

Listening to the Archive: Historical Geographies of Sound

ABSTRACT – Sound is a fundamental dimension of human experience. However, its ephemeral nature poses specific challenges to historical geographers and other scholars concerned with the study of the past. The last two decades have nonetheless witnessed an increased interest in the spatialities of historical sounds and acoustic environments in geography and across the humanities by large. This article offers a brief overview of some of this work. In particular, it traces a cross-disciplinary move from the study and preservation of past soundscapes to the study of their shifting perceptions, as well as increased attention to the aesthetic and affective qualities of past sounds and their complex poetics and politics. Rather than another subfield to be reinvented by geographers, I suggest that sonic geographies of the past are to be better understood and approached as a dynamic platform for interdisciplinary dialogue and exchange.

KEYWORDS: sound, historical geography, soundscape, memory, acoustic architecture, geographies of radio

All echo of which so long has died away.

--Thomas Mann, *The Magic Mountain*

‘What becomes of music, speech and other sounds, natural and man-made, when they cease reverberating?’, asked David Lowenthal in the 1970s. This seemingly straightforward question embeds a fundamental paradox; a paradox that every historical geographer is called to face when venturing into the sonic dimension of past environments. Sound and time are intrinsically interrelated. Time is the medium of music, of narration, and of life itself. Conversely, sound signposts the flow of time—the regular ticks of the clock, the bronze cadence of the bells of the village church, the nostalgic melody of a carillon, the rhythmic pulse of our heartbeat all make us aware of the passing of time and of the connection between past

and present. And yet, as Lowenthal notes, 'to recover sounds of the past is an infinitely more difficult enterprise than to restore the visual images of previous landscapes' (1976: 15). Visual images are made to last. Sound, by contrast, is by nature fleeting and ephemeral.

The problem was identified by Thomas Mann in *The Magic Mountain* (1924), as he contrasted music and narration to the plastic arts. The former, the writer observed, present themselves as a sequence, as a flowing; the latter are 'complete in the present' (p. 541). As a result, we are surrounded by material relics of the past and we are certainly not short of visual and textual representations of bygone landscapes. Of sounds from the past, however, very little remains, and when it does (by way of recordings), it is by necessity sounds from a relatively recent past. On bygone sounds, on their constituency and their emotional charge, Lowenthal frustratedly concluded, 'little is known and less has been written' (1976: 15).

If the first half of this assertion might still hold true today, much has nonetheless been written since Lowenthal's article first appeared. Over the past fifty years (and the last two decades in particular), sound has increasingly animated the work of historical geographers and of other scholars vested in the study of the human past. While early work on past sounds and soundscapes (in which Lowenthal's contribution can be contextualized) came largely in response to modernity and the gradual disappearance of traditional soundscapes, more recent studies seem to have been driven by paradigmatic shifts and trends in geography and in the humanities by large. Emotional and sensory 'turns', the revival of phenomenological approaches, the search for new materialities, increased interdisciplinary dialogue, and more in general, a collective attempt at decentering the dominance of the visual and the textual can all be deemed responsible for the new surge of interest in sonic geographies and in sound by large.

Over the past decade, sound studies have established themselves as a growing interdisciplinary field concerned with re-describing 'what sound does in the human world and what humans do in the sonic world' (Sykes 2015: 7). Unlike scholars from disciplines like music or linguistics, sound studies scholars are not so much interested in pure sound, as in the sonic practices and in the cultural and physical milieus in which these are embedded, including past environments (Bull 2020; Sterne 2003). For example, acoustic archaeology, a branch of sound studies, specifically focuses on the sonic characteristics of ancient sites and explores their accidental or intentional function as 'resonance chambers or transmission media' (Mattern 2020: 225), as well as on shifts in the experience of these spaces (Blessner and Salter 2009).

Geographers have actively contributed to sound studies (see Bull 2020). Historical geographers' work on sound represents only a small proportion when compared to that of cultural geographers, particularly those who identify themselves as non-representational theorists (see Paiva 2018). As Lisa Hill observes, however, while the implications of non-representational theory have been usually thought out in terms of 'the here and the now', the past two decades have also seen a growing corpus of work engaged with more-than-representational historical geographies aimed at 're-animating geographies of the past' by way of sound (Hill 2015: 823). This work has developed alongside innovative studies in other humanistic disciplines spanning from English literature to environmental history and acoustic archaeology. This article attempts to map out some of this work and some of the main thematic and methodological threads underpinning it.

