

Personal listening pleasures

Tim Wall and Nick Webber

Birmingham City University

tim.wall@bcu.ac.uk | nick.webber@bcu.ac.uk

Music consumption in the early twenty-first century has increasingly been mediated through distinctive technologies of listening such as headphones, car radios or the iPod. Each of these devices has a surprisingly long history and they were developed and then taken up for use in a variety of institutional and cultural contexts. Listening to music using these technologies is often associated with the idea of the personalization of listening and individual control over the sonic world in which we immerse ourselves. It is easy to see this as an example of the increasing privatization of cultural experiences. However, cultural practices are rich and diverse and, while there were clearly significant shifts in the sonic world during the twentieth century, our experience of music has always been an interesting balance of the private and the public, the individual and the collective, the personal and the communal. In fact, it is in the distinctions between these ideas that we can begin to understand the diverse ways in which we realize the pleasures of listening and make music meaningful.

The history of personal listening, then, is not as clear as it first seems. This is in part because the very concepts we use blur into one another. An opposition between private and public listening seems to suggest that we are talking about types of control over access, the binary of personal and collective seems to allude to issues of ownership, and the poles of individual and communal are suggestive of the different experiential nature of the types of listening available. Nevertheless, the fact that the words used in these binary oppositions

are often employed as synonyms indicates that ideas of control, ownership and experience are intertwined in the history of music media.

In this chapter, we explore the relationship between technologies of listening and the cultural experience of music and other sonic forms. We aim to go beyond some of the common stories of technological development and social use, which are built around grand narratives in which the reproduction of sound is perfected and the listening experience is privatized. This enables us to avoid the conclusion that personal listening has become either an example of increasing individual control or, conversely, of damaging and alienating isolation from others. We consider the development of these technologies as responses to cultural imperatives within developed societies and the way they are linked to ideas of entertainment, portability and private experience. In addition, we examine the institutionalization of access to music through recordings and radio and how new forms of music media are ordered by the major organizations which came to dominate their economic control. To explore these ideas, we consider how we listen, where we listen, when we listen and, ultimately, what listening means.

How We Listen

Personal listening seems to be symbolized by the act of wearing headphones; cutting us off from the outside world and restricting the sonic world we enjoy to an exclusive domain. Likewise, the mobility of modern listening seems intimately linked to our ability to take a source of audio content with us wherever we go. In narrating the recent history of music listening through the iPod, Michael Bull (2007) has focused on this audio playout device, along with headphones, as seminal, transformative technologies, which have created not only new sonic landscapes but also new forms of personal cultural practice. In doing so,

Bull has followed a wider thread of explanation in which media technologies are seen as the primary agents in processes of change. Brian Winston has provided a useful summary of the extent of this tendency towards technological determinism amongst media academics and offers a counter argument that new technologies are accommodated within, rather than transformative of, existing social practices (1998: 2).

There is substantial evidence that Winston's thesis grapples more effectively with the personalization of listening than Bull's does. Both the qualities of personal and mobile listening associated with the iPod have much longer histories than may be at first imagined and even discovering the precise moment in which the technologies were born can be difficult. The invention of headphones is variously claimed to date to 1910¹, 1937² and 1958³. The social context of these technologies is equally telling. Baldwin's headphones were initially aimed at a military market, Beyerdynamic's at the media industry, whereas Koss brought stereo headphones into the domestic mainstream. While the rhetoric of the various manufacturers of these devices proposes that they revolutionized personal listening, we can find much earlier attempts to realize the cultural imperative of the privatized sonic space. Telephones, famously patented in 1876 by Alexander Graham Bell, employed an earpiece, and early telephone operators employed headsets combining earpiece and mouthpiece in the 1880s (see Schubin 2011). Stankievech has argued that, "the site where cultural techniques of listening were both developed and reified" is to be found in the early nineteenth century development of the stethoscope, when we began to realize that the sound field was "virtually located within the head" (2007: 56).

