

This article was downloaded by: 10.3.98.93

On: 17 Jan 2019

Access details: *subscription number*

Publisher: *Routledge*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place, London SW1P 1WG, UK



Edited by Michael Bull

The Routledge Companion to Sound Studies

Bull Michael

Found in translation: recording, storing and writing of sounds

Publication details

<https://www.routledgehandbooks.com/doi/10.4324/9781315722191-24>

Birdsall Carolyn

Published online on: 02 Nov 2018

How to cite :- Birdsall Carolyn. 02 Nov 2018, *Found in translation: recording, storing and writing of sounds from: The Routledge Companion to Sound Studies* Routledge

Accessed on: 17 Jan 2019

<https://www.routledgehandbooks.com/doi/10.4324/9781315722191-24>

PLEASE SCROLL DOWN FOR DOCUMENT

Full terms and conditions of use: <https://www.routledgehandbooks.com/legal-notices/terms>

This Document PDF may be used for research, teaching and private study purposes. Any substantial or systematic reproductions, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The publisher shall not be liable for an loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

FOUND IN TRANSLATION: RECORDING, STORING AND WRITING OF SOUNDS

Carolyn Birdsall

This chapter deals with a notion that is prevalent in sound studies, namely, of sound as “lost.” It involves the suggestion that sound is underappreciated or even repressed, and needs to be “found,” and thus recovered, reconstructed and re-evaluated in scholarly analysis. This discourse implies that sound is a phenomenon that is ephemeral, lacking or incomplete, as a state of affairs that prompts a search for its traces, inscriptions or other means to reveal sonic and auditory phenomena. By implication, the possibility of being found heralds sound as rich, fascinating and compelling. This narrative is sometimes connected to essentialist definitions of sound (and hearing) pitted in opposition to image (and seeing). These oppositions, which Jonathan Sterne (2003: 15) dubs the “audio-visual litany,” tend to reinforce universalist and crude simplifications of sound in terms of temporality, immersion, interiority and affect.

The persistence of the lost and found narrative attached to sound should be contrasted to the establishment of sound studies as a recognized and recognizable field (or interdiscipline), in the wake of a “sonic turn” during the course of the 1990s and early 2000s. In a survey of scholarship in sound (culture) studies, Michele Hilmes (2005) noted that the idea of sound as an emerging or burgeoning area of enquiry had already been evident for over a century. This argument acts as a cautionary reminder to scholars not to reproduce polemics that exaggerate sound as ignored, repressed or lost (Smith 2004). While sound scholarship can be found in a variety of disciplinary contexts, and is not restricted to a particular method or approach, during recent years the field has undergone various forms of institutionalization, as evidenced by graduate study programs, faculty hires and numerous dedicated scholarly organizations, networks and platforms. Another mark of how sound – and its study – has found institutional approval and academic interest is not only via special issues and single-authored monographs; the growth of publisher interest is also suggested by an abundance of readers, handbooks, keyword collections and research companions, which includes the present publication (cf. Bull and Back 2003; Sterne 2012; Pinch and Bijsterveld 2011; Novak and Sakakeeny 2015; Papenburg and Schulze 2016).

With this background in mind, the following chapter will cover various attempts to “find” sound, not only as the result of formal method, but also in the myriad of ways in which sounds – past and present – are uncovered, retraced or reconstructed. The first section will deal more generally with sound recording and playback, and how sound has been understood as discoverable within multiple media modalities and formats. It will therefore examine the pre-dominant means by which sound has been represented or rendered through acts of translation.

The second part reflects on the storage of sound, but also related processes of ordering and classifying sound, forms of canonization and institutional frameworks and infrastructures that allow for some sounds – over others – to be preserved and made accessible. The final part raises questions about sound as writing: not only in terms of its inscription or notation, but also how specific professional and applied contexts produce particular languages and epistemologies of sound. As such, all three sections will allow for observations as to how sound has been variously conceived through a series of discursive, institutional and aesthetic-technological frameworks.

Recording, representation, (re)mediation

Within sound studies, there has been a substantial scholarly attention to the mechanical invention and functioning, as well as the promotion, dissemination and adoption of sound recording and playback devices. In the history of technology, Thomas Edison's announcement of his phonograph invention has led to the year 1877 being enshrined as the "birth" of sound recording. More recent scholarship has challenged this narrative's focus on a single year and inventor, emphasizing instead the co-existence of other devices in the same period. Leon Scott's phonautograph, for instance, has been investigated as a device that also created recordings of sounds – as visual traces – but did not facilitate their playback.

The commercial presentation of sound recording and playback envisaged a range of possible applications for Edison's "Talking Machine," ranging from educational instruction and the dictation of audio letters to the collection of family "albums" and the voices of famous figures (Edison 1878). Such applications draw attention to the way in which new technologies like the phonograph were framed or made legible according to existing cultural practices of writing and copying in the late nineteenth century (Sterne 2003; Schwartz 2014). The subsequent, mass dissemination of sound recording and playback devices has been outlined, for instance, as bound up with notions of liveness, authenticity and fidelity (Thompson 1995). The social construction of the home phonograph around 1900, furthermore, drew on the existing gender-typing of consumption and domestic music performance, a process in which the phonograph served as "a translation device between the private and public spheres" (Gitelman 2004: 71).