The literature I consider in the following pages engages with different types of human and non-human sounds, including voice, noise and music, among others. Each has its own characteristics and distinctive epistemological status. The notion of voice, for example, problematizes perceived separations between experience and meaning. In George Revill and John Gold's words, it 'draws together sound and language, affective expression and symbolically structured interaction' (2018: 1407). Noise, by contrast, is unwanted sound, or 'sound out of place' (Bijsterveld 2008). At the other end of the spectrum, music is carefully crafted sound usually conceived to elicit powerful emotional responses in the listener. Sound, in other words, is in no way a monolithic entity, but a complex, fluid and variegated force that, in its multiple incarnations, continuously shapes the spaces we inhabit and imagine.

While the study of each sound typology presents the scholar of the past with its distinctive challenges and peculiarities, some general trends can nonetheless be traced. The first section of the article, for example, charts a general shift from the study of past sonic environments towards their reception and, more recently, site-specific interventions aimed at re-enacting the past in the present. The second section focusses on the spatialities and materialities of sound in the context of these studies and, more specifically, of acoustic archaeology. The third section discusses the politics and geopolitics of past sounds, which seem to have dominated much of the recent work on sonic geographies of the past. I conclude with some reflections on the limits and challenges posed by these studies, as well as with potential avenues for further interdisciplinary investigation.

Lost sounds, memory and nostalgia

Sound comes and goes. It always passes by and vanishes. At the same time, however, sound also possesses a unique ability to trigger memory and create a deep sense of belonging. These qualities intimately bind sound with place—and with nostalgia. A tune, a fragment of the past, can indeed ‘revive the imagination of all our former life’ (Starobinski, cited in Lowenthal 1976: 20). It is no surprise that the most influential work on sound ecology was pioneered in the 1970s, at a moment of heightened concern with placelessness and sonic pollution, and of general disenchantment with modernity (Relph 1976). Most of this work was thus both driven and underpinned by a latent nostalgia for the sounds of earlier times and the desire to preserve their memory. Led by Raymond Murray Schafer, a Canadian composer and environmentalist, the World Soundscape Project, for example, aimed at capturing and mapping some of these lost sounds, or sounds bound to vanish. Between 1972 and 1975, Schafer and his team embarked in historical and contemporary surveys of soundscapes across Canada and in villages from five European countries. Their ethnographic study incorporated sound recordings, as well as elderly people’s memories of past sounds, from the creaking of horse-powered carts, to mariners’ echo whistling.

Barry Truax, whose ‘communicative model’ built upon and expanded Schafer’s work, explicitly contrasted these familiar sounds of the past to the soulless sounds of modernity. Although they may be distinctive, many neighborhood sounds, he noted, ‘seldom involve familiarity with the person producing the sound, given the transience of [modern] urban dwellers and the impersonality of many newer neighborhoods’ (Truax 2001[1984]: 20). Such sounds, Truax concluded, are more likely to be treated as annoyances than as sources of relevant information, as they were in the past. Recent work by urban historians has demonstrated the importance of communal sounds such as bell ringing in conveying specific information to early modern city and town dwellers. More significantly, these studies have shown how those people were not only surrounded by different sounds, but they also consciously listened for sounds that we normally tend to ignore and interpreted them differently; in other words, their auditory and cultural environment and their psychology were both different (Garrioch 2003; Upton 2007).

The concept of soundscape popularized by Schafer placed an emphasis precisely on this aspect, that is, on ‘how the environment is understood by those living in it’ (Truax 2001[1984]: 11). Technically, a soundscape is defined as any portion of the sonic environment as perceived by humans, much in the same way landscape is a portion of the land subjected to the gaze of a viewer. While the concept has been repeatedly criticized for its implicit analogy

with landscape, and thus for the imposition of a somewhat static visual vocabulary on an essentially different and more immersive type of phenomenon (Rodaway 1994; Ingold 2007), it has nonetheless enabled, and continues to enable, important insights into past worlds and shifting perceptions of those worlds (see, for example, Bijsterveld 2013).