Likewise, a simple chronology of mobile listening is usually recounted through the primacy of the transistor radio in cars and pocket radios, mass-produced from the 1950s;

the Walkman, launched in 1979 by the Japanese electronics company Sony; and realized on a mass scale with the iPod (totemic of all portable digital music players). Yet once again, none of these innovations in personal and mobile listening in themselves established new cultural practices. Portable radios had existed both in cars and outside them before the transistor was invented (Wall and Webber 2014); the concept of using a portable tape recorder with headphones was not new in 1979, as a 1974 photograph in which two headphone-clad Japanese girls demonstrate a radio-cassette player makes clear (see Society for the Nationaal Archief 2014). The iPod followed in the footsteps of a number of less-successful mp3 players, including the Diamond Rio and MPMan which was produced by a company of the same name, the self-styled “inventor of the mp3 player” (Mpman Europe 2014).

We should rather see the popular incarnations of these devices as highly specialized forms of pre-existing technologies, adapted to particular kinds of functionality appropriate to personal listening; the Walkman enhancing personalization by losing its recording and speaker features and the transistor radio enhancing mobility through lightweight components. These technological innovations are just one part of a complex picture of personal listening, not in themselves a response to technology but instead realizations of cultural imperatives. The way that human agents acted within underlying social structures is as important as the way that technology was deployed in specific historical moments. How we listen, then, is in an important sense just part of who is listening, where and when. As a consequence we might propose that personal listening pleasures can be best understood as cultural phenomena that remake listening space and time along with listener identity. In the sections that follow, we take each of these in turn.

Where We Listen

Listening was perhaps made more symbolically private when it was first realized in the domestic space. The telephone, and the electrophone developed from it, allowed audio to be relocated from public settings to the homes of the wealthy at the turn of the twentieth century. Feeds from churches and operas were delivered through headsets (Crook 1999: 17), with those listening potentially sitting in the same room and sharing a musical experience, but accessing that experience privately, as pictures from the time demonstrate (Freshwater 2012). Radio, the first institutionalization of wireless communication, was in the early decades of the twentieth century converted (counter-intuitively) from a military technology valued for its mobility to a domestic technology embodied in a piece of home furniture (VanCour 2008: 168-85). Domestic access to the supposedly public performance of music was a central part of the cultural uplift missions of broadcasters in North America and Europe (Briggs 1961; Hilmes 1997; Doerksen 1999). The corresponding association of music listening and domestic space became naturalized, a ‘common-sense’ conception reinforced in the academic literature by the notion of inhabitation of space, leading Bull, following Baudrillard, to suggest that we might conceive of personal stereos as “mobile homes” (Bull 2001: 239).

Of course, radio was subsequently displaced from the living rooms of an increasing number of middle class homes by television, relocating (in the US) to the car (Gomery 2008: 144), to elsewhere in the household and, as the introduction of the transistor facilitated the production of smaller radios, into the pocket (Schiffer 1993). While mobile listening pre-dated the invention of the transistor, the wider opportunity to enjoy “music on the move” was a significant cultural change within the USA of the late 1950s. Eulogies to the new American pop culture of the late 1950s and early 1960s gave a central place to the

car, and to pop music in cars. In addition, there was a new sense of space wrought by radio during this period, reflecting what Jody Berland (1993) has called 'radio space'; the different senses of space created by the programming and listener experience of radio, bounded at the most basic level by the broadcast footprint of a single radio station but also the creation of the programming of radio itself. The portability of receivers, first in the car and ultimately in the shirt pocket, intersected with the signal of the radio stations they received and the music programming that these stations broadcast.

In 1946 nearly 40% of the nine million US cars had radios, growing by 1963 to 60% of the then 50 million cars (Douglas 1999, 226). The car, radio, and rock 'n' roll are intimately linked in US film depictions of the period, such as *American Graffiti* (Lucas 1973), which opens with a radio being tuned to a soundtrack of DJ Wolfman Jack and early 1960s pop. In Europe, conversely, the portability of radio receivers was more important than music mobility and was often deployed to separate the young listener from the family orientation of earlier radio listening (Barnard 1989). Cultural patterns of consumption were matched by fundamental changes in radio ownership and production in the US between 1945 and 1965. The networks of affiliated radio stations sharing mixed programming were eclipsed for a time by the independent Top 40 local music stations, which came to the fore driven in part by commuting, domestic and leisure-time youth listening (Rothenbuhler and McCourt 2002). The publicly-funded national radio services which dominated in Western European countries resisted both the programming formats and commercial imperatives for a few decades longer (Barnard 1989).

