Musicae Scientiae

http://msx.sagepub.com/

Individual music listening in workplace settings : An exploratory survey of offices in the UK

Anneli B. Haake

Musicae Scientiae 2011 15: 107

DOI: 10 1177/1029864911398065

The online version of this article can be found at: http://msx.sagepub.com/content/15/1/107

Published by:

\$SAGE

http://www.sagepublications.com

On behalf of:

European

Society for the Cognitive Sciences

Of

Music

European Society for the Cognitive Sciences of Music

Additional services and information for Musicae Scientiae can be found at:

Email Alerts: http://msx.sagepub.com/cgi/alerts

Subscriptions: http://msx.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

Citations: http://msx.sagepub.com/content/15/1/107.refs.html

>> Version of Record - Mar 1, 2011

What is This?



Individual music listening in workplace settings: An exploratory survey of offices in the UK

Musicae Scientiae I5(1) 107–129 © The Author(s) 2011 Reprints and permission:sagepub. co.uk/journalsPermissions.nav DOI: 10.1177/1029864911398065 msx.sagepub.com



Anneli B. Haake

University of Sheffield, UK

Abstract

Increasing access to listening technologies (MP3 players and digital file formats) and the internet has contributed to a new era of listening to music in offices, where many employees listen to music through computers and personal listening devices. While many studies in the past have examined the effects of researcher-selected music on work performance, no studies to date have explored office workers' musiclistening patterns, what they listen to and why. This article reports the findings of a survey that used a holistic approach to examine music-listening practices and experiences in office settings in the UK. Nearly three hundred (295) office employees provided quantitative and qualitative data on listening patterns and experience. Previous research has focused on positive mood and negative effects of distraction on task performance, but this study identified additional significant functions: inspiration, concentration, positive distraction, stress relief and managing personal space. Employees listened to music for a third of their working week, and reported listening to a wide variety of music styles and artists. Music helped them to both engage in and escape from work, and they often used music to seal themselves off from the office environment. Employees managed their listening practices so as not to disturb colleagues or appear unprofessional in front of clients. Managers and employees can benefit from recognizing the importance of employees being able to select their own music, and the multidimensionality of workplace music listening is also of interest to therapists, office designers and music technology developers.

Keywords

mood, music at work, music listening, office, task performance, wellbeing, workplace, work stress

Introduction

Many people have music access through portable listening devices and the internet (Bull, 2005; North et al., 2004), and there is recent evidence that music is perceived as beneficial by office workers. For example, Spherion (a large North American recruitment firm) found that 79% felt that music listening via MP3 players improved their job satisfaction and/or productivity (Spherion, 2006). Some commercial music suppliers and British radio stations (e.g., Classic FM) specifically target listeners in workplaces and promote music (commonly classical) as an

Corresponding author:

Anneli B. Haake, Department of Music, University of Sheffield, UK. Email: anneliberonius@hotmail.com antidote to stress. But music listening can also have a negative impact on task performance (of complex tasks in particular) (Furnham & Strbac, 2002; Furnham, Trew, & Sneade, 1999), and can be perceived as unprofessional (AOL.co.uk, 2007). In other words, listening to music at work can be viewed as beneficial, but also as inappropriate.

What are the experiences and functions of music at work?

Engagement in musical activities while working is by no means a recent development. Historically, Western work songs have helped rhythmic synchronization in physical work tasks and relieved boredom in monotonous jobs (Gregory, 1997; Korczynski, 2003). Following the industrial revolution, much research into music at work took place during the first half of the 20th century. This research focused on investigating music's impact on quantitative measures of fatigue, boredom and productivity in industrial settings. Music was conceptualized as something positive and potentially beneficial for organizations, and research was often driven by organizational desires for higher productivity. Music was found to be beneficial for monotonous work, and increases in output were often recorded (Antrim, 1943; Fox, 1971; Kaplan & Nettel, 1948; Uhrbrock, 1961; Wokun, 1969). These studies often measured the effect of music, either as observed by researchers, or as reported by management, rather than employees' views and opinions. One exception is Gatewood (1921), who reported that 86% of architect students in her school found music helpful for speeding up their work. They also described how music increased positive mood alongside improvements in task performance, and that music created a rest break in between periods of work.

Music for workers became heavily debated in the 1970s, specifically among German and Danish musicologists (Thorsén, 1989). The musicologists (including Ole Straarup, Han Heinrich Eggebrecht, Reinhard Fehling, Helga de la Motte-Haber and Per Drud Nielsen) critiqued the concept of functional music, often defined as (popular) music created for workers. The critique was both aesthetic, as it positioned work music as inferior to "real (classical) music", and ideological, as workers were viewed as being manipulated for purposes of increasing work performance (Thorsén, 1989). Theoretical music sociologist Adorno (1976) also took part in this debate, arguing that popular music (in particular) functioned as "wallpaper", and merely provided entertainment. Adorno viewed listening to music at work as a source of negative distraction, as it did not fulfil music's potential to raise critical consciousness. Instead, providing employees with access to music was a way for capitalist management to control the mass of employees. Most severely criticized were the music productions from the American Muzak factory in the middle of the 20th century (Lanza, 1994; Thorsén, 1989; Uhrbrock, 1961).

This debate became the departure point for a larger research project at Gothenburg University, carried out in the late 1980s ("Background Music at Work and at Leisure"). In this project where both qualitative and quantitative data were collected, socio-musicologist Thorsén studied music listening at a Volvo factory in Sweden and drew on comparisons with the US, UK and Eastern Europe (1985, 1987, 1989). The functions of music were stimulation from boring and tiresome tasks (both mentally in terms of concentration and physically in terms of bodily energy), creation of a different atmosphere, reminding them of leisure activities and experiences, providing a topic of conversation and identity forming, continuous development of music and culture preferences, and nostalgia. Thorsén found that workers wanted to listen to music that helped them engage more in tasks (for example through synchronization of movements) as well as music that provided escape from work. The fact that employees wanted different functions from the music at different times suggests that situational factors are likely to play an important role in the relationship between listener and music, in addition to stable mediating factors such as personality traits (Furnham & Bradley, 1997).

More recently, Bull (2007) explored MP3 player use at work in Western industrialized society as part of an interview study on MP3 player use in everyday life. He suggested that music listening can be a strategy for people in offices to privatize their auditory environment, a "form of cognitive control" (p. 112) as well as an "aural cocoon" (p. 113). The listeners in his study displayed a desire to control their working environment and pace. This finding is consistent with studies of privacy in open-plan offices, which suggest that employees highly value acoustic privacy in this particular work setting (Brennan et al., 2002; Ding, 2008; Jensen et al., 2005). Bull (2007) also found that using an MP3 player in private offices can communicate a "do not disturb" message to other colleagues, and can therefore act as a boundary marker. This function, according to Bull, can be understood as a demonstration that the employee has the authority to transform their working space. Furthermore, music helped listeners to concentrate on their task, as it prevented their minds from "wandering off". In shared office spaces, listeners described using their devices to block out surrounding sounds from their working environment, such as colleagues' conversations. Bull also noted that music listening was not always viewed as appropriate in the office, but that rules on appropriateness appeared fluid and subjective. Bull and Thorsén have focused on employees' own listening patterns, but because the studies focused on the uses of MP3 players and on factory-based workplaces respectively, it is still unclear why employees listen to music more generally in offices.

In applied psychology research, music at work has often been conceptualized as background music which may distract task performance (Cassidy & MacDonald, 2007; Daoussis & McKelvie, 1986; Furnham & Bradley, 1997; Furnham & Strbac, 2002; Kiger, 1989; Ransdell & Gilroy, 2001). But music use has never been discussed in many of the top journals in organizational psychology, even though other aspects of the working environment have been subject to many studies, e.g., lighting, heating, desk heights, noise (Furnham, 2005; Leather et al., 2003). Within IT research, the use of internet technology for private purposes has been conceptualized as leisure at work and many studies focus on risks associated with internet use (D'Abate, 2005; Garreth & Danziger, 2008). For example, use of the internet for personal purposes has been deemed a risk to organizations (in terms of legality and IT security), which can threaten the level of employee productivity (Attaran, 2000; Siau, Nah, & Teng, 2002; Withman, 2003). Music has sometimes been mentioned to illustrate examples of the products that employees might be downloading illegally. Oravec (2002) has pointed out that internet use at work can also be understood as constructive use which could enhance the workplace through stress relief and the provision of new perspectives. This conceptualization of private internet use at work as stress relieving and creativity enhancing is consistent with findings of research into the effects of music listening in offices (Lesiuk, 2005; Oldham et al., 1995). Studies of newer IT companies (e.g., Microsoft and Google) have highlighted the role that office design can have on employee identity. For example, van Meel and Vos (2001) noted that employees in the IT sector feel more at home and also become more creative if companies incorporate "fun" features (e.g., music access, pool tables and other games) and merge work and leisure in what they termed "funky offices". This trend has been consistent with developments in Britain of increasingly blurred boundaries between work and leisure (Lewis, 2003).