As with landmarks, soundmarks (sounds in the soundscape specially regarded by a community) have historically helped shape local identities (Pistrick and Isnart 2013). Examples range from church bell ringing (Corbin 1999; Johnston 1986) to foghorns (Truax 2001[1984]; Renton 2001). More recently, soundmarks have also been used to illustrate how shifting perceptions and attitudes to sound are just as important as the changing nature of sounds themselves. In the words of Joanna Taylor, one era's noise might indeed become 'another's sound, or even another's silence' (2018: 383).

For example, from the late nineteenth century until the 1980s, the blast of the foghorn signposted everyday life in most coastal towns in the high Adriatic and across the Atlantic (della Dora 2022). Like a familiar soundtrack, it contributed to create a reassuring sense of place. Digital technology has nonetheless largely silenced these sounds. In many cases, foghorns' decommissioning caused the protests of communities who had grown emotionally attached to their melancholic bellowing. The irony is that those same sounds were originally targets of just as vocal protests. When foghorns were first introduced on the British Isles and elsewhere, coastal dwellers perceived their sound as gloomy, dismal, depressing, or simply disruptive (Allan 2018). To the following generations, by contrast, the bygone bellowing of the foghorn appeared pleasing and romantic, because it had the capacity to evoke the past context and take possession of it. And no matter this remembered past was idealized and distorted. As Truax notes, 'the mind discards irrelevant detail, hence the sound reverberates in memory' (2001[1984]: 29).

Sound scholars have therefore recently re-emphasized the importance of studying transformations in modes of listening to sounds and their cultural meanings (Bijsterveld 2008: 24). Shifting perceptions of modern humanmade sounds, especially industrial noise, have (unsurprisingly) received special attention, from Karin Bijsterveld's (2008; 2013) extensive work on mechanical sounds and noise abatement policies to perceptions of modern urban soundscapes, from Victorian Britain to early twentieth-century America (Picker 2003; Thompson 2004). Changing perceptions of natural soundmarks (or their absence) have nonetheless also aroused significant interest and generated a number of innovative studies, especially by environmental historians and literary scholars.

Peter Coates (2005), for example, discusses how specific sounds and silences historically marked different attitudes toward the American wilderness. Since the earliest colonial days, Coates argues, to the European and American ear the wilderness was both 'silent and howling'. The buzz of activity characteristic of frontier towns came as a relief to the lone traveller. These settlements were thus perceived as 'acoustic islands of safety' in the treacherous quiet of the wild. By contrast, it was precisely this silence punctuated with the sounds of nature that attracted Thoreau, Muir and other early advocates of the wild, as they fled the noise of the industrialized world.

More specifically, by the 1840s, the wolf's howl had become the keynote sound of the Western wilds. The extermination of wolves and its consequent silencing came to mark the taming of the frontier. Intriguingly, Coates shows, in the 1980s, the same howl became an icon for environmental organizations and a heritage to be protected and consumed by nature lovers. If today the bellowing of the foghorn triggers nostalgia for a romanticized maritime industrial past, the wolf's howl conjures up the longing for an equally idealized wilderness. For wilderness is no longer a silent (or howling) terra incognita interspersed with human sonic island refuges. By contrast, in the contemporary western imagination, it has become itself an island, or rather an archipelago, surrounded and threatened by the destructive noise of modernity.

Humanmade and natural sounds, however, have not always been perceived antithetically. In her evocative exploration of Romantic poetry's acoustic ecologies, Taylor (2018) highlights their co-habitation in Wordsworth's Alpine soundscapes. In Wordsworth's verses, the peaceful Lake District reverberates with the echoes of human voices, of the hound and horn, of the church tower bells. Unlike the harsh screech of the locomotive invading Thoreau's quietness, these sounds were assimilated into nature and deemed aesthetically appealing, as they spoke of a pre-industrial idyllic past. Yet, for the Romantics, sound triggered different temporalities; it could also connect the poet (and his readers) with deep time. In Wordsworth's poetry, Taylor comments, 'what seems like silence to the inattentive ear is, in fact, the ghostly language of the ancient earth that rumbles outside the limits of most human hearing' (2018: 392). Sound was central to Romantic landscape aesthetics, but it was also understood through theories of the picturesque and the sublime, as evidenced by contemporary travellers' accounts and their attraction to sonorous land features like waterfalls (Cole 2015). In this sense, if landscape was a 'way of seeing' (Cosgrove 1985), soundscape was a 'way of listening' likewise shaped by its specific cultural context and aesthetic conventions.