A wider cultural imperative of portability and mobility in the 1960s created new senses of space associated with the car and 'listening on the go' pocket radios, together with a move

to more localized senses of radio space. The mobile music it ushered in was the product of changing demographics, media ownership arrangements and programming; and these imperatives continued to drive innovation. Improvements in headphone technology and the widespread use of the compact cassette in the 1970s resulted in hi-fidelity, portable recorded music players such as the Walkman, and headphone listening became increasingly popular in public spaces from the 1980s onwards.

Both Walkman and iPod are presented in the academic literature as strategies to govern the user's relationship with urban space: interventions in the acoustic design of the city (Hosokawa 1984: 175), strategies of control used to transform urban streets into "privatized pleasure palaces" (Bull 2005: 347). Through the experience of personal listening, mediated through headphones, users are able to ignore the space through which they pass, to detach themselves from it and view it as a film or at one remove (Bull 2005: 350). Elsewhere, scholars explore the use of headphones in the workspace, both as a control strategy and for the effects of this practice on productivity (for instance, Oldham et al. 1995), and in more diverse places; the prison, for example (Bonini and Perrotta 2007).

In many ways, the history of music listening is built around distinctions between public and private spaces. However, there is no consistency amongst cultural and media historians about what this means. For instance, Du Gay et al. (1997: 113-4) see headphone listening as transferring a domestic practice into public space while Uimonen (2004: 58-9) has suggested that public use of a cell phone constitutes a privatization of public space, through an expansion of acoustic territory. From a different perspective, personal listening is seen to isolate the listener from the space in which they find themselves, creating privacy in any context (Bull 2001; Bonini and Perrotta 2007: 184, 188). The car is often

constructed as a possibly even more private extension of the domestic environment (Bull 2001: 186), and there is a naturalness in conceiving of headphones as providing “unusual intimacy”, as many users do (Schönhammer 1989). These notions are reinforced through other channels too. For example, in a 2003 advertisement for the iTunes online music store, we see a young woman enjoying what is very clearly “her *private* experience, her *private* music” (Rodman and Vanderdonck 2006: 252).

However, people’s actual practices and experiences seem to undermine these naturalistic assumptions, making the idea of privacy problematic both as something domestic and as something represented by personal listening. The home has continued to be a venue for individual listening, as a variety of studies indicate (see, for instance DeNora 2000; Livingstone 2002), and while we might follow the line that, as domestic activity, all personal listening is private, there is a sense that some instances of domestic listening are more private than others. People clearly often use music and volume itself, rather than headphones, to create personal spaces (DeNora 2000: 56). Portable music devices like transistor radios and portable cassette players automatically afford an element of public access to music (Chow, cited in Du Gay et al. 1997: 139), although the dominant listening experience may be strictly personal in its design and focus. In addition, once music achieves a certain volume, any idea of privacy breaks down and previously personal listening acquires a public context. Passers-by experience the booming of bass from car speakers, fellow commuters the hiss of high frequencies on another’s headphones; as Schönhammer remarked, “one hears only the ‘garbage’ of someone else’s private acoustic world” (1989: 135).

It would seem, then, that while an illusion of privacy is presented to the user, we cannot see personal listening as truly, individually private. Perhaps the closest approach to auditory privacy is the example of the electrophone above, in which each person, wearing a headset to consume the music, is private to the others. Yet there is a collective experience even here, both of sharing the music and of sharing a space. Bull (2007: 61) records a modern example; the family in the car, each with their own personal listening devices to allow them to consume their own choice of music, via headphones. The history of private listening, then, has always been informed by two dimensions, the perceived privacy of the user's experience and the situation of that experience in space, reinforcing the importance of where personal listening takes place. The capacity for privacy is a reciprocal arrangement, a form of social contract and personal listening offers a form of "communal privacy"; it becomes private when everyone else is doing it too.