In the public realm, a common articulation about phonography was that it captured segments of time, but also allowed for manipulations of time (through speed, delays) and subsequent redistribution of sounds across space (Levin 1990). The act of recording, moreover, was framed in terms of inscribing a wide range of sonorities; while Friedrich Kittler has noted this prevalent discourse of "all sounds," his account of phonographic inscription refers to an opposition between sounds and unsounds (Kittler 1999). The phonograph not only recorded sounds, but the device also produced its own forms of interference that could be heard in playback. The presence of noise was, of course, a major issue for those engaging with transmission technologies of sound telegraphy, telephony and, later, radio broadcasting. For both transmission and inscription technologies, then, the noise (or feedback) produced by the technological device has been cited as influential for medium-specific sound conventions and aesthetics (Campbell 2006).

On the whole, sound recording – whether by means of phonographic inscription, tape or other formats – has been understood as a studio art (Schmidt Horning 2013). In addition to commercial, studio-based recording, this ability to manipulate parameters (such as speed and volume) has also figured strongly in artistic responses to phonography. Notable examples of twentieth-century production examined in sound studies scholarship include avant-garde art

and music composition; experiments with playback, loudspeakers and loudness; and new styles of vocal presentation and cultural expression (see, for instance, Moholy-Nagy 1926; Kahn 1992; Weheliye 2005; Kelly 2009; Devine 2013). In a similar vein, advancements in recording techniques (for example multi-track stereo, Dolby Noise reduction) and formats (for example LP, CD, mp3) have provided new tools for shaping sound in recording and post-production (Katz 2010; Frith and Zagorski-Thomas 2012).

A conventional historical timeline, therefore, would probably cite a historical shift from mechanical recording to electrically powered recording devices, and subsequent improvements in recording techniques, sound quality and standardization (for example recording and playback speed). This narrative is sometimes used to imply that sound recording – particularly in the later shift from analogue to digital recording – has continued to gain an ever-improving quality of fidelity and realism (Mowitt 1987; Evens 2005). A useful argument, in this context, can be gleaned from James Lastra’s argument to discontinue using the term *sound reproduction* – due to its assumption of an exact copy – in favor of *sound representation* (2000: 123–153). This emphasis paves the way for a longer historical view of competing discourses of realism, as well as efforts to achieve sound fidelity via particular techniques of representation (see also Wurtzler 2007: 229–250).

In the study of media technologies, there has been a shift away from examining any one particular medium to a concern with constellations or ecologies of media (Thorburn and Jenkins 2003). Tom Levin (2010), for instance, has urged for scholars to develop longer genealogies of sound inscription as occurring across multiple devices prior to Edison’s 1877 invention; his media archaeological view on the long history of recording includes examples of voice capture dating back to China in the seventeenth century. An interest in the connections between media, as facilitating cross-media aesthetics has also been fueled by the work of David Bolter and Richard Grusin (2000). Their concept of “remediation” offers a means to consider how television and digital platforms re-use content – such as feature films, music, broadcast recordings – produced by other media. In this vein, some scholars have taken phonographic recording as a site for considering intermedial phenomena – for example, styles of media performance in popular, spoken-word LPs – that have tended to be ignored in related disciplines like media, theatre and popular music studies (Smith 2011).

The remediation concept, therefore, provides a means – also in sound studies – to consider partial connections between media. Much attention has been devoted to intermedial aesthetics produced in the context of the 1920s to 1940s, as prompted by both commercial interests and aesthetic experimentation between sound recording, radio, cinema and early television (Wurtzler 2007; Forman 2012; Birdsall 2014). Meanwhile, other scholars have reinvestigated the early period of “silent” cinema from the vantage of sound recording to challenge a film historiography that neglects the place of the phonograph (Feaster and Smith 2009; Altman 2007). Another effort is to consider how recorded sound has historically interacted with print media, whether in the form of synesthetic interplay with the visual arts, in exchange with the newspaper and illustrated magazines, in audiobook remediations of print literature, or inscriptions of sound in Braille books (Currid 2006; Rubery 2011).

Lastly, the formation of modern recording media and sound aesthetics has been explored in terms of sounds produced via the materiality of urban built environments, indoor spaces and technological infrastructures (Thompson 2004; Blesser and Salter 2009; Mattern 2013). More generally, such work raises questions about the traces left by recorded sound in various arenas of culture and media representation, and its potential to play a role in popular memory (Kenney 2003); it is to these more specific themes for lost and found sound – concerning storage, preservation and accessibility – that the next section will turn.

Storage, preservation, access

In recent years, there has been a growing scholarly attention to formal and informal processes by which recorded sounds have (or have not) been actively stored, preserved and made accessible. Where the previous section discusses processes of capturing and representing sound, in various formats and forms, this section is more interested in selection, canonization and possibilities for access and re-use.

One of the key means by which the storage and distribution of recorded sound has been historically communicated to others is through lists, catalogues and discographies. In the commercial, recorded music industry, which emerged in the last decades of the 1800s, both major and smaller record companies released catalogues listing their phonograph and gramophone recordings (Day 2001; Gronow and Saunio 1998; Symes 2004). Another means for ordering these recordings – at the time of and since their release – is via matrix numbers and factory codes, which provide additional information about their production context to collectors and archivists. In professional practice, library and archive catalogues have been a predominant tool to keep track of their collections, but also classify them according to author, title, year, genre and other categories.