There is nonetheless something more ambiguous, immersive and visceral in sound that seems to transcend culture and meaning. It is these qualities, along with sound's unique ability to mobilize feelings of belonging and nostalgia, that cultural geographers are finding increasingly attractive. While environmental historians and literary scholars have been generally interested in shifting perceptions of past sounds, cultural geographers have tended to focus mainly on their affective re-activation in the present. For example, the last decade or so has seen the emergence of a body of work exploring the connection between sound, place and the memory of tragic events—from a Derbyshire village struck by the plague in the seventeenth century (Holloway 2017) to other villages swept away by flood in the 1950s (Hill 2015), or disrupted by the construction of a motorway (Butler 2008).

This work can be envisaged as a sort of more-than-representational development of the interest in landscape and memory that dominated the new cultural geography of the 1990s. At the same time, however, methodological experimentation makes it distinctive from previous work, as well as from the aforementioned studies on sound by environmental historians and literary scholars. While the latter rely almost exclusively on textual archival sources, cultural geographers have introduced phonographic methods (Gallagher and Prior 2014) aimed at creating immersive experiences and at re-activating the past in the present. Besides oral history and oral archival research (Mills 2017), these methods include, for example: impulse response techniques (Hemsworth 2015); soundwalks featuring site-specific memories (Butler 2008); 'resounding' performances creating an illusion of presence in historic landscapes (Holloway 2017); and other creative sonic interventions (Wilson 2006; DeSilvey 2010; Hemsworth et al. 2017). Reintroducing memories 'back into their geographical habitat' (Butler 2008: 11), these practices aim at new forms of engagement with public history, while at the same time attending to the affective and ambiguous qualities of sound.

The materiality and numinosity of past sounds

Not only is sound inherently temporal. It is also inherently spatial and corporal. Sound is both 'an immersive medium through which worlds are experienced' and 'a profoundly physical phenomenon which exists only when embodied in another material' (Jasper 2020: 117). Sound is produced by a vibrating object that radiates its energy through the air, or through another medium, in the form of compression waves. The waves propagate through the medium with varying speeds. For example, a denser medium where the molecules are closer

together (like water or metal) allows the energy to travel more quickly than through the air. Sound therefore requires matter to gain presence, but it also needs space to propagate. As it propagates, it 'structures space and characterizes place' (Smith 1994: 232). At the same time, sound is moulded by the specific physical setting in which it is embedded. The environmental setting 'clothes the naked pressure waves at birth by giving them a particular pitch, tone and reverberation' (Pocock 1989: 195).

Different topographies shape sound in different ways. For example, city, forest, meadow and fields all present distinct material conditions for its production and propagation. English and theatre scholar Bruce Smith commented on sound's interaction with these topographies in early modern England. Large tree trunks without much underground, he observed, would form 'a relatively resonant space, potentially full of echoes'. By contrast, 'meadowland, lacking any reflective surface, would form a relatively damped space', and so would fields (Smith 1999: 76-77). Buildings of early modern London, on the other hand, would form a relatively reverberant environment, whereas raving material would absorb street sounds. Humidity during the wetter months would have had the effect of further damping sounds.

At the other end of the spectrum, a mountainous topography amplifies and reflects sound, and the effects are especially notable in Romantic poetry. Taylor talks about an 'acoustic sublimity', whereby sound was experienced as 'something tangible through its interactions both with the region's geological forms and each listener's body' (2018: 384). The Lake District's distinctive topography encouraged visitors to engage with the landscape both visually and acoustically. Taylor recounts the experience of eighteenth and nineteenth-century travellers to the region and their fascination with its potential to generate powerful echoes. Echoes, she notes, allowed listeners to 'envisage sound' and expand their sense of the region's physical geography (pp. 394, 397). For this reason, firing cannons across the mountain lake became a popular tourist attraction. Rolling from hill to hill, the echoing sound of cannon fire allowed the mind to expand where the eye could not reach. It allowed the listener to penetrate parts of the landscape yet to be visited.

Sound's materiality and spatiality are nonetheless most palpable in dedicated indoor environments. The way in which past sounds would have been originally experienced in these 'acoustic containers', or indeed how architectural design was influenced by aural experience, has recently attracted much cross-disciplinary research. Work on historical acoustic spaces has begun to explore sound as a medium with a distinctive materiality, as well as phenomenal and cultural properties. Geographers of music, for example, have moved away from the study

of lyrics or musical practices to investigate music's material qualities, such as reverberation, amplitude and echo, and their relationship with its environmental settings (Jasper 2020: 1117). Sandra Jasper, for instance, used the innovative acoustic design of the Berlin Philharmonie as a lens to examine the relationship between sound, modernity and urban space, a theme that is also discussed by Emily Thompson (2004) in the context of early twentieth century America.