When We Listen

As we note above, a connection is often made between personal listening and mobile listening, and this with good reason since a significant site for the consumption of music through personal listening is the journey to or from work. This association has a long history too. Perhaps the most indicative example of the relationship between time and personal listening is that of radio. The night has long been associated with personal music listening and radio has been a central enabler of this. Hobbyist 'listeners-in' and the popularity of jazz are strongly linked to the early days of American radio in the 1920s (Douglas 1999: 83-100) and extra-territorial broadcasts at night shaped the timing of British popular music listening of the 1960s (Chapman 1992).

Berland notes the way that, from the 1970s onwards, radio broadcasts became organized into a series of conventional 'day parts', built upon the routines of a standard industrial day: breakfast, driving to work, morning and afternoon and finally the return drive home (Berland 1993). Radio time has always built upon the binary opposition between work and leisure, and although radio from the Second World War onwards featured, "music while you work" (Baade 2012: 60-82), the earliest radio programming was most often considered to be a leisure activity. The shift to the mobile car radio in the mid-1950s established a new set of dominant radio programming structures and the idea of distracted listeners using radio as a secondary medium, one that involves them while they do something else. Radio time was then built around an 'imagined listener' of three kinds: the industrial worker, primarily as commuter, who determines the breakfast and drive times; the middle-class housewife, seeking entertainment to underwrite her domestic chores, perhaps supplemented by those workers who were allowed radios in the paid workplace; and the youthful listener, who determined evening broadcasts and sought a distinct cultural experience, away from parents engaged with the television. For cultural critic Theodor Adorno (1945), radio in 1940s America acted as social cement, binding people into forms of social conformity which regulated both work and leisure time for the benefit of capitalism.

This emphasis on industrial time and secondary listening was adapted and consolidated into the 1960s but pop radio and FM/freeform radio altered radio's relationship to time significantly, with the programming, consumption and technology of radio producing in combination new senses of time. Again, mainly US phenomena of the late 1950s and early 1960s, they became the foundation for public service broadcasting developments around specialist music in the UK in the 1970s (Wall and Dubber 2009).

Radio's role has decreased, partly due to the widespread consumption of personal recorded-music technologies like the Walkman and, subsequently, the iPod. Yet personal listening and people's experience of the day remain intimately related, in defining their relationship with time. Where the radio does not "announce" the time through the deployment of particular music, users instead choose music appropriate, for them, to a particular time; "angry, loud music at night," for example (Bull 2005: 349). In terms of time, arguments about personal listening as a facet of control are persuasive; users listen to music that they choose in order to reclaim time as leisure or pleasure from the daily routine, of the commute or the rhythm and noise of the workplace (Bull 2005: 347; 2007: 108-20). The recreational imperative has thus been increasingly supported by mobile personal listening technologies, providing experiences which allow consumers to integrate leisure activities into their day in a manner which changes their relationship to particular periods of time, such that it has become possible to say, "I treasure my commuting time as a much-needed private space" (Bull 2005: 353).

What Listening Means

Personal listening not only reflects listeners' relationships with time and space, however, but also their relationships with one another and with those around them. This is not only a history of spatial and temporal mobility but also of social mobility. The electrophone was the technology of "well-off people" (Crook 1999: 17), and it was radio which brought personal listening to a broader demographic. As radio use grew, broadcasters engaged with their audience's sense of themselves in two primary ways: by responding to their conception of group identity and by addressing them directly. Group identity became the basis for organizing programs and then whole stations around niche audiences, addressed

mainly through DJs and the music they played. Commuters, domestic housewives, urban African Americans and, later, young people emerged as the most significant of such audiences. By the late 1930s sponsored serial dramas - the soap operas - made up over half of daytime airtime on the networks while the magazine format program established a new way to speak to women and their concerns (Hilmes 1997: 264-70; 277-87). With origins rooted in African American jive talk, the disc jockey appeared initially in programming targeted at communities of African American listeners and by 1946 there were 400 stations throughout the US aimed at this market (Barlow 1999).