Apart from private and research-based collections, there are only a few early examples of entire institutions devoted to the collection of sound recordings. One of the more well-known forerunners is the establishment of the *Phonothèque nationale* in Paris in 1938, which formed part of the *Bibliothèque Nationale* and established a national legal deposit (Hoffmann 2004: 416–417). In the case of the United States, the Library of Congress (LoC) has played an important role in collecting commercial and culturally significant sound recordings from the 1920s onwards, as well as the later commissions granted to figures like John and Alan Lomax to record a variety of singers and oral storytellers for the LoC's *Archive of Folk-Song* (now *American Folklife Center*).

Some institutions have tended to focus only on recordings from their own national or regional recording industries; other institutions – like the *British Institute of Recorded Sound* (BIRS), formally constituted by Patrick Saul in 1948 – have proclaimed to have an interest in collecting all recorded sound. Despite such claims, institutions like BIRS maintained a strong preference for musical repertoire, preferring to collect classical music and opera recordings, including radio broadcasts (Saul 1956), while resisting and sometimes refusing to acquire popular music genres such as Jazz, Pop and Rock.

While there were prior discussions about the organization of sound recordings, the formal development of a professional discourse can be identified with the establishment of the *International Association of Music Librarians* (IAML) in 1949, under the auspices of UNESCO in Geneva. Within the framework of IAML, subcommittees were formed to address common issues of international standards for classification and preservation methods, but also addressing different types of collections, from sheet music and musical instrument to radio sound archives and music recordings. In the case of radio archiving, national broadcasters in Europe had already pioneered collections of live and pre-recorded programs from the late 1920s onwards, but it was only in the post-war era that most of these archives were subject to active institutional policies and preservation strategies (Birdsall 2016). A more specific organization devoted to the archiving of sound recordings emerged from the IAML subcommittees in 1969, with the formation of the *International Association of Sound Archivists* (IASA). In the US context, a group of librarians and private collectors officially formed the *Association for Recorded Sound Collections* as a joint endeavor in 1966 (Hoffmann 2004: 1020–1021).

In recent years, there has been a renewed awareness of the role of archivists in determining what comes into archives, priorities for preservation and restoration as well as selecting, deleting

and discarding parts of collections (Cook 2011). In response, commentators have called for a renewed awareness of the ways in which archivists participate in processes of selection, particularly in foregrounding significant recordings, which often reveals a conservative bias towards the voices of famous people and recognized historical events. Such recordings are often presented as valuable and desirable recordings for interested stakeholders in the present, as presented to radio and filmmakers, museums, researchers and for educational purposes. While there is a longer history of audio-visual media as teaching aids in the classroom, the selection and presentation of sounds for research and educational purposes was further encouraged by institutions dedicated to multimedia and documentation resources between the 1950s and 1970s, such as the National Audio-Visual Aids Library (in the UK), Institut für Film und Bild in Wissenschaft und Unterricht (in West Germany) and Stichting Film en Wetenschap (in the Netherlands).

Processes of canonization can be attributed to the re-use of sound recordings in radio, television, film and digital media production. In some contexts like North America, re-use of recordings in the first decades of broadcasting were variously promoted or prevented due to commercial interests or copyright regulations (Kompere 2004). Both in broadcasting and film, it is not only selections or full-length recordings that have been re-used, but also shorter clips or sound bites, with the sounds used for station idents or studio logos (opening credits) operating as identifiable brands. Idents and jingles tended to be stored on disc or tape, and held in station sound libraries, but as forms of commercial advertising have rarely been treated as valuable objects of scholarly study (Taylor 2012; Seay 2016).

The storage and preservation of recorded sound is thus connected to the value attached to it, and the status of a recording as a stand-alone archival record or part of a particular collection (with well-documented provenance). The archival status of a record can also vary depending on whether it is held in a national or research archive, a corporate archive or in a private collection. This status may also depend on the type of recording (voice, music, sound effects), whether it is a master or copy, and the carrier it is held on (disc recording, tape, digital format). All of these factors can play an influential role in determining the extent to which (digital) preservation is considered necessary or urgent, with format obsolescence one of the most frequently articulated challenges for audio preservation (for example The British Library's 2015 funding campaign "Save our Sounds"). The proliferation of digitized recordings and online access to media collections – through YouTube, the Internet Archive and other platforms – has prompted discussions of increased democratization and challenges to the "gatekeeping" function of archivists (Noordegraaf 2010). At the same time, online curation has come to play an increasingly significant role in sound archival outreach and educational efforts, such as the recent European Sounds portal (Franzen 2016).

In the current archival landscape, there has been an increased circulation of – and interest in – recordings that have not necessarily passed through formal archives, from bootleg and amateur recordings through to various forms of user generated content (UGC). In this context, the proliferation of remix techniques, along with what has been dubbed "retromania" (Reynolds 2011), has fueled an interest in compiling and recycling of archive and found footage materials (Baron 2014). These processes of circulation have also led to experiments with "viral" sounds (Cooper and Piard 2015) and investigations as to the "spreadability" of recorded sound in contemporary media culture (Jenkins, Ford and Green 2013). In other areas, committed groups and fans of musical subcultures have taken preservation and access matters into their own hands by forming DIY archive initiatives (Brandellero et al. 2013).