What mechanisms can explain experiences and functions of music at work?

The studies reviewed above illustrate a picture where music can be experienced as beneficial (for concentration and wellbeing) but also negative (distracting and irritating). Some studies have explored possible mechanisms that could explain these functions.

Two studies in particular have investigated the positive effects of listening to self-selected music at work (Lesiuk, 2005; Oldham et al., 1995). Both studies emphasize the mediating role of mood states on music listening and work outcomes. Self-selected music seems to influence mood, which in turn influences work responses. For example, Oldham and colleagues (1995) have suggested that relaxation could best explain the relationship between music listening and work performance. Lesiuk (2005) has argued that the way mild positive mood influences cognition may explain how music can affect work performance. An emerging research trend in these studies is the focus on wellbeing-related aspects of music listening, such as relaxation and positive mood. Given reported negative physical and psychological effects of work stress (Donald et al., 2005; Smith, 2001) and the fact that music listening in daily life often relate to mood regulating strategies (DeNora, 2000; North et al., 2004; Sloboda & O'Neill, 2001; Thayer et al., 1994), music listening in workplaces may contribute to lower perceived stress levels through improving perceived relaxation and positive mood. There is also a growing interest in promoting wellbeing in workplaces, following recent reports that UK employers lose £28.3 billion per year as a result of workdays lost to stress-related illnesses (NICE, 2009).

Some studies have focused more in detail on individual differences in music listening in every-day life. For example, a study by Chamorro-Premuzic & Furnham (2007) suggested that certain personality traits can mediate the way listeners use music. Participants scoring high on the trait of neuroticism were more likely to use music in emotional ways (e.g., listening to music for nostal-gic reasons, or to regulate mood), and those who scored high on the trait of openness used music in more cognitive ways, (e.g., enjoying analysing music compositions and performance techniques). Greasley (2008) found evidence for differences in engagement with music in adult listeners; listeners displayed differences in how they spoke about music, their breadth of preferences, dimensions of listening behaviour and uses of music. For example, highly engaged listeners described strong commitments to music styles, bought a lot of music, and attached high levels of importance to music as a resource in their lives. Less engaged listeners showed less commitment to music styles, described themselves as not very musical, were more often given music by others rather than buying it themselves, and found it hard to talk about why they liked certain music.

Organizational psychology research has investigated possible mechanisms that could explain effects of music on task performance. Cognitive tasks generally benefit from moderate levels of arousal but can be impaired by extreme levels (Daoussis & McKelvie, 1986; Furnham & Allass, 1999; Furnham & Bradley, 1997; Furnham et al., 1999; Kiger, 1989; Ransdell & Gilroy, 2001; Salamé & Baddeley, 1989; Thompson et al., 2001). In the main this research has utilized the psychobiological framework of Yerkes & Dodson (1908), which stipulated that there is an inverted U-relationship between performance quality and arousal. Even though results are varied, many researchers agree that music can have negative effects on task performance if the music produces very high levels of arousal (although there are individual differences in terms of what constitutes very high levels), as this can lead to problems with attention—narrowing of attention and difficulties in controlling it (Berlyne, 1971; Kahneman, 1973).

The experimental approach taken in many of these studies has been valuable for gathering quantitative "proof" of music's positive effects in a work situation, and for testing and validating theories about individual differences in arousal potential in music-listening situations. Yet the results provide little information about the situational and contextual influences that exist in listening situations at work, which have recently been noted in other listening contexts (Bull, 2007; DeNora, 2000; Dibben & Williamson, 2006; Gabrielsson, 2001; Juslin & Laukka, 2004; North et al., 2004; Sloboda, O'Neill, & Ivaldi, 2001).

Some studies have reported that music can evoke irritation and annoyance in certain circumstances (Gabrielsson, 2001; North, Hargreaves, & Hargreaves, 2004; Sloboda & O'Neill,

Haake III

2001). Martí (1997) investigated the most annoying sounds on the streets of Barcelona through mapping complaints to a local newspaper, and found that street musicians, neighbours practising instruments, and recorded music in public spaces were perceived as the most irritating. Martí suggested that the sounds were annoying because the events were out of the listener's control. Frith (2002) has argued that people find imposed music annoying because it is used to mark private territories, and because of our understanding of music as mood regulation in modern societies. The connection to emotional use of music can create feelings of annoyance and irritation, and the idea of music as marking private space contributes to negative attitudes to involuntary listening, according to Frith – if a territory can be marked, then it can also be invaded. Auditory boundaries have also been discussed in connection to music and oppression. Cloonan & Johnson (2002) have argued that in today's modern societies there is "increasingly portable noise in increasingly densely packed spaces" (p. 31). These spaces therefore become a potential site for conflicts, as the auditory boundaries are more flexible than visual boundaries: "More often, it is sound itself that is used to oppress, to take up public space at the expense of others. Sound thus becomes an invasion of personal space" (p. 29). The key issue is the sense of invasion of personal territory, rather than the loudness of the music per se. This has implications for music listening at work, especially in open-plan offices where the territorial boundaries of individual workspaces are blurred. But it may also have implications for private offices if the sounds are loud enough to permeate office walls or doors.

The aim of this study is to investigate music-listening experiences and patterns in offices. What music do employees listen to, why do they listen and while doing what? How often do they listen, what listening technologies are common, and with whom do they listen? In order to investigate current uses and functions of music, it is essential to study a wide variety of office workers in a number of different offices. The current research focuses on listeners who choose to listen while working. The reason for this is that because these individuals find music useful at work, they provide a useful sample for studying why that might be, and what functions music fulfils for them.

Research methodology

This study takes a strongly data-driven approach and examines what music is being listened to and what functionalities are attributed to music. Contextual information about the physical and social office environment have also been included into the design. In this ways it avoids imposing music and investigates the effects of music in less artificial environments. Thorsén (1985, 1987, 1989) suggests that a multi-method approach is useful for understanding the way that listeners, music and situation interact. The survey reported here uses mixed methods (qualitative and quantitative), and also investigates workers from several UK offices who use a variety of listening technologies, to add to previous studies that have studied particular listening devices and workplace settings.

Method

Participants. The sample constituted of 295 participants (175 females and 118 males, 2 did not indicate gender) who worked primarily in computer-based office environments. Occupation categories included Administrative occupations (N=49), Business and public service (N=50), Culture, media, sports (N=9), Health and social welfare (N=24), Managers (N=75), Protective services (N=12), Science and technology (N=18), Secretarial (N=18), Teaching and research (N=38). Distribution of the population was compared with data on occupational groups from the 2001 census for England (NationalStatisticsNomis, 2006).

Under-recruitment in a small number of occupational categories was remedied by contacting businesses, NHS care trusts, organizations and unions. Distribution of people according to job categories and also gender distribution within these categories were highly similar between the survey and the population, with less than 5% deviation per category. Respondents were aged between 18 and 65 with a majority between 26 and 35. During analysis, the age-groups were categorized into younger (18–35, N=165) and older (36–65, N=129). The respondents found their jobs on average moderately stressful ($\overline{x}=2.48$, Likert scale of 1= not stressed at all to 5= extremely stressed. SD=0.88). Most people worked in open-plan office environments (41%) and shared offices (30%). 29% worked in private office environments. Respondents in the sample were initially identified through personal contacts in a variety of professions, using a snowballing technique (i.e., encouraging respondents to forward the link via e-mail to other contacts). Doing so generated a wider sample than is likely to have been possible using paper copies only.