Archaeologists and acousticians working in the field of archeoacoustics have stretched the study of 'sonic containers' all the way back to the ancient world and even prehistory. Measuring impulse responses, standing waves and the reverberation times of archaeological sites, they showed how these spaces 'speak' in often unexpected and sophisticated ways (Mattern 2020). In tracing a history of aural spaces from the Upper Palaeolithic to the present, Barry Blesser and Ruth Salter (2009), for example, illustrate the deep symbolic and phenomenological connection between images, sounds and specific spaces ranging from caves to temples, amphitheatres and modern auditoriums.

Unsurprisingly, among the traditionally most studied acoustic containers are church buildings. In a pioneering study, architectural theorist Hope Bagenal and sound physicist Alexander Wood (1931), for example, showed the transformation of churches as aural environments after the Reformation. Wood features, including box-pews, galleries, choir screens and carvings, were purposely introduced to reduce reverberation. In this way, Protestants' new emphasis on preaching (as opposed to Catholic ritual) could be accommodated. More recent studies, such as Howard and Moretti's (2009) exploration of polyphony in Venice's counter-Reformation churches, have significantly advanced the study of acoustic architecture through the integration of sound measurement and choral singing, and thus triggered a host of new studies.

In particular, over the last few years, the sonic spatialities of churches have been objects of innovative research by Byzantine art and architectural historians, who, together with teams of sound engineers and professional chanters, have explored the complex interaction between the building, its visual art and sound. In the past, Byzantine churches were studied mainly as static architectural structures; these studies, by contrast, emphasise the need to consider the building together with liturgical performance, that is, its original *raison d'être*. While aural spatialities have been attended by a wider range of medievalists (Boynton and Reilly 2015), the study of churches as visual-sonic ensembles assumes special significance and poignancy in the Byzantine context. The Byzantines envisaged liturgies as a co-celebration of the earthly and heavenly realms and deemed the church the place of this

cosmic intermingling. Music played a special part in this co-celebration, as human and angelic voices mixed in more than a metaphorical sense (Antonopoulos et al. 2017; Ivanov 2008).

In her pioneering phenomenological study of Hagia Sophia, Bissera Pentcheva (2017) showed how the 'icons of sound' bodied forth through chanted services and architectural reverberation produced on worshippers an aural experience conducive of mystical transcendence. Sacred space was articulated precisely through the materialities and immaterialities of this visual and sonic spatial ensemble, which opened access to the 'celestial sound of angelic choirs'. The images and the light in this space were continuously experienced in what Pentcheva calls an 'aural envelope'. 'These aural designs sometimes consciously coincided with and amplified the effect achieved by the visual, as, for instance, when singers chant about the divine blessing and the acoustics and light in Hagia Sophia aggregate the bright sonic energy and light in the dome' (Pentcheva 2020: 2).

Pentcheva's study also illustrates the new opportunities offered by impulse response techniques coupled with digital technology. Chanting in Hagia Sophia has been strictly banned since the Ottoman conquest in the fifteenth century and its consequent conversion into mosque, and then again in 1934, when the mosque was turned into a museum by a secular Turkish state. The only way to activate the building's acoustics is therefore through virtual simulation (2020: 7). Other projects have focussed on more accessible, yet transformed, churches. For example, in 2014 a team led by the Byzantine art historian and archaeologist Sharon Gerstel measured the acoustic properties of eight Byzantine churches in Thessaloniki, northern Greece, in order to establish a possible correlation between architectural transformation and musical developments in the late Byzantine period. The project resulted in accounts of how sound, both chanted and spoken, was produced and experienced (Gerstel et al. 2018; Antonopoulos et al. 2017).

These and similar research projects come from a broader recognition that sound can bring (sacred) art to life, hence the importance of considering both in their dynamic and symbiotic relationship (Boynton and Reilly 2015). At the same time, these studies have the potential to open up new compelling avenues to historical geographers concerned with sacred space, its poetics and its numinous materialities. As Gerstel and her team comment, at the heart of such studies is after all 'the investigation of the fundamental role that sound plays in the experience of space—an experience that is sensory, emotional and transformative' (2018: 178).