One interesting aspect to the recovery of "lost" sounds is the affirmation of users on the basis of shared memory. The online initiative by former student Brendan Chilcutt, entitled the Museum of Endangered Sounds, has generated a lot of buzz, since it not only includes the highly

designed signature sounds of consumer electronics and gaming devices, but also sounds that were by-products of technical processes, such as dial-up Internet. The appeal to shared memory and memorialization has also served as a motivating force for NPR's "Lost & Found Sound" program, with a special series devoted to the sonic traces of 9/11 in 2001 drawing on first-person accounts, voice-mail messages and personal archives (www.sonicmemorial.org). The recovery and reorganization of ephemeral sounds has also prompted a raft of sound and soundscape mapping projects, in which the locatedness of past and present sounds are geo-tagged onto maps of particular cities, if not whole countries (Ouzounian 2014). In other cases, the unearthing of lost sound has generated an interest in forgotten media practices that are rarely held by archives and circulate in private collections and Internet sites eBay; one such form is creation of acoustic letters, for which the scholar Tom Levin has established the online Phono-Post resource (www.phono-post.org).

In general, scholars have noted a conservative impulse motivating some past archival initiatives, which may also lead to present-day preservation initiatives to operate under a default mode by which audio recordings of famous politicians, intellectuals, artists and the cultural elite are given priority (Müske 2010). Given the relationship between recorded sound, official history and memory processes, critical perspectives on how recorded sound is stored, preserved and made accessible are needed. The biases and absences in the archival record require scholars of recorded sound to remain attentive to absences of archives and the frequent denials on the basis of race, ethnicity, class, gender, sexuality, disability and mental health. These exclusions have been challenged in numerous and repeated efforts to generate oral history archives with audio recordings documenting personal experience and testimony, along with the preservation of community radio recordings, such those held by the Pacifica Radio Archive (Birdsall, Parry & Tkaczyk 2015). While problematic audio collections require further interrogation of implicit power relations, attempts at "close listening" to these archival recordings in the present often face incommensurable challenges to interpretation (Hoffmann 2015). The following section will pick up on such questions of interpretation and knowledge production, with particular attention to how specific professional and applied context produce particular understandings of and practices with sounds, both wanted and unwanted.

Writing, language, epistemology

One of the more common observations articulated in sound studies literature is that academic publication culture – primarily based on written language – poses significant challenges to the task of accounting for the acoustic properties and dimensions of sound. While the written word is posited as a translation or even a flattening of sound (Schafer 1994 [1977], Bull and Back 2003), the English language, for instance, has been deemed as highly biased towards visualist thinking, further hampering the project of developing sound vocabularies (Jay 1993). In film and media studies much robust work has been done not only to redress visual(ist) theory by formulating tools of sound theory, with challenges to established notions of purely visual or sound media (Mitchell 2005) and efforts to account for audiovisuality in media culture (Chion 1994; Richardson, Gorbman and Vernallis 2013). Such research, moreover, has placed an emphasis on audience reception, with a particular attention to the role of sensory engagement and embodied perception of audiences/users (Bull 2000). The implicit purpose of sound studies to dislodge the primacy of vision may, in fact, come at the expense of other modalities of perception, with Deaf Studies acting as a corrective by acknowledging more diversity in the experience of sound, language and music, often via tactile and visual processes of communication and perception (Friedner and Helmreich 2012).

An important intervention in sound studies research has been the attention to the significance of science and medicine in the co-formation of modern listening practices and understandings of sound in the nineteenth century and earlier. Jonathan Sterne's work has occupied a prominent place in these discussions, given his attention to a broader set of developments that produced modern sound culture. In particular, Sterne observes the rise of "techniques of audition" – framed in terms of reason and scientific rationality – as the basis of professional knowledge in modern medicine and sound telegraphy (2003: 31–177). Listening – via the stethoscope or telegraph – served as a "symbol of modernity, sophistication, skill, and engagement" (2003: 137), prefiguring the creation and use of sound reproduction technologies in the second half of the nineteenth century. In Emily Thompson's study of the emergence of modern architectural acoustics in the decades after 1900 (2003), the desire to rationalize and control sound in performance spaces is contextualized against the backdrop of noise abatement campaigns in urban environments.

In recent decades, historians of science and technology have also worked to challenge the assumption that science and medicine have, for centuries, relied on vision, display and the image in the production of scientific knowledge (Jones and Galison 1998; Wise 2006). In this vein, the turn to the embodied dimensions to scientific research has allowed for an increased understanding of the contribution of nonvisual senses and conditions of "epistemic cultures" (Knorr-Cetina 1991). One of the key developments recognized by researchers is the role of sound in laboratory-based research from the early nineteenth century onwards, particularly in the emergence of interdisciplinary research on acoustics and hearing, which involved disciplines such as physics, phonetics, ethnology and musicology (Kursell 2008: 3). Subsequent research has elaborated on this historical development from the mid-eighteenth century onwards, specifying cross-pollinations between music and science in the development of new research conditions (for example soundproof rooms), methods (for example sonification), instruments (for example tuning forks, oscillators) and instrumentation (Hui, Kursell and Jackson 2013).