Survey. The survey gathered quantitative (multiple-response 5-point Likert scales, percentage scales, forced choices) and qualitative data (open questions) (see Appendix). Quantitative data included data on occupations, level of perceived stress, listening amount per working week, concurrent activities while listening, listening technologies, perceived degree of choice over the music heard, and functions of music. Qualitative data included music preferences at work, functions of music, and reasons for not listening to music at work. As the survey was a selfcompletion questionnaire and respondents would participate voluntarily during working hours, length was kept to a minimum in order to achieve as satisfactory a response-rate as possible. The survey did therefore not include more time-consuming scales (e.g., personality traits inventories). The questionnaire was administered via internet between December 2005 and May 2006. The study was carried out in accordance with the British Psychological Society's (2004) Code of Conduct Ethical Principles and Guidelines (www.bps.org.uk). Participants were shown a Participant Information document online, including information on the purpose of the study, confidentiality policy, and withdrawal and complaints policy. Participants were not asked to fill in any personal details in the survey (name or contact details) and are referred to in terms of a number, gender, age-group and occupation. Analysis of the quantitative data included descriptive and comparative statistical tests using the statistical software SPSS. Analysis of the free-response questions was carried out using thematic analysis (Braun & Clarke, 2006) using the qualitative research software Nvivo.

Results

What kind of music did employees listen to?

Participants were asked to describe in an open-ended question what type of music they listened to in the office. The most frequently mentioned genres were classical music, rock and pop (Table 1). Other commonly stated styles were indie and dance.

Participants also mentioned particular artists that they listened to in the office; the most frequently reported were Arctic Monkeys, Beatles and James Blunt (Table 2). It must be borne in mind that some of these artists were particularly popular at the time of the survey. Therefore, some artists' positions on this list should not be regarded as a stable image of what employees listen to in general in offices, but rather as an illustration of the popular music scene at the time.

Many participants also reported listening to particular radio stations in the office. Table 3 shows the most frequently reported radio stations.

Haake II3

Table 1. Ten most frequently reported music styles while listening in offices

Top 10 music styles	No. of times mentioned	% of total amount of participants $(N = 295)$	Cumulative%
Classical	52	17.60%	17.60%
Rock	37	12.50%	30.10%
Pop	25	8.50%	38.60%
Indie	24	8.10%	46.70%
Dance	16	5.40%	52.10%
Easy Listening	13	4.40%	56.50%
Jazz	11	3.70%	60.20%
Funk	7	2.40%	62.60%
Soul	7	2.40%	65.00%
Time periods (1960s, 1970s, etc.)	6	2.00%	67.00%

Table 2. Ten most frequently reported artists listened to in the office

Top 10 music artists	No. of times mentioned	% of total amount of participants $(N = 295)$	Cumulative%
Arctic Monkeys	11	3.70%	3.70%
Beatles	8	2.70%	6.40%
James Blunt	8	2.70%	9.10%
Coldplay	7	2.40%	11.50%
Kaiser Chiefs	7	2.40%	13.90%
Keane	6	2.00%	15.90%
Mozart	6	2.00%	17.90%
Radiohead	6	2.00%	19.90%
Foo Fighters	5	1.70%	21.60%
Red Hot Chili Peppers	5	1.70%	23.30%

Table 3. Ten most frequently reported radio stations listened to in the office

Top 10 radio stations	Number of times mentioned	% of total amount of participants ($N = 295$)	Cumulative%
BBC Radio 1	47	15.93%	15.93%
BBC Radio 2	27	9.15%	25.08%
Hallam FM	13	4.41%	29.49%
BBC Radio 4	10	3.39%	32.88%
Virgin	9	3.05%	35.93%
Classic FM	8	2.71%	38.64%
BBC 6 Music	7	2.37%	41.01%
XFM	5	1.69%	42.70%
96 Trent FM	4	1.36%	44.06%
BBC Radio 5	4	1.36%	45.42%

The high proportion of certain local radio stations (e.g., Hallam FM and 96 Trent FM) indicate to some extent the geographical location of many respondents (given that the survey was snowballed through personal contacts of the researcher, who at the time of this survey lived in the East Midlands region of the UK), and can therefore be interpreted as a local radio station, rather than Hallam FM *per se*.

Some participants described a wider range of music preferences than others. For example, a lecturer described his music preference in his office as follows:

Either classical music from www.lyricfm.ie or MP3s from my CD collection consisting of: Various Types of Metal: Sentenced, Death, Paradise Lost, Carcass, A Perfect Circle, Arch Enemy, Pestilence, Obituary, Napalm Death, Deicide, Morbid Angel, Megadeth, Fear Factory, H.I.M., Life of Agony, Linkin Park, Rammstein; Trip-hop/Electronic: Massive Attack, Depeche Mode, The Human League, Jean-Michel Jarre, Duran Duran, Faithless, Goldfrapp; Rock: Garbage, Iron Maiden, Eels, Faith No More, Green Day, Ozzy Osbourne, Lenny Kravitz; Film soundtracks: such as "A Beautiful Mind", "Braveheart", "Gladiator", "Amelie", "O Brother . . . ", "The Mission"; Classical: Dvorak, Smetana, Bach, Holst, Mussorgsky; Other: Johnny Cash, Israel Kamakawiwo'ole, Goo Goo Dolls, Enya, George Formby, Fun Lovin' Criminals. (292, M: 26–35)

Other participants described their preferences in considerably less detail:

Radio 1.

(81, F:26–35, Back office administrator)

The contrast in details of musical preferences is consistent with Greasley's (2008) findings of different engagement levels among music listeners. One way in which this broadly manifested itself was through how they talked about their music preferences; more engaged listeners described their preferences in rich, detailed ways, whereas less engaged listeners used fewer words and often found music preferences difficult to describe.

The results illustrate that a very wide variety of styles are listened to, similar to the findings of Greasley (2008) in relation to the daily lives of adults. The prevalence of classical music as a genre is to a considerable degree a result of the way in which participants referred to what they listened to. Although it was common to mention specific pop or rock artists, it was uncommon to mention individual classical composers or performers, or even to specify classical music subgenres. Compared to the grand total of popular music genres (e.g., pop, rock, indie, dance), classical music is mentioned in a minority of cases. The results suggest that employees do not necessarily listen to a narrower variety of music styles at work compared to outside work. There is therefore no indication of the existence of particular "office music". Instead, music listening at work mirrors general listening trends outside the workplace.

Weekly listening amount and activities

Respondents listened for 36% of their working week on average (M = 36.26, SD = 31.45). This result is congruent with the findings of non-academic surveys of employee listening behaviour (AOL.co.uk, 2007; Spherion, 2006), in which respondents reported listening for about three hours per day. 40% used headphones when listening at work and they used their headphones 86% on average of the time spent listening. Influences of background variables including gender, age, reported stress levels, working environments, or occupational groups were examined through analysis of covariance (i.e., one ANCOVA test per dependent variable, including all

Activities	$\bar{\mathbf{x}}$	SD	N
Driving/travelling	3.54	1.7	235
Doing routine tasks	3.40	1.3	235
Doing word processing tasks	3.21	1.4	236
Surfing internet/e-mailing	3.12	1.3	235
Taking a break/relaxing	2.86	1.5	235
Doing numerical tasks	2.34	1.3	235
Doing graphical tasks	2.17	1.4	234
Talking to colleagues	1.85	1.2	235
Talking to others	1.63	1.1	235

Table 4. Activities when listening to music at work (Likert scale I-5: I = never to S = always).

background variables). There were no significant relationships between the background variables and weekly listening time.

Respondents rated different activities while listening to music on a scale of 1 to 5, and the mean ratings are reported in Table 4. Of these, the most commonly occurring activities were "Driving/travelling", "Doing routine tasks" and "Word processing tasks". The least common activities were "Talking to colleagues", "Talking to others" and "Doing graphical tasks".

Influences of background variables including gender, age, working environments, or occupational groups as fixed factors, and stress levels as a covariate, were examined through a series of analyses of covariance (as in the section above). There were no significant relationships between the background variables and activities.

Why did people listen to music in offices?

Respondents rated their agreement with 13 functions of music at work, and also described functions in an open-ended question (for a full qualitative analysis of responses, see Haake, 2010). Respondents agreed most strongly with statements that music "Improves your mood", "Helps you relax" and "Makes you happier" (Table 5). Influences of background variables including gender, age, reported stress levels, working environments or occupational groups were examined through a series of analyses of covariance. Stress was positively significantly related to whether participants agreed that music could help them relax (F(1) = 4.348, p = .04), which suggests that music can have relaxing functions at work – particularly if the participants are stressed at work. The same covariate, stress, was also positively significantly related to whether participants agreed that music could distract them from unwanted thoughts (F(1) = 9.739, p < .01). Apart from stress, no other background variable was significantly related to functions of music at work.