The spatialized materialities of sound have also increasingly attracted the attention of historians of science and technology. Sound studies have thus extended from landscapes and

buildings to less obvious acoustic micro-containers such as the car and the human body. For example, Bijsterveld (2010) explored the paradox of how, between the 1930s and 1990s, the car, a noisy contraction and major source of acoustic pollution, gradually transformed its interior into a relaxing sonic bubble and controlled acoustic environment by way of car radio sets. In the context of eighteenth-century French medical practices, Ingrid Sykes (2012) discussed the conceptualization the human body as a resonant chamber whose health could be assessed by feeling and listening to its pulse. Physicians devised a notation system for transcribing different types of pulse and attempted their classification for diagnostic purposes. The desire to create a universal language of pulse, Sykes concludes, was inherently concerned with the materialities of sound and rested on the widespread belief among physicians and musicians that oscillations could indeed transform human systems.

The politics and geopolitics of past sounds

Other unconventional acoustic containers have been recently explored by historical geographers and social historians. In a fascinating study, Elin Jones (2020), for example, showed how eighteenth- and early nineteenth-century Royal Navy vessels were understood as built sonic environments that could be used to the advantage of dissenting mariners through the manipulation of space and sound. Seamen, Jones observes, ‘murmured, muttered, cheered, hissed’ as they congregated below the deck. In this way, they could express dissent while maintaining anonymity, and thus avoid punishment. Located above, the officers had to be quick in interpreting those aural signals, in order to prevent mutiny. Seamen, Jones concludes, ‘understood the power of their collective voices, as well as comprehending the acousmatic potential of the ship in orchestrating dissent’ (p. 72).

The subversive potential of sound and its disciplining in (and through) dedicated spaces is explicitly discussed by Katie Hemsworth (2015) in her compelling historical analysis of the Kingston penitentiary in Eastern Ontario, Canada. Drawing on Schafer’s concept of soundscape and its various components, Hemsworth traces the history of the silent rule system implemented in the penitentiary from its early days in the 1830s for almost a century, and the subsequent evolution of other disciplinary sonic technologies, including loudspeakers, hidden microphones and radios. These objects, Hemsworth argues, shaped the material environment and the soundscapes of historical prisons like Kingston’s and ‘continue to leave their mark on the sites and subjects of incarceration today’ (p. 18).

In different ways, Jones and Hemsworth's studies shed light on the historical complicity of sound (or silence) with surveillance and biopolitics. In both cases, human voices emerge as forces to be disciplined through psychological and physical violence. In the case of the Royal Navy mariners, collective noise acted as a shield for individual voices; in the case of Kingston's inmates, by contrast, human sounds breaking imposed silence were subject to physical punishment, regardless of their verbal (or non-verbal) content.

Speech and human voice have formed a significant focus of research for historical geographers concerned with the micro-politics of sound, from slaves' speech rights in the British West Indies (Ogborn 2011) to the asymmetrical power-relationships between early field-recordists and natives and their 'silences' (Rogalsky and Cameron 2017; Revill and Gold 2018), the role of salons and operas as sonic spaces shaping political sentiment in eighteenth-century France (Sykes 2015), or the contested moral geographies of sound and noise in mid twentieth-century England (Matless 2005; 1998). The human voice binds language to the body, but the nature of this connection is paradoxical, for the voice belongs to neither: as soon as it is uttered, it 'detaches itself from the body and leaves it behind' (Revill and Gold 2018: 1418). As with other sounds, human voices are energy propagating through space and matter; they are vibrations resonating 'in and between bodies' (p. 1409). Powered by modern technology, human voices can nonetheless transcend their physical reach and materiality. Converted through the radio into electromagnetic waves and then back into sound waves, human voices and other sounds have since the early twentieth century crossed continents and oceans, often expanding the politics of sound to a matter of global geopolitics.