Such work has paved the way for a broader understanding of sound in science and in specific research cultures in laboratory settings (Mody 2005). In the introduction to the *Oxford Handbook of Sound Studies* (2011), co-editors Trevor Pinch and Karin Bijsterveld stress that the individual contributions provide a broader scope of how "sonic skills" are not only figured in the lab, but also in the field, the clinic, the design studio, in domestic and online environments. Pinch and Bijsterveld's discussion of listening skills and knowledge production lays out a tripartite focus, namely on how professionals have acquired these skills and used their ears in their work; how these forms of listening were operative in knowledge production and instrument development; and the ongoing contestation of listening skills as a valid "way of knowing" (2011: 11–12). Against the background of ongoing debates about the relationship between visual and sonic skills, Sterne and Akiyama (2011) have criticized ongoing assumptions of sensorial separation, noting the contingencies by which techniques of sonification and auditory display prepare data for particular senses. They argue that "the articulations between particular senses and kinds of sense data are incredibly weak ... [suggesting] that sound scholarship must be ever more vigilant about that shifting border between the sonic and nonsonic" (Sterne and Akiyama 2011: 547). Recent debates in the history of science have also sought to thoroughly deconstruct visual representation, and have urged scholars to account for the temporal processes of interaction and knowledge formation in scientific practice (Coopmans et al. 2014).

Of particular interest for sound studies is the particular languages used to describe and make sense of sounds. In the crossover between sociology of technology and sound studies, scholars have been attentive to the ways in which practitioners and enthusiasts of sound have developed their own, specific means of verbalizing particular sounds. In the case of professional discourse,

scholars have paid particular attention to the recording studio as a site for the development of “hands-on techniques” and “tacit” knowledge amongst sound engineers, particularly as this field established formal training schools from the 1980s onwards (Porcello 2004; Schmidt Horning 2013). The formation of sonic skills in a particular area of practice can often draw on existing expert language and techniques, as has been observed in the competing principles articulated by radio engineers and telephone engineers working in the new field of synchronized sound film in the late 1920s and 1930s (Lastra 2000). Amateur groupings, such as “sound hunters” in the 1950s and 1960s, also developed popular knowledge of sound in developing their own aesthetic preferences and descriptive categories for the sounds they wished to record (Bijsterveld 2004). Marc Perlman (2004) has studied a particular strand of audiophilia – with its roots in post-war home electronics consumption – in which a group of primarily middle-aged men have idealized “hi fi” audio, creating particular uses, values and ways of talking about sound. Nonetheless, the privileging of masculinist sound cultures in recent historiography has been critiqued by Tara Rodgers (2015), whose research on early synthesizers has stressed the significance of uncovering alternative narratives of sound production practices.

We can also trace a number of research fields in which phonographic sound recording in the late nineteenth century was not only an epistemic tool, but was also constitutive to the foundation of knowledge in a field. In ethnography and ethnomusicology, phonography was understood as providing a data source, in similar terms to other indexical media like photography, while also complementing researchers’ linguistic and music notation (Brady 1999; Ames 2003). Access to such collections, however, is often limited by the fragility of many recording formats and playback devices, and the degradation of recordings, whether held on disc, tape or digital formats. Much of the knowledge of such recordings has been communicated through paper documentation, which require scholars to become aware of the production of these recordings in tandem with bureaucratic and clerical work cultures, and thus mediated via particular genres and forms of “paper knowledge” (Gitelman 2014).

Given that many Western research fields were or became colonial disciplines, it is also essential to problematize such research in the context of imperial control and frontier expansion, with implicit hierarchies and forms of mishearing or misinformation underpinning knowledge production (Ochoa Gautier 2014; Lange 2015). In a similar vein, anthropologist Steven Feld has argued against a predominance of Western epistemologies of sound, with his own fieldwork with Kaluli communities in Papua New Guinea revealing a society grounded in “acoustemology” or a sound-based epistemology (Feld and Brenneis 2004). More generally, Feld has been critical of Eurocentrism in sound studies, and its predominant emphasis on media genres and sound technology, arguing instead for “more ‘sound agency studies,’ more ‘sound actant studies.’ I want more ‘sound plural ontology studies,’ or ‘sound relationality studies.’ Or ‘sound companion species studies.’” (Feld and Panopoulos 2015). In another critique of sound studies, Gus Stadler (2015) has argued that the chapters selected for readers and handbooks seem to claim a lack of bias. Stadler argues that this is evident in the general use of terms like “the listener,” “the ear” and “the voice” that mask an implicit reproduction of whiteness, and has the potential to “guarantee the coherence and legibility of a field in formation” (2015: n.p.).

Such comments serve as an important caution to sound scholars to reflect on one’s own blindspots and assumptions, and to push the boundaries of the normative tendencies within the field. Working in a similar vein to Feld, some recent scholarship has sought to take questions of agency, relationality, sonic materialism and plural ontologies as a point of departure (Born 2005; Chow and Steintrager 2011; Cox 2011). By way of a broad response, this chapter has called for the importance of acknowledging the persistent discourse in which sound has been presented in some contexts as the academy’s repressed other or as an intellectual savior to established

disciplines. Its departure point was therefore the persistent notion of sounds as lost cultural phenomena. In response, the three sections have outlined key aspects – namely, the recording, storage and writing of sounds – that reveal sounds and how they are conditioned by discursive, institutional and aesthetic-technological frameworks. To this end, it has insisted on the means by which sounds have been remediated, reconstructed and re-used, and thus found in translation.