The talk of the DJs produced a more personal relationship with the listener and rhythm and blues records became key elements of an urban black identity for African Americans through the 1950s (George 1988). R&B crossed over to the mainstream pop market in a new form of bi-racial pop on Top 40 radio (Ward 1998). Listening to a particular station had become both a choice and a statement, in effect an expression of identity. In Europe, fuelled by concerns about Americanization, the cultural domination of nation-state broadcasters like the BBC allowed only a few spaces for youthful popular culture. It is no surprise, then, that the entrepreneurs behind the sea-based, unlicensed broadcasters started in the hip clubs of 1960s London and drew on models of US pop radio's direct musical and personal address to drive their programming (Chapman 1992).

From the 1970s on, this model of identity was nuanced by the enabling implications of a new range of technologies. Listening to audio compact cassettes, or any of the variety of formats which came afterwards, emphasized new forms of allegiance. Whether this involved choices of tape or mixtape, of CD, or of mp3 playlist, identity could be performed more directly by the listener, through direct choice; the personalization of personal

listening, a cultural practice exploited by Sony in its 'lifestyling' of the Walkman for different demographics and locales (Du Gay et al. 1997: 62-74). That fashion of this kind communicates and identifies is best indicated by a well-known modern icon – the white earbuds sold with Apple iPods. Furthermore, sound leakage or speaker use made these public performances; a practice even more widely dispersed by the use of cell phone ringtones (Uimonen 2004).

Such attributes and behavior have often met with a hostile reception, manifest in the 1960s insults of “transistor addict” and “bleatnick” (Douglas 1999: 226), or directed at the “earphone being” of the Walkman age (Schönhammer 1989: 128-9). Du Gay et al. (1997: 115-8, 141-3) following Chambers, conceived of the Walkman as something “out of place” – transferring a private activity to a public space – and creating a form of “moral panic”. And headphone use continues this apparent breaking of rules in the interpersonal space. Schönhammer remarks that, “people with earphones seem to violate an unwritten law of interpersonal reciprocity; the certainty of common sensual presence in shared situations,” creating a sense of separateness and isolation which irritates more than the optic isolation of one who reads the newspaper in the subway (1989: 130, 133). In attempting to understand this push towards isolation through listening, Bull deploys the term “accompanied solitude”, drawing on Adorno’s concept of we-ness (Bull 2007: 5-6).

To emphasize the technological mediation here may be to set aside the importance of the cultural activity inherent in this process. Experimentation with personal listening in cars has suggested that the emphasis is on “accompanied” rather than “solitude” (Östergren and Juhlin 2006: 188); driving is a social practice. Indeed, reflecting on the identity implications of personal listening, we could conclude that being in accompanied solitude

does not require the music to be false company but only to provide common currency with others. Hosokawa (1984: 177-9) conceived of Walkman users as sharing a secret and, in consuming music by personal listening, we know that others, elsewhere, are consuming similar music – perhaps even by the same artist, perhaps even the same song – and in that musical appreciation we are part of a community. Thus the music does not replace company, but situates the listener within company, not necessarily co-present but as much of an “imagined community” as that of Benedict Anderson’s newspaper readers (Anderson 1983).

Conclusions

A rich understanding of the relationship between technology and cultural practices in the unfolding history of mediated listening demands that we examine the ideas of the private and public sphere, the differences between personal and collective ownership, and the poles of individualism and communality. In this history we do not find any simple shift towards greater privatization of listening, and there has been no obvious drive of technology to make us act in particular ways. Different technologies enable different ways to listen, but music playback machines, broadcasting and internet distribution systems, as well as loudspeakers and headphones, were developed to meet existing cultural goals. Early radio, the Walkman and the iPod are perhaps the most studied milestones, but others, like the HiFi headphones and mixtape cassette cultures of the 1960s to 1980s, are ripe for further investigation.