Listening to music was often viewed as an activity at work that helped to regulate and improve mood. Many of the respondents mentioned that music listening had stress-reducing functions. For example, a Health and Safety Manager explained how certain music evoked memories that reminded him of a period when he was less stressed ("Rock music reminds me of my youth when I was not subjected to stresses" 27, M: 26–35yrs), and an Account Manager described how improved mood helped her to cope with stressful situations at work:

[Music helps to] improve my mood and keep a balanced view to what you are dealing with . . . e.g., it might help me remain calm or positive when dealing with a stressful situation. (46, F: 26-35yrs)

Functions	$\bar{\mathbf{X}}$	SD	N
Improves your mood	4.4	0.9	236
Helps you relax	4.3	1.0	236
Makes you happier	4.1	0.9	237
Makes you less bored	3.9	1.1	238
Creates a suitable atmosphere	3.8	1.0	233
Improves your focus	3.8	1.0	233
Blocks out surrounding noise	3.7	1.3	235
Inspires/stimulates you	3.7	1.1	231
Helps your creative flow	3.6	1.1	231
Distracts you from unwanted thoughts	3.4	1.2	232
Makes you less tired	3.2	1.2	232
Provides a different perspective	3.1	1.2	229
Helps you pace your work	2.8	1.2	230

Table 5. Functions of music listening at work (Likert scale I-5: I = strongly disagree to 5 = strongly agree)

For some people, music was experienced as cathartic and provided stress relief through representing negative affect in a public environment where acting out the experience was not deemed suitable:

Lets me think, allows me to chill and unwind, if it's a punky song I can imagine all my stresses being screamed out with the song even if I'm not screaming along with it. (202, F: 18-25yrs, Administrative Assistant)

Given that people are more likely to report high subjective wellbeing if they experience positive affect more often (Diener & Lucas, 2000), this could be a way in which music listening can influence employee wellbeing. In other words, music can create a sense of wellbeing in offices through providing frequent experiences of positive mood.

Music listening in relation to work activities had a dual function: engagement in, as well as escape from, work-related activities. First, when respondents reported listening to music to engage in work-related activities, they often described how music listening through headphones aided concentration. It can be understood as a way to control the auditory working environment (Bull, 2007), and as a way to replace external interruptions with familiar sounds chosen by the individual. Managing interruptions was described as a strategy for coping with stress, through having control over the auditory environment. This idea is also consistent with suggestions that noise at work can negatively impact on both physical and psychological wellbeing (North & Hargreaves, 2008; Warr, 1999).

Many respondents reported that music listening helped them to concentrate on monotonous tasks, but some also described how music could provide "clarity of thought" (175, M: 36–45yrs, Medical Staffing Manager) and aid the thinking process ("It helps me to think"; 159, F: 18–25yrs, E-learning Materials Developer). This suggests that employees not only listen to music when they carry out simpler tasks, but that listening is also perceived to benefit the thought processes involved in more complex tasks.

Other ways that music helped to engage employees while working was through a sense of inspiration. Music could be thought encouraging and motivating. Some explained that they felt more inspired to carry out certain tasks ("[Music can] make me more positive towards writing longer pieces of complex work which I don't particularly like"; 358, F: 26–35yrs, Educational

Haake I17

Development Advisor), whereas others argued that the inspiration related to a deeper experience, sometimes described as spiritual:

I listen to the music during work breaks because it transcends the workplace and acts as a form of escapism (I sometimes go to the gym at lunchtime which has a similar effect but lacks the spiritual dimension). (450, M: 36–45yrs, Project Manager)

It has been suggested that music can be perceived as spiritual because the perception and cognition of music shares elements of ineffability with spiritual experiences (Sloboda, 2000). By providing an inexpressible experience at work, it appears that music has the capacity to stimulate employees in an environment where things are more often quantified and graspable.

The second of the dual functions that related to work activity engagement was escape. Respondents often described how music could provide something else to think about. It provided a diversion and prevented employees from engaging in other distracting behaviours, as illustrated by a Work Placements Coordinator:

If music was not my distraction, then something else would be, i.e., something unproductive such as fiddling with papers or gazing out of the window. (369, F: 36–45yrs)

Music's distracting qualities were also referred to as stress relief. The fact that music can be distracting has mainly been conceptualized as a negative effect in previous literature on background music and task performance (Furnham & Strbac, 2002; Furnham et al., 1999). However, it seems that employees sometimes prefer to allow music to distract them, for stress-relieving purposes. Music can in this case be understood as a way to manage internal interruption (thoughts), but also as a means by which leisure is allowed into work through associations, memories and daydreams (Thorsén, 1985). Music could provide "a clear break between the sterility of the office and the time spent on [a] rest break" (415, M: 18–25yrs, Examinations Assistant), as well as "lessen [the] need for breaks as [music] feels more recreational" (61, M: 26–35yrs, E-Commerce Affiliate Manager). The recreational experience in the workplace can be triggered by the fact that music "brings a bit of home into the workplace" (254, F: 26–35yrs, Information Officer). When music symbolized familiarity, it represented something outside of work, and paradoxically helped to both define and blur boundaries between work and leisure.

Many functions were associated with other functions. For example, experiences of relaxation through music listening were believed to increase focus ("Because I find it soothing it makes it easier to focus"; 181, F: 26–35yrs, Research Administrator) and aid creative thinking ("It's relaxing not to work in silence. Being relaxed is more productive to creative thinking"; 371, F: 36–45yrs, Web Editor in marketing). These relationships are explored statistically in the next section.

Functions and activities. In order to examine these relationships further, correlations between activities while listening, functions of music at work, weekly listening time and reported job stress were analysed. An R-matrix showed that many variables were significantly related (see Haake 2010). The correlations were further investigated through exploratory factor analysis, as the many correlations may indicate that the variables could be measuring the same aspects of underlying dimensions (Field, 2005). Six factors with larger Eigen-value than 1.0 were included for factor rotation. The components were rotated using oblique rotation (Oblimin with Kaiser Normalization). The six factors extracted accounted for 65% of the variance. Structure matrix and items (including Eigen-values) are reported in Table 6. The first factor was labelled Inspiration, and accounted for 30% of the variance. This factor correlated most strongly with

Table 6. Structure matrix and item loadings for functions of music and concurrent activities

	Inspiration	Accompaniment	Social	Break	Affect	Concentration
1. Inspires/stimulates you					0.50	
2. Helps your creative flow	0.81				0.47	
Provides a different perspective	0.78					
4. Helps you pace your work	0.72					
5. Creates a suitable atmosphere	0.70				0.42	
6. Makes you less tired	0.57				0.46	0.51
7. Doing word processing tasks		0.78				
8. Doing numerical tasks		0.73				
9. Surfing internet/ e-mailing		0.65				
10. Doing graphical tasks		0.59				
11. Doing routine tasks	0.44	0.58				
12. Talking to colleagues			0.91			
13. Talking to others			0.89			
14. Driving/travelling				0.81		
15. Taking a break/				0.80		
relaxing						
16. Improves your mood	0.45				0.92	
17. Helps you relax					0.84	
18. Makes you happier	0.52				0.80	
19. Makes you less bored					0.65	
20. Improves your focus	0.43	0.44			0.55	
21. Blocks out surrounding noise						0.78
22. Distracts you from unwanted thoughts	0.46					0.67
% of variance	30%	11%	8%	6%	5.5%	5%
Eigen-values	6.52	2.39	1.74	1.36	1.21	1.12

N = 225. Bold indicates pattern matrix.

the functions "Inspires/stimulates you", "Helps your creative flow", "Provides a different perspective", "Helps you pace your work" and "Creates a suitable atmosphere".

The second factor accounted for 11% of the variance, and included concurrent activities while listening, e.g., "Doing word processing tasks", "Doing numerical tasks", "Surfing/e-mailing", "Doing graphical tasks", and "Doing routine tasks". Given that this factor did not include any functions, but a range of activities from simpler to more complex tasks, the factor was labelled Accompaniment. The third factor was labelled Social, accounted for 8% of the variance, and included the items "Talking to colleagues" and "Talking to others". The fourth factor was labelled Break, included the items "Driving/travelling" and "Taking a break/relaxing", and accounted for 6% of the variance. The fifth factor was labelled Affect, accounted for 5.5% of the variance, and included the items "Improves your mood", "Helps you relax", "Makes you happier", and "Makes you less bored". Finally, the sixth factor was labelled Concentration, accounted for 5% of the variance, and included the items "Blocks out surrounding noise" and

Variables	Classical, $\bar{\mathbf{x}}$ (SD)	Non-classical, $\bar{\mathbf{x}}$ (SD)	t
Reported job stress	2.73 (1.01)	2.40 (0.87)	2.319*
Helps you relax	4.17 (0.96)	4.31 (0.92)	-0.922

Table 7. Stress and relaxation according to whether respondents reported listening to classical music or not

Standard deviations in brackets. Listening to classical music at work N = 52, not listening to classical music at work N = 187. Both variables on a 5-point Likert scale.* p < .05

"Distracts you from unwanted thoughts". The findings that several factors accounted for the variance in both functions and activities highlight the fact that dimensions beyond age, gender and other fixed background variables can explain differences in listening patterns.