References

- Altman, R. (2007) *Silent Film Sound*. New York, NY: Columbia University Press.
- Ames, E. (2003) “The Sound of Evolution,” *Modernism/Modernity* 10(2), pp. 297–325.
- Baron, J. (2014) *The Archive Effect: Found Footage and the Audiovisual Experience of History*. New York, NY: Routledge.
- Bijsterveld, K. (2004) “‘What do I do with my Tape Recorder...?’: Sound Hunting and the Sounds of Everyday Dutch Life in the 1950s and 1960s,” *Historical Journal of Film, Radio and Television* 24(4), pp. 613–34.
- Birdsall, C. (2014) “Sound Aesthetics and the Global Imagination in German Media Culture around 1930,” in D. Morat (ed.) *Sounds of Modern History: Auditory Cultures in 19th- and 20th-Century Europe*, London: Berghahn, pp. 256–77.
- Birdsall, C. (2016) “Sound in Media Studies: Archiving and the Construction of Sonic Heritage,” in J. G. Papenburg & H. Schulze (eds.) *Sound as Popular Culture: A Research Companion*, Cambridge, MA: MIT Press, pp. 133–48.
- Birdsall, C., Parry, M. & Tkaczyk, V. (2015) “Listening to the Mind: Tracing the Auditory History of Mental Illness in Archives and Exhibitions,” *The Public Historian* 37(4), pp. 47–72.
- Blessner, B. & Salter, L-R. (2009) *Spaces Speak, Are You Listening?: Experiencing Aural Architecture*, Cambridge, MA: MIT Press.
- Bolter, J. D. & Grusin, R. A. (2000) *Remediation: Understanding New Media*, Cambridge, MA: MIT Press.
- Born, G. (2005) “On Musical Mediation: Ontology, Technology and Creativity,” *Twentieth-Century Music* 2(1), pp. 7–36.
- Brady, E. (1999) *A Spiral Way: How the Phonograph Changed Ethnography*, Jackson, MS: University Press of Mississippi.
- Brandellero, A., et. al (eds.) (2013) “Special Issue: Popular Music as Cultural Heritage,” *International Journal of Heritage Studies* 20(3), pp. 224–40.
- Bull, M. (2000) *Sounding Out the City: Personal Stereos and the Management of Everyday Life*, Oxford: Berg.
- Bull, M. & Back, L. (eds.) (2003) *The Auditory Culture Reader*, Oxford: Berg.
- Campbell, T. C. (2006) *Wireless Writing in the Age of Marconi*, Minneapolis, MN: University of Minnesota Press.
- Chion, M. (1994) *Audio-Vision: Sound on Screen*, New York, NY: Columbia University Press.
- Chow, R. & Steintrager, J. A. (2011) “In Pursuit of the Object of Sound: An Introduction,” *differences* 22(2–3), pp. 1–9.
- Cook, T. (2011) “‘We Are What We Keep; We Keep What We Are’: Archival Appraisal Past, Present and Future,” *Journal of the Society of Archivists* 32(2), pp. 173–89.
- Cooper, P. & Piard, M. (2015) “Can Audio Go Viral? NPR Launches Audio Experiment on Facebook,” accessed 1 June 2016 at www.npr.org/sections/thisisnpr/2015/12/17/459372755/can-audio-go-viral-npr-launches-audio-experiment-on-facebook.
- Coopmans, C. et al. (eds.) (2014) *Representation in Scientific Practice Revisited*, Cambridge, MA: MIT Press.
- Cox, C. (2011) “Beyond Representation and Signification: Toward a Sonic Materialism,” *Journal of Visual Culture* 10(2), pp. 145–61.
- Currid, B. (2006) *A National Acoustics: Music and Mass Publicity in Weimar and Nazi Germany*, Minneapolis, MN: University of Minnesota Press.
- Day, T. (2001) *A Century of Recorded Music: Listening to Music History*, New Haven, CT: Yale University Press.
- Devine, K. (2013) “Imperfect Sound Forever: Loudness Wars, Listening Formations and the History of Sound Reproduction,” *Popular Music* 32(2), pp. 159–76.
- Edison, T. A. (1878) “The Phonograph and Its Future,” *The North American Review* 126(262), pp. 527–36.
- Evens, A. (2005) *Sound Ideas: Music, Machines, and Experience*, Minneapolis, MN: University of Minnesota Press.