In all such studies we must remember that the notion that personal listening is simply private listening is difficult to sustain. The consumption of music is just as much part of identity performance as the consumption of fashion or fashionable technology, and while

personal listening may be aimed at separation from the immediate social world, people always hear as part of a community.

References

- Adorno, T.W. (1945) "A social critique of radio music," *Kenyon Review*, VII(2), pp. 208-217.
- Anderson, B.R.O.G. (1983) *Imagined communities: reflections on the origin and spread of nationalism*, London: Verso.
- Baade, C.L. (2012), *Victory through harmony: the BBC and popular music in World War II*, Oxford: Oxford University Press.
- Barlow, W. (1999) *Voice over: the making of Black radio*, Philadelphia, PA.: Temple University Press.
- Barnard, S. (1989) *On the radio: music radio in Britain*, Milton Keynes: Open University Press.
- Berland, J. (1993) "Radio space and industrial time: the case of music formats," in T. Bennett, S. Frith, L. Grossberg, J. Shepherd and G. Turner (eds.) *Rock and popular music: politics, policies, institutions*, London: Routledge, pp. 104-118.
- Beyerdynamic (2014) "Once & Today," *Beyerdynamic.com*, <http://europe.beyerdynamic.com/company/once-today.html>, accessed 18 February 2014.
- Bonini, T. and Perrotta, M. (2007) "On and off the air: radio-listening experiences in the San Vittore prison," *Media, Culture and Society*, 29(2), pp. 179-93.
- Briggs, A. (1961) *The birth of broadcasting*, Oxford: Oxford University Press.

- Bull, M. (2001) "Soundscapes of the Car: A Critical Ethnography of Automobile Habitation," in D. Miller (ed.) *Car Cultures*, Oxford: Berg, pp. 185-202.
- Bull, M. (2005) "No Dead Air! The iPod and the Culture of Mobile Listening," *Leisure Studies*, 24(4), pp. 343-355.
- Bull, M. (2007) *Sound moves: iPod culture and urban experience*, London: Routledge.
- Chapman, R. (1992) *Selling the sixties: the pirates and pop music radio*, London: Routledge.
- Crook, T. (1999) *Radio drama*, London: Routledge.
- DeNora, T. (2000) *Music in everyday life*, Cambridge: Cambridge University Press.
- Doerksen, C.J. (1999) "'Serving the Masses, Not the Classes': Station WHN, Pioneer of Commercial Broadcasting of the 1920s," *Journal of Radio Studies*, 6(1), pp. 81-100.
- Douglas, S.J. (1999) *Listening in: radio and the American imagination, from Amos 'n' Andy and Edward R. Murrow to Wolfman Jack and Howard Stern*, New York: Times Books.
- Du Gay, P., et al. (1997) *Doing cultural studies: the story of the Sony Walkman*, London: Sage.
- Freshwater, R. (2012) "Electrophone System," *The Telephone File*, <http://www.britishtelephones.com/electrophone.htm>, accessed 18 February 2014.
- George, N. (1988) *The death of rhythm & blues*, London: Omnibus.
- Gomery, D. (2008) *A history of broadcasting in the United States*, Malden, MA.: Blackwell.
- Hilmes, M. (1997) *Radio voices: American broadcasting, 1922-1952*, Minneapolis: University of Minnesota Press.
- Hosokawa, S. (1984) "The walkman effect," *Popular Music*, 4, pp. 165-180.