The geopolitics of radio is indeed another emerging research area that has recently occupied both historical and political geographers, alongside communication and media historians (Weir 2014; Russo 2020). As with other sonic geographies, political geographers have envisaged in radio a potential corrective to the visual bias of critical geopolitics (Pinkerton and Dodds 2009). Historical studies have focussed, for example, on the role of radio in propaganda and international diplomacy, especially in the context of war, imperialism and decolonization, from British India and the Falklands conflict (Pinkerton 2008a; 2008b) to Mozambique under Portuguese rule (Power 2000). The historical role of radio in shaping national identities and imagined communities has also received consistent interdisciplinary attention (Scales 2016; Liebes 2006; Hilmes and Loviglio 2002), mainly thanks to its persuasive power and ability to invisibly penetrate multiple facets of everyday life (Pinkerton and Dodds 2009). Unlike other media, radio's blindness and sonic textures create a strange intimacy. In Wilkinson's words, 'uniting people electromagnetically, radio

creates a set of intersecting communities' (2017: 138), besides shaping physical spaces, such as the acoustically controlled car interiors studied by Bijsterveld (2010), for example.

Radio has also been discussed in terms of its subversive potential. A notable example is the pirate radio stations broadcasting, since the 1960s, in the extra-territorial waters off the coasts of Britain to challenge BBC monopoly and transmit new popular music for a young, resistant audience. Kimberley Peters (2011; 2012; 2018) showed how space was crucial to the production, consumption and regulation of these unauthorized radio transmissions. More in general, Peters' work demonstrates the difficulties of governing an invisible medium such as radio waves. Like sound, radio waves do not respect borders. 'The regulations guiding radio transmissions in the United Kingdom were based on territorial, place-based, grounded areas of jurisdiction'. Yet, Peters observes, 'electromagnetic waves do not respect cartographic lines that delineate spaces into national areas' (2018: 28).

While extra-territoriality was a precondition to the very existence of pirate stations, the materiality of the elements in which sound was crafted and travelled also played its part. DJs on Radio Caroline, for example, exploited the depth and dynamic power of the ocean to craft unique audio experiences for their audience back on dryland, and thus shape specific imaginations of 'being out at sea'. The paradoxical condition of the ship, 'a closed and small space', but at the same time 'one that existed in the open ocean', was key to the intimate soundscapes forged by the pirate broadcasters and brought into the bedrooms of thousands of young listeners (p. 41). While much of the writing on sound and soundscapes has sought to challenge, or indeed, move beyond the visual, Peters' work shows how sound can in fact shape vision in the form of powerful mental images. 'Listeners could imagine DJs out on a rough sea through the very qualities of sound—not just what was said, but the fleeting, ephemeral, dynamic and unstable qualities of the sea carried with broadcasts' (p. 61).

Sonic qualities and liminal sovereignties withstanding, all these examples focus on governmental and commercial radio stations broadcasting human speech and music (Douglas 1999). Historical analysis thus dwells mostly on programming content, on space, and on the affective impact of human voice on its audience. There are, however, non-vocal and non-musical radio signals that have historically played just as an important role in shaping collective imaginations and deserve further attention. It suffices here to recall, for example, the affective charge produced by the flickering Morse signals first aired by Marconi and his assistants across the Channel and the Atlantic, and the consequent elevation of science to 'international spectacle' (Pinkerton 2019: 71). More dramatically, the degree of geopolitical anxiety and public wonder that the disembodied mechanical beep of Sputnik's radio beacon

caused in the western hemisphere when it first orbited in 1957 by far surpassed the impact of any verbal propagandistic transmission (della Dora 2022). Such stories tell us much about the affective power of mechanical sounds, even in their most unassuming forms.

Sound trajectories

Sound is a fundamental dimension of human experience. Familiar soundscapes help create a sense of place. Unfamiliar sounds can generate both excitement and anxiety. Other sounds can elevate the spirit to the realm of the divine. Others yet can be, and have been, used to exert psychological and physical violence. Perceptions of the same sound can be shaped by different cognitive frameworks, as well as by space itself. Muffled by distance, the same sound that in our proximity is perceived as intrusive and unpleasant noise can turn into a comforting soundmark (Bijsterveld 2013: 13). As ‘something that is at once tangible and intangible, material as well as disembodied’, but also inherently spatial and visceral, deeply poetic and potentially political, sound provides both a peculiar path through history and a valuable conceptual tool for historical geographers (Sterne 2003; Hemsworth et al. 2017). Unlike vision, sound does not dwell on surfaces; it offers a sensory key to human interiority (Ong 1982). As such, sound can prompt novel and deeper insights into the past worlds historical geographers seek to penetrate.