Given that some commercial music suppliers often promote classical music as an antidote to stress in the office, relationships between reported music preference and listening behaviour/ functions were further investigated. Qualitative data on music preference were quantified; respondents who reported listening to classical music, who mentioned particular classical composers or genres (e.g., Mozart, Handel, baroque, opera), or who reported listening to radio stations playing classical music (e.g., Classic FM, BBC Radio 3) were organized into a separate category of classical listeners (N = 52), which was then compared with the rest of the sample (N = 184) through independent t tests (for further details on the categorization process, see Haake, 2010). In order to investigate whether those who listened to classical music at work felt more relaxed, job stress and relaxation through music were compared. Results are presented in Table 7. Classical music listeners experienced more job stress, but they did not find music at work significantly more relaxing than non-classical listeners. But there are issues with classifying classical music as a single genre. Classical music pieces can vary greatly in dynamics, orchestration, tempo, etc. (e.g., Satie's Gymnopedies compared to Dvorak's New World Symphony). There are also similar issues with trying to classify what is sometimes simply called popular music (Greasley, 2008). A single artist may record songs that vary in dynamics, tempo and other sonic characteristics. The data on music preferences in offices did not suggest that slow relaxing music was more prominent, nor was the genre Easy Listening mentioned particularly often. Instead, the most mentioned artist at the time was Arctic Monkeys, a band often described as energetic and influenced by punk and indie. 2 It was evident that classical music listeners in this study did not differ greatly from those listening to other genres, a finding that has implications for companies who are trying to market certain types of classical music CDs to office environments; the beneficial effects are not necessarily emanating from a particular music genre. Instead, these findings suggest that people do listen to all kinds of music (defined as different genres, artists, or as differences in sonic qualities) while at work and can find music beneficial for relaxation.

Reasons for not listening to music at work. Respondents who listened to music at work were asked "Are there any reasons why you wouldn't listen to music in the workplace?" Respondents who did not listen at work were asked "What are the main reasons for you not listening to any music at work?" Four themes emerged from the analysis:

- 1) work-performance related reasons;
- 2) concern for others and image;
- 3) external hindrances;
- 4) individual preferences.

Examples from the first two themes are presented in this article (for full analysis of all themes, see Haake, 2010).

I. Work performance-related reasons. Music listening was not deemed suitable when respondents needed to communicate with clients or colleagues:

You miss office discussions and these can be very important when you work in a team and the discussions are usually work-related. (397, F: 36-45, Technical Infrastructure Specialist)

Another common reason for not listening to music in the office was distraction. Respondents described how concentration and music listening can "contradict each other" and that it can be "impossible to concentrate properly and listen to music" at the same time (184, 36–45yrs, Assistant Director). Some reported that complexity, loudness and music with lyrics in a well-known language could be distracting, as well as familiar music. It may be that familiar music becomes distracting if it evokes memories and/or emotions (DeNora, 2000). Furthermore, the idea that music and concentration are difficult to combine is also consistent with research into background music, task performance and cognitive load (Kiger, 1989; Konečni, 1982). This relationship between arousal, music and task complexity was illustrated by a Deputy Director:

If I am doing something detailed and my arousal level is already at optimum so that the music is a distraction. (276, F: 46–55yrs, Deputy Director Research and Consultancy)

These results appear contradictory compared to respondents' claims that music listening at work could aid concentration and improve focus, discussed above. How can music be both an aid to concentration and a distraction from the task at hand? One explanation is the conditions of the working environment, which could influence perceptions of music's role and whether it is help or a hindrance. In this instance, the Deputy Director cited above worked in a private office and would therefore not need to manage surrounding distractions in the same manner as someone who worked in an open-plan office. This variety of functions highlights the need for more contextual as well as individual data to understand the different experiences of music at work.

2. Concern for others and image. Respondents were concerned that music at work could disturb others, as it could cause stress to other colleagues. Respondents were aware that their preferred music may not be the musical choice of others, and several respondents reported using headphones in order to minimize potential disturbance in the office. Respondents appreciated having a sense of control over their listening, and they seemed to apply this understanding through being aware of the impact that their own behaviour had on other people.

Some respondents showed a concern for their business image. They were worried that music would "display an unprofessional image" (40, F: 26–35yrs, HR Consultant) and be considered "a little bit rude" (183, M: 46–55, Senior Academic Liaison Librarian) towards clients. Music at work could contradict a professional image and symbolize a lack of care towards customers and clients. Concerns about disturbing other people and appearing unprofessional were evaluated against individual wishes to listen to music at work, illustrating a tension between wanting to listen to individually selected music and needing to manage the social situation in the office. Balancing individual preferences and external requirements seems to be a process at the heart of the experience of listening to music at work.

Conclusion

Several conclusions can be drawn from the data, which highlight the importance of context in the study of music in daily life and the role of music in offices. Both qualitative and quantitative data point to music as fulfilling a wide variety of functions, and not only accompanying simpler routine tasks. Whereas earlier research identified physical synchronization as a common function of work music during the pre-industrial period, and alleviating boredom as an important function during the industrial period (Antrim, 1943; Korczynski, 2003; Uhrbrock, 1961), music listening in the modern office has many different functions; affect management, engaging in/escaping from work activities, and environment/interruption management.

An important dimension for respondents was inspiration; they listened to music at work to become more creative and stimulated at work. The analysis suggests that affect is not always an underlying dimension when listening while working. Another important dimension was concentration. Music could be distracting in a negative sense, particularly certain musical parameters. These findings can be interpreted as being broadly in line with the idea of an inverted U-relationship between performance quality and arousal (Kahneman, 1973; Konečni, 1982). However, results also indicate that distraction is not always conceptualized as negative – as has been suggested in previous literature (e.g., Furnham & Bradley, 1997). Instead, music distracted employees from their own thoughts, which could be relaxing, and brought a sense of leisure into their working environment. The fact that music can have many different functions in office environments indicates that music can also be used deliberately in this context, which is of interest not only for employees but also for organizational management, therapists and office designers.

As mentioned earlier, some commercial music suppliers target employees to provide classical music for stress relief in offices. Data suggest that classical music is being listened to in offices, but that employees also listen to a myriad of other music styles and artists. Listening to classical music was not necessarily related to greater levels of relaxation. Instead, experiences of control have emerged in the data as a powerful and important aspect of music listening as relaxation, as self-selected music provided employees with a sense of control over their surroundings and emotions.

Reasons for not listening to music at work included being worried about how their own music-listening patterns affected others. Employees were careful to not disturb colleagues, and were concerned about how the visual appearance of their listening influenced business image. The data also illustrate specific situational conditions that respondents took into account, evaluated and responded to when listening to music at work. There seems to be a tension between individual desires and external requirements, a tension that employees who want to listen to music at work need to manage.

The studying of music listening at work is timely, indicated by the lack of studies of the topic concurrent with the average high amount of individual listening per week at work. The results also contribute to the growing literature about music listening in everyday life, by adding the workplace to the previously studied areas, e.g. travelling and leisure (Bull, 2000; DeNora, 2000; North et al., 2004; Sloboda et al., 2001). The survey has attempted to improve the methodological approaches of previous studies of music listening while working. For example, the study collected responses from actual office employees, rather than university students. Also, the survey utilized mixed methods in order to investigate why people listen to music at work.

Even though there are advantages to identifying factors through exploratory factor analysis, any factor analysis is subjective and cannot identify causality (Field, 2005). This factor analysis should therefore be viewed as a complement to the qualitative data, and both data sets can be interpreted to explain variation in responses. Furthermore, the sample consists mainly of those who felt that music listening in offices was beneficial to them. The survey has therefore not

provided an answer to how many people on average listen to music in an office environment. Instead, the focus of this study was to investigate in greater depth why people who listen to music do listen, and to explore the reasons why they may not listen.