- Feaster, P. & Smith, J. (2009) "Reconfiguring the History of Early Cinema Through the Phonograph, 1877–1908," *Film History: An International Journal* 21(4), pp. 311–25.
- Feld, S. & Brenneis, D. (2004) "Doing Anthropology in Sound," *American Ethnologist* 31(4), pp. 461–74.
- Feld, S. & Panopoulos, P. (2015) "Athens Conversation," accessed 1 June 2016 at www.stevenfeld.net/interviews.
- Forman, M. (2012) *One Night on TV is Worth Weeks at the Paramount: Popular Music on Early Television*, Durham, NC: Duke University Press.
- Franzen, R. (2016) "European Sounds: An Interface into European Sound Archives," *Sound Studies: An Interdisciplinary Journal* 2(1), pp. 1–4.
- Friedner, M. & Helmreich, S. (2012) "Sound Studies Meets Deaf Studies," *The Senses and Society* 7(1), pp. 72–86.
- Frith, S. & Zagorski-Thomas, S. (eds.) (2012) *The Art of Record Production: An Introductory Reader for a New Academic Field*, Aldershot: Ashgate.
- Gitelman, L. (2004) "How Users Define New Media: A History of the Amusement Phonograph," in D. Thorburn & H. Jenkins (eds.) *Rethinking Media Change: The Aesthetics of Transition*, Cambridge, MA: MIT Press, pp. 61–79.
- Gitelman, L. (2014) *Paper Knowledge: Toward a Media History of Documents*, Durham, NC: Duke University Press.
- Gronow, P. & Saunio, I. (1998) *International History of the Recording Industry*, London and New York: Cassell.
- Hilmes, M. (2005) "Is There a Field Called Sound Culture Studies? And Does it Matter?" *American Quarterly*, 57(1), pp. 249–59.
- Hoffmann, A. (2015) "Introduction: Listening to Sound Archives," *Social Dynamics* 41(1), pp. 73–83.
- Hoffmann, F. (ed.) (2004) *Encyclopedia of Recorded Sound*, vol. 1.: A-L., New York and Oxon: Routledge.
- Hui, A., Kursell, J. & Jackson, M. W. (2013) "Music, Sound and the Laboratory from 1750–1980," *Osiris* 28, pp. 1–11.
- Jay, M. (1993) *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought*, Berkeley, CA: University of California Press.
- Jenkins, H., Ford, S. & Green, J. (2013) *Spreadable Media: Creating Value and Meaning in a Networked Culture*, New York: New York University Press.
- Jones, C. & Galison, P. (eds.) (1998) *Picturing Science, Producing Art*, London: Routledge.
- Kahn, D. (1992) "Introduction: Histories of Sound Once Removed," in D. Kahn & G. Whitehead (eds.) *Wireless Imagination: Sound, Radio, and the Avant-Garde*, Cambridge, MA: MIT Press, pp. 1–29.
- Katz, M. (2010) *Capturing Sound: How Technology Has Changed Music*, Berkeley, CA: University of California Press.
- Kelly, C. (2009) *Cracked Media: The Sound of Malfunction*, Cambridge, MA: MIT Press.
- Kenny, W. H. (2003) *Recorded Music in American Life: The Phonograph and Popular Memory, 1890–1945*, New York, NY: Oxford University Press.
- Kittler, F. A. (1999) *Gramophone, Film, Typewriter*, trans. G. Winthrop-Young & M. Wutz, Stanford, CA: Stanford University Press.
- Knorr-Cetina, K. D. (1991) "Epistemic Cultures: Forms of Reason in Science," *History of Political Economy* 23(1), pp. 105–22.
- Kompare, D. (2004) *Rerun Nation: How Repeats Invented American Television*, New York: Routledge.
- Kursell, J. (ed.) (2008) *Sound of Science / Schall im Labor: 1800–1930*, Berlin: Max Planck Institute for the History of Science.
- Lange, B. (2015) "Poste restante, and Messages in Bottles: Sound Recordings of Indian Prisoners in the First World War," *Social Dynamics* 41(1), pp. 84–100.
- Lastra, J. (2000) *Sound Technology and the American Cinema: Perception, Representation, Modernity*, New York, NY: Columbia University Press.
- Levin, T. Y. (1990) "For the Record: Adorno on Music in the Age of its Technological Reproducibility," *October* 55, pp. 23–47.
- Levin, T. Y. (2010) "Before the Beep: A Short History of Voice Mail," in N. Neumark, R. Gibson & T. van Leeuwen (eds.) *Voice: Vocal Aesthetics in Digital Arts and Media*, Cambridge, MA: MIT Press, pp. 17–32.
- Mattern, S. (2013) "Ear to the Wire: Listening to Historic Urban Infrastructures" *Amodern* 2, at <http://amodern.net/article/ear-to-the-wire>.
- Mitchell, W. J. T. (2005) "There are No Visual Media," *Journal of Visual Culture* 4(2), pp. 257–66.
- Mody, C. M. (2005) "The Sounds of Science: Listening to Laboratory Practice," *Science, Technology & Human Values* 30(2), pp. 175–98.

