultural and communicative processes. In this context the notion of voice as an expressive act carrying meanings, gestures and significations from body to body, individual to group, self to world, provides an

instructive example. Thus the chapter has focused on the notion of voice in order to explore aspects of the socio-material relationality of sonic spatiality. The notion of voice is a particularly important area for such work given the ways in which the humanities and social sciences valorise voice as a marker for individual and group self-recognition, identification and the expression of material, social and cultural interests.

The discussion of vocalic space has highlighted the ways in which sonic complexity renders all sound worlds more or less heterogeneous and polyvocal. Whilst the qualities of sound as event produce highly textured vocalic spaces which gather and muffle resonances as they travel. From this discussion it can be argued that all vocal events might be thought of as transformed rather than simply transmitted by the act of utterance. Yet voices continue to be heard as singular and as sources of authentic expression in spite of their inherent heterogeneity and self organising qualities. The extent to which voices exhibit qualities of acousmatism and touch at a distance helps to explain this phenomenon. The chapter has shown how this is central to what Connor understands as the essential paradox of voice and what Dollar has come to understand as the 'gap' opened up by voice between language and speech, sounding bodies and listening intelligence, expressivity and reflection, individuals and groups. Where acousmatism dislocates sound and questions points of origin and production, touch at a distance provides a deeply personal experience of vocal expression at its points of reception resonating in and with host bodies creating moments of intimacy, caress and command. In the case of voice, the sonic spaces created by the sense of gap highlighted by Dollar open up a wide range of possibilities for the figuration and imagining of voice. It encourages a sense of immediacy and by implication authenticity, causality and intentionality and enables the concatenation, mixing and blending of voices into single entities in ways that mute, inhibit and disguise complexities and conflicts. In this context, voice itself becomes a technology of aggregation, amplification and silencing. It is the product of spatial complexity and polyvocality rather than purification and sovereign individual utterance.

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