As many of the authors mentioned in the previous pages have emphasized through their work, in its manifold typologies and manifestations, sound is both immersive and fluid. Unlike the field of vision spread out in front of us, sound is diffused around us (Sykes 2015). Its experience feels ‘less stable than a point of view which can be fixed’ (Cole 2015: 60). It defies cartographic logics. Sounds therefore open to polyvocality. They have the potential to help retrieve past human feelings, as well as unheard, or even silenced, stories. But forgotten sounds can also re-animate places. Attending to the poetics of sound is therefore just as important as considering its complex and oft-contested politics. Thinking of sound’s properties as vibrational relationships, for example, can ‘expand conceptions of space, time, and rhythm’ (Hemsworth et al. 2017: 148).

Listening to the archive nonetheless presents its own constraints and challenges, as it has been repeatedly stressed by sound studies scholars over the past two decades. To start with, before the twentieth century, very little of the sonic past was physically preserved for later historical analysis. One can attempt at reconstructing older soundscapes from written

archival records, or in the case of buildings, through the measurement of their acoustic properties. Any reconstruction, however, is bound to be speculative, given the impossibility to recreate the aural experience of the original listeners, or even 'presume what it was like to hear the past' (Sterne 2003: 19). This raises a deeper problem than accuracy: we inevitably listen to the past with modern ears, regardless of how faithful a sound reconstruction is. For example, Blesser and Salter argue, it is unlikely that a non-religious modern listener experiences heaven on earth upon entering a cathedral, as his medieval predecessors did (2009: 68).

This limit has nonetheless encouraged sound scholars to critically interrogate themselves on what it means to listen to the past in the present (Bull 2020). It has also triggered a cultural history of sound reproduction technologies and critical reflection on the objectification and commodification of sound (Sterne 2003; Thompson 2004; Bijsterveld 2008; Suisman and Strasser 2010). This research has special resonance for scholars engaging with sound archives, since recorded sounds are by definition objectified sounds which belong to the past and 'lost a bit of their ephemerality' (Sterne 2003: 1). Indeed, as Sterne observes, it is no surprise that sound recording followed innovations in other nineteenth-century industries like canning or embalming (p. 26). Reproduction removes sounds from its original context; it de-territorializes it in the same fashion as a sacred artefact removed from a church and placed in the aseptic space of a museum showcase. It is to the historical geographer and sound scholar the difficult task of re-contextualizing it and re-activating its complex micro-geographies. Finally, critical reflection on the archive has triggered innovative readings of textual sources that go beyond simple description and analysis, and consider instead the 'staging' and rhetoric of sound-related stories (Bijsterveld 2013).

While important steps have been recently undertaken, including the aforementioned interdisciplinary move from the study of soundscapes per se towards their shifting perceptions and performative aspects, historical geographies of sound remain a relatively new and still expanding area of study; in general, historical geography scholarship remains overwhelmingly textual and visual—and soundless. In asking which sort of openings sound waves might bring to historical geography, Hemsworth, Cameron, Rogalsky and Greer (2017) have suggested some possibly important trajectories, including, for example, the role of listening in decolonizing processes, historical analyses of field recording practices, and the study of recordings of extinct or endangered species.

To these, one might add other themes that have traditionally concerned historical geographers, such as the history of science and exploration, for example. Save for few

exceptions in cognate fields (Rich 2016; Allan 2018; Bijsterveld 2019), the sounds of science and exploration and their entanglement with power and wonder is an avenue that remains uncharted by historical geographers, and surprisingly so, given their longstanding and important contribution to the history of science (Livingstone 2003). As previously mentioned, mechanical sounds and scientific listening practices are attracting increasing interest from science and technology historians. Historical geographers could enrich this area of studies with a distinctively spatial perspective.

Another area that could benefit from interdisciplinary dialogue, especially with art and architectural history and acoustic archaeology, is the study of sacred space. The role of sound (and silence) in the making of sacred space remains an area that deserves investigation and can significantly contribute to our understanding of past environments and the perceptions of those environments—from humanmade sites of worship to specific landscapes bearing cross-cultural associations with the sacred (like deserts and mountains, for example).

To these otherwise well-trodden yet still largely 'silent' avenues, renewed attention to sound can bring further depth and vibe. However, rather than yet another subfield to be reinvented by geographers, this brief review has tried to suggest, sonic geographies of the past are to be better understood and approached as an area for interdisciplinary encounter, dialogue and collaboration.

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