- Koss (2014) "Koss History," *Koss.com*, <http://www.koss.com/en/about/history>, accessed 18 February 2014.
- Livingstone, S.M. (2002) *Young people and new media*, London: SAGE.
- Lucas, G. (1973) *American Graffiti*, US: 110 mins.
- Mpman Europe (2014) "MPMAN, Inventor of the mp3 player", <http://www.mpmaneurope.com/en/>, accessed 18 February 2014.
- Oldham, G.R., et al. (1995) "Listen While You Work? Quasi-Experimental Relations Between Personal-Stereo Headset Use and Employee Work Responses," *Journal of Applied Psychology* 80(5), pp. 547-564.
- Östergren, M. and Juhlin, O. (2006) "Car Drivers Using Sound Pryer - Joint Music Listening in Traffic Encounters," in K. O'Hara and B. Brown (eds.), *Consuming Music Together: Social and Collaborative Aspects of Music Consumption Technologies*, Dordrecht: Springer, pp. 173-190.
- Rodman, G.B. and Vanderdonckt, C. (2006) "Music For Nothing Or, I Want My Mp3," *Cultural Studies*, 20(2), pp. 245-261.
- Rothenbuhler, E. and McCourt, T. (2002) "Radio redefines itself, 1947-1962," in M. Hilmes and J. Loviglio (eds.), *Radio reader: essays in the cultural history of radio*, New York: Routledge.
- Schiffer, M.B. (1993) "Cultural Imperatives and Product Development: The Case of the Shirt-Pocket Radio," *Technology and Culture*, 34(1), pp. 98-113.
- Schönhammer, R. (1989) "The Walkman and the Primary World of the Senses," *Phenomenology and Pedagogy*, 7, pp. 127-144.
- Schubin, Mark (2011) "Headphones, History, & Hysteria," *Schubin Café*, <http://www.schubincafe.com/2011/02/11/headphones-history-hysteria/>, accessed 18 February 2014.

- Singer, M. (1979) "Nathaniel Baldwin, Utah Inventor and Patron of the Fundamentalist Movement," *Utah Historical Quarterly*, 47(1), pp. 42-53.
- Society for the Nationaal Archief (2014) "Japanse meisjes tonen radio-cassettecorders," *gahetNA*,
<http://www.gahetna.nl/en/collectie/afbeeldingen/fotocollectie/zoeken/weergave/detail/q/id/ac53e71a-d0b4-102d-bcf8-003048976d84>, accessed 18 February 2014.
- Stankievecch , C. (2007) "From Stethoscopes to Headphones: An Acoustic Spatialization of Subjectivity," *Leonardo Music Journal*, 17, pp. 55–59.
- Uimonen, H. (2004) "'Sorry, can't hear you! I'm on a train!' Ringing tones, meanings and the Finnish soundscape," *Popular Music*, 23(1), pp. 51-62.
- VanCour, S. (2008), *The Sounds of 'Radio': Aesthetic Formations of 1920s American Broadcasting*, Thesis (PhD), University of Wisconsin-Madison.
- Wall, T. and Dubber, A. (2009) "Specialist music, public service and the BBC in the internet age," *The Radio Journal*, 7(1), pp. 27-48.
- Wall, T. and Webber, N. (2014) "Changing cultural co-ordinates: the transistor radio and space / time / identity," in S. Gopinath and J. Stanyek, *Oxford Handbook of Mobile Music*, New York: Oxford University Press.
- Ward, B. (1998), *Just my soul responding: rhythm and blues, black consciousness and race relations*, London: UCL Press.
- Winston, B. (1998) *Media technology and society: a history: from the telegraph to the Internet*, London: Routledge.

Further reading

For insightful examinations of personal listening technologies, see: Susan Douglas, *Listening in: radio and the American imagination, from Amos 'n' Andy and Edward R. Murrow to Wolfman Jack and Howard Stern* (New York: Times Books, 1999); Paul Du Gay et al., *Doing cultural studies: the story of the Sony Walkman* (London: Sage, 1997); and Michael Bull, *Sound moves: iPod culture and urban experience* (London: Routledge, 2007). Brian Winston, *Media technology and society: a history: from the telegraph to the Internet* (London: Routledge, 1998) is informative on the relationship between technology and culture. Finally, Sumanth Gopinath and Jason Stanyek (eds.), *Oxford Handbook of Mobile Music* (New York: Oxford University Press, 2014) offers a substantial and varied contribution to this field.

Notes

¹ Nathaniel Baldwin's "Baldy Phones" (Singer 1979: 48, 50).

² Beyerdynamic's first dynamic headphones (see Beyerdynamic 2014).

³ Koss "stereophones" (see [Koss](#) 2014).