The results suggest that the same person may find music conducive in one work situation, and distracting in another. Many functions appeared to be related to each other, which is why it may be useful to investigate more detailed contexts that consist of particular combinations of factors. Situational needs that surround the listening situation (e.g., tasks, communication needs, level of control, appropriateness) also need to be further investigated. Therefore, the next step forward may not necessarily be to classify employees simply as those who listen to music and those who do not, but rather to explore the subtleties within employees. Future research could, for example, explore in greater depth the circumstances that lead to employees perceiving music as distracting or concentration-enhancing, and more detailed task performance studies could be carried out "in situ". Managers can benefit from recognizing the importance of employees being able to select their own music, given that music appears to act as an aid to managing stress levels (e.g., relaxation, wellbeing, inspiration). Future research could add more medical and neuropsychology-driven perspectives. For example, physiological indices of stress (e.g., cortisol or other hormones) could be measured, in order to further triangulate the research methods. Other types of workplaces (high-stress environments such as hospitals, or workplaces with less auditory control such as within the retail sector) as well as other cultures could also be studied in the future. Given the speed with which listening technology is currently developing, this type of survey could also be repeated, as music software such as Spotify did not exist at the time of the data collection. Furthermore, the identification of a tension between individual desires and external requirements raises further questions. How is this tension managed on a day-today basis? An identification of how these evaluations and responses are established and how they work in action would enable them to be compared to other kinds of contexts in the future.

Acknowledgments

This research was carried out using data from the project "An Exploratory Study of Music-Listening Practices in Workplace Settings", funded by the Arts and Humanities Research Council (119615), in collaboration with Dr Nicola Dibben.

Notes

Anneli Haake was awarded the Young Research Award (YRA) for this article at the 2006 joint ESCOM / ICMPC conference in Bologna.

- 1. Online keyword search for titles, abstracts and full length texts, including available online journals: Academy of Management Journal (1963–2003), Academy of Management Review (1976–2003), Journal of Occupational and Organizational Psychology (1999–today), Journal of Occupational Health Psychology (1996–today), Journal of Organizational Behavior (1988–today), Personnel Psychology (1948–today), The Industrial-Organizational Psychologist (1995–today).
- 2. http://www.bbc.co.uk/music/reviews/h3hj

References

Adorno, T. W. (1976). Introduction to the sociology of music. New York: The Seabury Press Inc.

Antrim, D. K. (1943). Music in industry. The Musical Quarterly, 29(3), 275–290.

AOL.co.uk. (2007). 'One in five' use iPods at work. Retrieved 7 August, 2007, from http://lifestyle.aol. co.uk/careers-and-work/one-in-five-use-ipods-at/article/20061030053409990001

Attaran, M. (2000). Managing legal liability of the net: A ten-step guide for IT managers. *Information Management and Computer Security*, 8(2), 98–100.

Berlyne, D. E. (1971). Aesthetics and psychobiology. New York: Meredith.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

- Brennan, A., Chugh, J. S., & Kline, T. (2002). Traditional versus open office design: A longitudinal field study. *Environment and Behavior*, 34(3), 279–299.
- Bull, M. (2005). No dead air! The iPod and the culture of mobile listening. Leisure Studies, 24(4), 343-355.
- Bull, M. (2007). The auditory privatization of the workplace. In M. Bull, *Sound moves: iPod culture and urban experience* (pp. 108–120). New York: Routledge.
- Cassidy, G., & MacDonald, R. A. R. (2007). The effect of background music and background noise on the task performance of introverts and extraverts. *Psychology of Music*, 35(3), 517–537.
- Chamorro-Premuzic, T., & Furnham, A. (2007). Personality and music: Can traits explain how people use music in everyday life? *Journal of British Psychology*, 98(2), 175–185.
- Cloonan, M., & Johnson, B. (2002). Killing me softly with his song: An initial investigation into the use of popular music as a tool of oppression. *Popular Music*, 21(1), 27–39.
- D'Abate, C. P. (2005). Working hard or hardly working: A study of individuals engaging in personal business on the job. *Human Relations*, 58(8), 1009–1032.
- Daoussis, L., & McKelvie, S. J. (1986). Musical preferences and effects of music on a reading comprehension test for extraverts and introverts. *Perceptual and Motor Skills*, 62, 283–289.
- DeNora, T. (2000). Music in everyday life. Cambridge: Cambridge University Press.
- Dibben, N., & Williamson, V. J. (2006). An exploratory survey of in-vehicle music listening. *Psychology of Music*, 35(4), 571–590.
- Diener, E., & Lucas, R. E. (2000). Subjective emotional well-being. In M. Lewis & J. M. Haviland-Jones (Eds.), *Handbook of emotions* (2nd ed.). New York: The Guilford Press.
- Ding, S. (2008). Users' privacy preferences in open plan offices. Facilities, 26(9/10), 401–417.
- Donald, I., Taylor, P., Johnson, S., Cooper, C., Cartwright, S., & Robertson, S. (2005). Work environments, stress, and productivity: An examination using ASSET. *International Journal of Stress Management*, 12(4), 409–423.
- Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: Sage Publications.
- Fox, J. G. (1971). Background music and industrial efficiency A review. *Applied ergonomics*, 2(2), 70–73. Frith, S. (2002). Music and everyday life. *Critical Quarterly*, 44(1), 35–48.
- Furnham, A. (2005). *The psychology of behaviour at work. The individual in the organization.* Howe and New York: Psychology Press/Taylor & Francis Group.
- Furnham, A., & Allass, K. (1999). The influence of musical distraction of varying complexity on the cognitive performance of extroverts and introverts. *European Journal of Personality*, 13(1), 27–38.
- Furnham, A., & Bradley, A. (1997). Music while you work: The differential distraction of background music on the cognitive test performance of introverts and extraverts. *Applied Cognitive Psychology*, 11(5), 445–455.
- Furnham, A., & Strbac, L. (2002). Music is as distracting as noise: The differential distraction of background music and noise on the cognitive test performance of introverts and extraverts. *Ergonomics*, 45(3), 203–217.
- Furnham, A., Trew, S., & Sneade, I. (1999). The distracting effects of vocal and instrumental music on the cognitive test performance of introverts and extraverts. *Personality and Individual Differences*, 27(2), 381–392.
- Gabrielsson, A. (2001). Emotions in strong experiences with music. In P. N. Juslin, & J. A. Sloboda (Eds.), *Music and emotion: theory and research* (pp. 431–449). New York: Oxford University Press.
- Garreth, R. K., & Danziger, J. N. (2008). On cyberslacking: Workplace status and personal internet use at work. *Cyberpsychology & Behaviour*, 11(3), 287–292.
- Gatewood, E. L. (1921). An experiment in the use of music in an architectural drafting room. *Journal of Applied Psychology*, 5, 350–358.
- Greasley, A. E. (2008). Engagement with music in everyday life: An in-depth study of adults' musical preferences and listening behaviours (Doctoral thesis, Keele University, Stoke-on-Trent).
- Gregory, A. H. (1997). The roles of music in society: The ethnomusicological perspective. In D. J. Hargreaves & A. C. North (Eds.), *The social psychology of music* (pp. 123–140). New York: Oxford University Press.