- Moholy-Nagy, L. (1926) "Musico-Mechanico, Mechanico-Optico," *Anbruch* 8, p. 401.
- Mowitt, J. (1987) "The Sound of Music in the Era of its Electronic Reproducibility," in R. Leppert & S. McClary (eds.) *Music and Society: The Politics of Composition, Performance and Reception*, Cambridge: Cambridge University Press, pp. 173–97.
- Müske, J. (2010) "Constructing Sonic Heritage: The Accumulation of Knowledge in the Context of Sound Archives," *Journal of Ethnology and Folkloristics* 4(1), pp. 37–47.
- Noordegraaf, J. (2010) "Who Knows Television? Online Access and the Gatekeepers of Knowledge," *Critical Studies in Television* 5(2), pp. 1–19.
- Novak, D. & Sakakeeny, M. (eds.) (2015) *Keywords in Sound*, Durham, NC & London: Duke University Press.
- Ochoa Gautier, A. M. (2014) *Aurality: Listening and Knowledge in Nineteenth-Century Colombia*, Durham, NC: Duke University Press.
- Ouzounian, G. (2014) "Acoustic Mapping: Notes from the Interface," in M. Gandy & B. Nilsen (eds.) *The Acoustic City*, Berlin: Jovis, pp. 164–73.
- Papenburg, J. G., & H. Schulze (eds.) (2016) *Sound as Popular Culture: A Research Companion*, Cambridge, MA: MIT Press.
- Perlman, M. (2004) "Golden Ears and Meter Readers: The Contest for Epistemic Authority in Audiophilia," *Social Studies of Science* 34(5), pp. 783–807.
- Pinch, T. & Bijsterveld, K. (2011) "Introduction: New Keys to the World of Sound," in T. Pinch & K. Bijsterveld (eds.) *The Oxford Handbook of Sound Studies*, Oxford: Oxford University Press, pp. 3–39.
- Pinch, T. & K. Bijsterveld, (eds.) (2011) *The Oxford Handbook of Sound Studies*. Oxford: Oxford University Press.
- Porcello, T. (2004) "Speaking of Sound: Language and the Professionalization of Sound-Recording Engineers," *Social Studies of Science* 34(5), pp. 733–58.
- Reynolds, S. (2011) *Retromania: Pop Culture's Addiction to Its Own Past*, Basingstoke: Palgrave Macmillan.
- Richardson, J., Gorbman, C. & Vernallis, C. (eds.) (2013) *The Oxford Handbook of New Audiovisual Aesthetics*, Oxford and New York: Oxford University Press.
- Rodgers, T. (2015) "Tinkering with Cultural Memory: Gender and the Politics of Synthesizer Historiography," *Feminist Media Histories* 1(4), pp. 5–30.
- Rubery, M. (ed.) (2011) *Audiobooks, Literature, and Sound Studies*, New York and London: Routledge.
- Saul, P. (1956) "The British Institute of Recorded Sound," *Fortes Artis Musicae* 3(2), pp. 170–73.
- Schafer, R. M. (1994 [1977]) *The Soundscape: Our Sonic Environment and the Tuning of the World*, Rochester, VT: Destiny Books.
- Schmidt Horning, S. (2013) *Chasing Sound: Technology, Culture and the Art of Studio Recording from Edison to the LP*, Baltimore, MD: Johns Hopkins University Press.
- Schwartz, H. (2014) *The Culture of the Copy: Striking Likenesses, Unreasonable Facsimiles*, revised and updated edition, Brooklyn, NY: Zone Books.
- Seay, T. (2016) "Sonic Signatures in Record Production," in J. G. Papenburg & H. Schulze (eds.) *Sound as Popular Culture: A Research Companion*, Cambridge, MA: MIT Press, pp. 347–53.
- Smith, B. (2004) "Listening to the Wild Blue Yonder: The Challenges of Acoustic Ecology," in V. Erlmann (ed.) *Hearing Cultures: Essays on Sound, Listening and Modernity*, London: Berg, pp. 21–41.
- Smith, J. (2011) *Spoken Word: Postwar American Phonograph Cultures*, Berkeley, CA: University of California Press.
- Stadler, G. (2015) "On Whiteness and Sound Studies," *Sounding Out!*, accessed 1 June 2016 at <https://soundstudiesblog.com/2015/07/06/on-whiteness-and-sound-studies/>.
- Sterne, J. (2003) *The Audible Past: Cultural Origins of Sound Reproduction*, Durham, NC: Duke University Press.
- Sterne, J. (ed.) (2012) *The Sound Studies Reader*, New York, NY: Routledge.
- Sterne, J. & M. Akiyama (2011) "The Recording that Never Wanted to be Heard and Other Stories of Sonification," in T. Pinch & K. Bijsterveld (eds.) *The Oxford Handbook of Sound Studies*, Oxford: Oxford University Press, pp. 544–60.
- Symes, C. (2004) *Setting the Record Straight: A Material History of Classical Recording*, Middletown, CA: Wesleyan University Press.
- Taylor, T. D. (2012) *The Sounds of Capitalism: Advertising, Music, and the Conquest of Culture*, Chicago, IL: University of Chicago Press.
- Thompson, E. (1995) "Machines, Music, and the Quest for Fidelity: Marketing the Edison Phonograph in America, 1877–1925," *The Musical Quarterly* 79(1), pp. 131–71.

Found in translation

- Thompson, E. (2004) *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933*, Cambridge, MA: MIT Press.
- Thorburn, D. & Jenkins, H. (eds.) (2003) *Rethinking Media Change: The Aesthetics of Transition*, Cambridge, MA: MIT Press.
- Weheliye, A. G. (2005) *Phonographies: Grooves in Sonic Afro-Modernity*, Durham, NC: Duke University Press.
- Wise, M. N. (2006) “Making Visible,” *Isis* 97(1), pp. 75–82.
- Wurtzler, S. J. (2007) *Electric Sounds: Technological Change and the Rise of Corporate Mass Media*, New York, NY: Columbia University Press.