- Haake, A. B. (2010). *Music listening in offices: Balancing internal needs and external considerations* (Doctoral thesis, University of Sheffield, Sheffield).
- Jensen, K. L., Arens, E., & Zagreus, L. (2005). *Acoustical quality in office workstations, as assessed by occupant surveys.* Paper presented at the Indoor Air 2005, Beijing, China.
- Juslin, P. N., & Laukka, P. (2004). Expression, perception, and induction or musical emotion: A review and a questionnaire of everyday listening. *Journal of New Music Research*, 33(3), 217–238.
- Kahneman, D. (1973). Arousal and attention. In D. Kahneman (Ed.), *Attention and effort* (pp. 28–49). Englewood Cliffs, NJ: Prentice Hall.
- Kaplan, L., & Nettel, R. (1948). Music in industry. Biology and Human Affairs, 13, 129–135.
- Kiger, D. M. (1989). Effects of music information load on a reading comprehension task. *Perceptual and Motor Skills*, 69, 531–534.
- Konecni, V. J. (1982). Social interaction and musical preferences. In D. Deutsch (Ed.), The psychology of music. New York: Academic Press, Inc.
- Korczynski, M. (2003). Music at work: towards a historical overview. Folk Music Journal, 8(3), 314–334.
- Lanza, J. (1994). Elevator music: A surreal history of Muzak, easy-listening and other moodsong. New York: St. Martin's Press.
- Leather, P., Beale, D., & Sullivan, L. (2003). Noise, psychosocial stress and their interaction in the work-place. *Journal of Environmental Psychology*, 23, 213–222.
- Lesiuk, T. (2005). The effect of music listening on work performance. Psychology of Music, 33(2), 173–191.
- Lewis, S. (2003). The integration of paid work and the rest of life. Is post-industrial work the new leisure? *Leisure Studies*, 22(4), 343–345.
- Martí, J. (1997). When music becomes noise: Sound and music that people in Barcelona hear but don't want to listen to. *World of Music*, *39*(2), 9–17.
- NationalStatisticsNomis. (2006). Census data 2001 for England. Retrieved 25 May, 2006, from http://www.nomisweb.co.uk/
- NICE. (2009). Press release 2009/063. Retrieved 5 January 2011 from http://www.nice.org.uk/news-room/pressreleases/pressreleasearchive/PressReleases2009.jsp?domedia=1&mid=BFF2563A-19B9-E0B5-D4795A6FB7EA2096.
- North, A., & Hargreaves, D. J. (2008). The social and applied psychology of music. New York: Oxford University Press.
- North, A., Hargreaves, D. J., & Hargreaves, J. J. (2004). Uses of music in everyday life. *Music Perception*, 22(1), 41–77.
- Oldham, G. R., Cummings, A., Mischel, L. J., Schmidtke, J. M., & Zhou, J. (1995). Listen while you work? Quasi-experimental relations between personal-stereo headset use and employee work response. *Journal of Applied Psychology*, 80(5), 547–564.
- Oravec, J. A. (2002). Constructive approaches to internet recreation in the workplace. *Communications of the ACM*, 45(1).
- Ransdell, S. E., & Gilroy, L. (2001). The effect of background music on word processing. *Computers in Human Behaviour*, 17(2), 141–148.
- Salamé, P., & Baddeley, A. (1989). Effects of background music on phonological short-term memory. *Quarterly Journal of Experimental Psychology*, 41a, 18–26.
- Siau, K., Nah, F. F.-H., & Teng, L. (2002). Acceptable internet use policy. *Communications of the ACM*, 45(1), 75–79.
- Sloboda, J. A. (2000). Music and worship: A psychologist's perspective. In J. Astley, T. Hone, & M. Savage (Eds.), *Creative chords: Studies in music, theology and Christian formation* (pp. 110–125). Leominster: Gracewing.
- Sloboda, J. A., & O'Neill, S. A. (2001). Emotions in everyday listening to music. In P. N. Juslin, & J. A. Sloboda (Eds.), Music and emotion: theory and research (pp. 415–429). New York: Oxford University Press.
- Sloboda, J. A., O'Neill, S. A., & Ivaldi, A. (2001). Functions of music in everyday life: An exploratory study using the experience sampling method. *Musicae Scientiae*, 5(1), 9–32
- Smith, A. (2001). Perceptions of stress at work. Human Resource Management Journal, 11(4), 74–86.

Spherion. (2006). Spherion survey: Workers say listening to music while working improves job satisfaction, productivity. Retrieved 20 August, 2007, from http://www.spherion.com/press/releases/2006/IPod_at_Work_Snapshot.jsp

- Thayer, R. E., Newman, J. R., & McClain, T. M. (1994). Self-regulation of mood: Strategies for changing a bad mood, raising energy, and reducing tension. *Journal of Personality and Social Psychology*, 67(5), 910–925.
- Thompson, W. F., Schellenberg, G. E., & Husain, G. (2001). Arousal, mood, and the Mozart effect. *Psychological Science*, 12(3), 248–251.
- Thorsén, S. (1985). Musik på en fabrik. En intervjuundersökning om musik, arbete och fritid. (Music in a factory. An interview study about music, work and leisure) (pp. 1–51). Gothenburg: Department of Cultural Sciences.
- Thorsén, S. (1987). Från spinnvisor till P3-musik: En historisk diskussion av arbetsmusikens funktioner (From spin melodies to P3 music: A historical discussion of the functions of music at work). Svensk tidsskrift för musikforskning (Swedish journal for music research), 7-36.
- Thorsén, S. (1989). Music och arbete: Slutrapport for projektet Bakgrundsmusik i arbete och fritid (Music and work: End report for the project Background music at work and in leisure) (pp. 1–83). Gothenburg: Musicology Department.
- Uhrbrock, R. S. (1961). Music on the job: Its influence on worker morale and production. Personnel Psychology, 14, 9–38.
- van Meel, J., & Vos, P. (2001). Funky offices: Reflections on office design in the 'new economy'. *Journal of Corporate Real Estate*, 3(4), 322–334.
- Warr, P. (1999). Well-being and the workplace. In D. Kahneman, E. Diener, & N. Schwartz (Eds.), Well-being: The foundations of hedonic psychology (pp. 392–412). New York: Russell Sage Foundation.
- Withman, M. E. (2003). Enemy at the gate: Threats to information security. *Communications of the ACM*, 46(8), 91–95.
- Wokun, W. (1969). Music for working. Science Journal, 5a, 55–59.
- Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit-formation. [retrieved 4 February 2005 from http://psychclassics.yorku.ca/Yerkes/Law/]. Journal of Comparative Neurology and Psychology, 18, 459–482.

Appendix: Survey on music listening in offices

1. ► To what occupation	n category do you belong?	
Teaching and r	research professionals	
Protective serv	vice occupations	
(for ex police, fire	e fighters, prison service assistants, NCO's)	
Health and soc	cial welfare associate professionals	
(for ex nurses, m	idwives, dentists, therapists, youth workers, housi	ing officers)
Business and p	public service associate professionals	
(for ex pilots, tra	in drivers, finance related professionals, sales/buy	ers, health officers,
Corporate mar	nagers	
	nts, telephonists, credit controllers)	
Other, please specif	fy	
2. ► Do you mainly wor	k in a computer-based office environment?	Yes □ No □
3. ► What is your curre	ent occupation title?	
4. ▶ Tell me about your	workplace. Do you mainly work (please tick	only ONE option):
In a private room From home	In a shared room In an open office e On the road Other (please specify)	

5. ► How stressfu	l to do find your jo	ob generally (please tic	k only ONE opt	ion)?	
Not stressful at all	Mildly stressful □	Moderately stressful □	Very stressful □	Extrem	ely stressful □
6. ▶ Can you desc	ribe what 'stress'	is for you?			
7. ▶ Do you ever workplace, for example 2.		while working? (This c ing.)	an include tim	es outside	e a physical
Ţ	les □	No □			
If Yes, continue on	to question 8.				
If No, what are the	main reasons for	you not listening to an	y music at wor	k?	
•••••	•••••	•••••	•••••		•••••
		•••••			
		ove directly to question		•••••	•••••
				•	
	-	week, approximately h crcentage of your work		a listen to	music on a
	•		ing week):		
(Only nun	ibers may be entered	in this field)			
		efer to listen to in you			
_	_	ands/radio stations			
			•••••	•••••••	•••••
10. ► What functi					
11 NWbot one vo	u usually daing a	t the come time of lists	mina to musia	at words? (Indicate on
a scale from $0 = N$		t the same time as liste s):	annig to music a	it work; (muicate on
Doing word processi		0	1 2	3	4
Doing graphical tasl		0	1 2	3	4
Doing numerical tas		0	1 2	3	4
Taking a break/rela		0	1 2	3	4
Talking to colleague	S	0	1 2	3	4
Talking to others		0	1 2	3	4
Surfing internet/e-n	nailing	0	1 2	3	4
Driving/travelling		0	1 2	3	4
Doing routine tasks		0	1 2	3	4
Other, please specify		0	1 2	3	4
•		work, what functions	•	-	
your agreement w Strongly Agree):	vith the following	statements (on a scal	e from 0 = Stro	ngly Disa	agree to 4 =
Helps you relax		0	1 2	3	4
Improves your mood	ł	0	1 2	3	4
Improves your focus		0	1 2	3	4
Makes you less bore	ď	0	1 2	3	4

Haake Distracts you from unwanted thoughts Blocks out surrounding noise Makes you less tired Makes you happier Helps your creative flow Inspires/stimulates you Ω Provides a different perspective Helps you pace your work Creates a suitable atmosphere Other, please specify..... 13. ▶ Who are you with when you listen to music at work? (Indicate on a scale from 0 = Never to 4 = Always): Alone (can also be private listening in an open office/public space) With colleagues Other, please specify..... 14. ▶ How do you listen to music when you are at work? (Indicate on a scale from 0 = Never to 4 = Always): CD-player (portable or stereo) CD-player (computer) CD-player (car) Internet Mp3/iPod player Radio Public loudspeakers Walkman (cassette tape) 2. Other, please specify..... 15. ▶ How often do you choose what to listen to when you listen to music at work? (Indicate on a scale from 0 =Never to 100 =Always): (Only numbers may be entered in this field) 16. ▶ Do you use head phones when you listen to music at work? No..... Yes, on a scale from 0 to 100, I use head phones..... 17. ▶ Are there any reasons why you wouldn't listen to music in the workplace? 18. ► To which age group do you belong? **□** 18-25 \square 26-35 **□** 36-45 \Box 46-55 □ 56-65

19. ▶ Are you:

La audición de música individual en el entorno laboral: un estudio exploratorio de las oficinas en el Reino Unido

El creciente acceso a las tecnologías de la audición (reproductores MP3 y formatos digitales) e Internet han contribuido a una nueva era de escucha musical en las oficinas, donde muchos empleados escuchan música a través de ordenadores y dispositivos de escucha personales. Mientras muchos estudios realizados en el pasado han examinado los efectos de la música seleccionada por el investigador en el rendimiento laboral, hasta ahora no hay estudios que exploren los patrones de los oyentes oficinistas, sobre lo que escuchan y por qué. Este artículo presenta los resultados de una encuesta que empleó un acercamiento holístico para examinar prácticas de escucha musical y experiencias en entornos de oficinas del Reino Unido. Casi trescientos (295) empleados de oficina proporcionaron los datos cuantitativos y cualitativos sobre los patrones de escucha y la experiencia. Investigaciones previas se han centrado en el estado de ánimo positivo y los efectos negativos de la distracción en el desempeño de tareas, pero este estudio identificó funciones adicionales significativas: inspiración, concentración, distracción positiva, alivio del stress y gestión del espacio personal. Los empleados escucharon música durante un tercio de su semana laboral, y refirieron la escucha de una amplia variedad de estilos musicales y artistas. La música les ayudó tanto a participar como a escapar del trabajo, y a menudo utilizaron la música para aislarse ellos mismos del entorno de la oficina. Los empleados dirigieron sus prácticas de escucha para no molestar a sus colegas o parecer poco profesionales frente a los clientes. Los directivos y empleados pueden beneficiarse de reconocer la importancia de que los empleados puedan seleccionar su propia música, y la multidimensionalidad de la música en el lugar de trabajo es también de interés para los terapeutas, los diseñadores de oficinas y los que desarrollan la tecnología musical.

Ascolto musicale individuale nei contesti lavorativi: indagine esplorativa sugli uffici del Regno Unito

L'incremento dell'accesso alle tecnologie di ascolto (lettori MP3 e format di files digitali) e a internet ha contribuito a una nuova era dell'ascolto della musica negli uffici dove molti impiegati ascoltano la musica attraverso il computer o altri supporti personali di ascolto. Se in passato molti studi si sono occupati degli effetti della musica selezionata dal ricercatore sul rendimento lavorativo, ad oggi nessuno studio ha esaminato i pattern dell'ascolto musicale degli impiegati, cosa essi ascoltino e perché. Questo articolo riporta i risultati di un sondaggio in cui è stato impiegato un approccio olistico per esaminare le pratiche e le esperienze di ascolto della musica nel contesto degli uffici del Regno Unito. Quasi trecento impiegati d'ufficio (295) hanno fornito dati qualitativi e quantitativi sui pattern e le esperienze d'ascolto. La ricerca in precedenza si è focalizzata sulla disposizione positiva e gli effetti negativi della distrazione nello svolgimento di un compito, ma questo studio ha identificato ulteriori finzioni significative: l'ispirazione, la concentrazione, la distrazione positiva, il sollievo dallo stress e la gestione dello spazio personale. Gli impiegati ascoltavano musica durante un terzo della loro settimana lavorativa, riportando l'ascolto di una grande varietà di generi musicali e di artisti. La musica li aiutava sia a concentrarsi sia a fuggire dal loro lavoro, e soprattutto ad isolarsi dall'ambiente lavorativo. I lavoratori gestivano il loro ascolto in modo da non disturbare gli altri colleghi e in modo da non sembrare poco professionali davanti ai clienti. Manager e impiegati possono trarre beneficio dal riconoscimento dell'importanza della capacità degli impiegati di poter selezionare la loro musica. La multidimensionalità dell'ascolto musicale sul posto di lavoro è inoltre di grande interesse per i terapisti, per i designer di uffici e per chi sviluppa tecnologia musicale.

Ecoute musicale individuelle sur les lieux de travail: une enquête exploratoire dans les bureaux au Royaume Uni

L'augmentation de facilité d'accès aux nouvelles technologies (lecteurs MP3 et fichiers numériques), ainsi que l'internet, ont contribué à une nouvelle ère dans la façon d'écouter de la musique dans les bureaux, où de nombreux employés écoutent de la musique via leur ordinateur et des appareils d'écoute personnels. Alors que, par le passé, de nombreuses études ont examiné les effets de musique, choisie par les chercheurs, sur les performances au travail, aucune étude à ce jour n'a exploré les comportements d'écoute de musique chez les employés de bureau, ce qu'ils écoutent et pourquoi. Cet article rapporte les résultats d'une enquête réalisée par approche globale pour examiner les pratiques et les expériences d'écoute musicale dans le cadre de bureaux au Royaume-Uni. Presque trois cents (295) employés de bureau ont fourni des données quantitatives et qualitatives sur leurs comportements et leur expérience d'écoute. Les recherches précédentes s'étaient centrées sur les effets positifs de l'humeur et les effets négatifs de la distraction sur la performance au travail, mais notre étude a identifié des fonctions supplémentaires significatives: inspiration, concentration, distraction positive, soulagement du stress, et gestion de l'espace personnel. Les employés écoutaient de la musique environ un tiers de leur semaine de travail, et rapportaient écouter une large variété de styles et d'artistes. La musique les aidait à la fois à s'impliquer dans leur travail et à s'en échapper, et ils utilisaient souvent la musique pour s'isoler de l'environnement du bureau. Les employés géraient leurs pratiques d'écoute afin de ne pas déranger leurs collègues et pour ne pas paraître non professionnels face aux clients. Directeurs et employés peuvent tirer profit de la prise en compte de l'importance pour les employés de choisir leur propre musique. Et l'aspect multidimensionnel de l'écoute musicale sur les lieux de travail se révèle également intéressant pour les thérapeutes, les architectes d'intérieurs spécialisés en conception de bureaux, et les développeurs de technologies musicales.

Individuelles Musikhören am Arbeitsplatz: eine explorative Befragung in britischen Büros

Der erhöhte Zugang zu Hörtechnologien (MP3-Abspielgeräte und digitale Speicherformate) und das Internet trugen zu einer neuen Ära des Musikhörens in Büros bei. Viele Angestellte hören Musik über Computer oder persönliche Abspielgeräte. In der Vergangenheit haben zahlreiche Studien die Effekte von Musik, die durch Forscher ausgewählt wurde, auf die Arbeitsleistung untersucht. Bislang erforschte keine Studie die Hörmuster bei Büroarbeitern, was und warum sie hören. Dieser Artikel berichtet von den Ergebnissen einer Befragung, die mit einem ganzheitlichen Ansatz die Hörweisen und -erfahrungen im Bürobereich in Großbritannien untersuchte. Fast dreihundert (295) Büroangestellte erbrachten quantitative und qualitative Daten zu Hörweisen und-erfahrungen. Vorherige Studien fokussierten positive Stimmungseffekte oder negative Ablenkungseffekte auf die Arbeitsleistung. Diese Studie hingegen identifizierte zusätzliche wichtige Funktionen: Inspiration, Konzentration, positive Ablenkung, Stressabbau und Schaffen eines persönlichen Raums. Angestellte hörten während eines Drittels ihrer Arbeitswoche Musik, die eine große Vielfalt an Stilen und Künstlern aufweist. Musik half ihnen sowohl beim Vertiefen in die Arbeit als auch zum Ausgleich. Oft wurde Musik verwendet, um sich von der Büroumgebung abzuschotten. Angestellte handhabten ihr Hörerhalten so, dass sie weder Kollegen störten noch gegenüber Kunden als unprofessionell erschienen. Manager und Angestellte können von der Erkenntnis profitieren, wie wichtig die Selbstauswahl der Musik durch die Angestellten ist. Die Multidimensionalität des Musikhörens am Arbeitsplatz ist ebenso interessant für Therapeuten, Bürodesigner und Entwickler von Musiktechnologie.