



UNIVERSITY OF LEEDS

This is a repository copy of *Music in Detention and Interrogation: The Musical Ecology of Fear*.

White Rose Research Online URL for this paper:
<https://eprints.whiterose.ac.uk/130891/>

Version: Accepted Version

Book Section:

Windsor, WL orcid.org/0000-0001-6291-3057 (2019) *Music in Detention and Interrogation: The Musical Ecology of Fear*. In: Grimshaw-Aagaard, M, Walther-Hansen, M and Knakkegaard, M, (eds.) *The Oxford Handbook of Sound and Imagination, Volume 2*. Oxford handbooks . Oxford University Press , New York, USA , pp. 281-300. ISBN 9780190460242

<https://doi.org/10.1093/oxfordhb/9780190460242.013.71>

© Oxford University Press 2019. This is an author produced version of a chapter published in *The Oxford Handbook of Sound and Imagination, Volume 2*. Uploaded in accordance with the publisher's self-archiving policy.

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>

Music in Detention and Interrogation: The Musical Ecology of Fear

W. Luke Windsor

<1> Introduction

When we are fearful, it can be because we are threatened or perceive a threat: often that threat is current, sometimes it is remembered, and sometimes it is imagined. Music (and sound) can play a role in the generation of fear, and in this chapter I will argue that music is used in detention and interrogation not only to influence our emotional state directly but also to create an ambiguity and uncertainty that leaves the detainee subject to the free play of imagination, perverting the benign imagination of aesthetic contemplation into something malign and horrific. In order to do this, the boundary between the real and the imagined will be explored: the chapter aims to identify the location of this boundary, how it is set for individuals, and the circumstances in which it becomes crossed. A subsidiary aim is to address the broader context for the use of music in detention and interrogation in order that, in the more academic quest for an understanding of a set of musical behaviors and their consequences, the history and psychology of music's use as a military tool is not overlooked.

Music is often seen as a force for good: for example, the co-option of Mozart's music as a panacea has become a paradigmatic example of folk psychology, despite many unintended consequences. Yet, throughout human history, music (and sound) has been associated with and utilized by commercial, political, and military forces in attempts to control behavior, and music itself seems to have intrinsic power to do harm. In Thomas Kenneally's book *Schindler's Ark* (1982), an inmate-musician and a German officer in a work camp in occupied Poland conspire to use the repetition of a musical work (the infamous *Gloomy Sunday*) to fatal effect: as a result the officer commits suicide after requesting that the song be repeated with increasing passion. Kenneally's parable gives musical power to the detained Jewish prisoner, and the officer

willingly submits. This, of course, is the opposite of the normal state of affairs: music in detention is most often controlled by the captor and, as will be discussed below, used to attempt to influence the thinking and behavior of the captive. The parable is also an exaggeration for effect: through hyperbole, Kenneally actually highlights the powerlessness of the captive, who only has the passion for music left as a weapon.

As Grant (2013a; 2014) points out, it is not just in the recent Iraq War, where the use of loud recorded music in detention gained notable media coverage (see e.g., Chrytoschek 2011), that music has been used to coerce or humiliate detainees. Moreover, forced singing and playing, as well as forced listening form part of this history of music in detention and link it to a broader and longer context of music in military settings (see e.g., Pieslak 2009; Grant 2013b). Furthermore, as Pieslak (2009) discovered, there is a considerable overlap in the choice of music by soldiers for personal use and their selection of music in overt and covert attempts to influence others.

This chapter will not attempt to provide an overview of all the ways in which music might or might not be used to influence others, for ill or for good. It will instead focus on an acute and special case of music psychology: that of forced listening to music in detention, whether or not such forced listening is intended to elicit information or not. The aims here are to show how such uses of music can be reframed within a broader context of musical persuasion and to provide a deeper engagement with the ethics of music than could ever be achieved without considering the extreme case of music in detention. For a more general discussion of the darker side of musical experience, Johnson and Cloonan (2009) provide a thought-provoking survey of the many ways in which popular music is deployed as an accompaniment to, or tool of, violence.

It is with considerable care that any music researcher should engage with the study of music in detention and/or interrogation. This is partly due to the commonly held view that

music is, or should be, a benevolent art with positive impacts upon individuals and societies, a view that may cause us to turn away from a more malevolent instrumentalism. Within such a context, research pointing out the harm that music can do seems counter-productive. Indeed, if one is focused on maximizing the potential social benefit of research (see e.g., Sloboda 2005) working on the harm that music can do can only really be justified if it presents data or analysis that can be used in advocacy against the harmful use of music or if it suggests tools to combat such uses.

Added to this particular disincentive, the broader study of internment, detention, interrogation, and torture requires a sensitivity to and breadth of knowledge about international and military law and custom, the ethical and moral background to cruel and inhuman practices, and so on; few musicologists or music psychologists come ready-prepared to engage with this body of work. In addition, the researcher may be persuaded that, by studying music in interrogation, they might inadvertently promote practices they disagree with, or indeed add to the body of knowledge that interrogators employ in the field. The position taken by the Society for Ethnomusicology in 2007 (SEM 2007) suggests there is something particular about the use of music in coercive interrogation that should be called out by musicologists, and also that musicologists should call attention to such (ab)uses of music. Some musicologists are content to disavow *all* coercive interrogation and question whether we need to make a special case of music within this context, when considered in the context of the range of coercive methods used in detention and interrogation:

The issue is really torture, which to me is always wrong, period. I can't see that music as torture is more or less wrong than anything else as torture, and I confess that deep down this feels like special pleading—e.g., water resource managers complaining about the use of water for torture, or (more ridiculously) Hello Kitty aficionados complaining

that Hello Kitty armbands were to be used by a Thai police department as badges of malfeasance and indiscipline (Bellman 2007).

This chapter takes an initial step back from these problems, and it does not initially consider whether they are of particular importance given the wider debate about the legality or morality of obtaining information through psychological or physical manipulation or pressure. Instead, it will engage with the perceptual and social-psychological consequences of playing music in situations of detention, and it will engage also with the context for these practices, as this may help us better understand how they have come about and how they can be seen to be situated within a broader context of music as a source of behavioral control. Hence, although much reference will be made to existing ethnographic and historical work in this domain (especially that of Cusick 2006; 2008a; 2008b; Pieslak 2009; Grant 2013a; 2014) the broader contexts that will be applied are derived from psychological research that is related both to interrogation and also to other forms of coercion, and the understanding of the relationship between imagination, sound (and music), and direct perception.

The role of imagination in the creation of a fearful, vulnerable, and malleable state has an explicit and implicit relationship with the ability or inability of a person to directly and effectively act upon and perceive their surroundings. It is for this reason that, rather than analyzing the role of sound in coercive interrogation in a theoretical vacuum, some positioning is required. This chapter will introduce and apply the work of Gibson (e.g., 1966; 1979) on direct perception and ecological psychology and will attempt to show how his theory of perception helps explain the ways in which sound and music, normally helpful or benign, become sources of fear and confusion. The work of Gibson will be returned to in the conclusion of this chapter in a more political vein, as it will become clear that his approach to psychology provides a neat riposte to the co-option of (music) psychology by military and commercial

interests for purposes of persuasion. The contrast between Bernays' (1942) and Gibson's (1939) reactions to Nazi propaganda efforts do not, as I will argue, rest upon both an ethical distinction and a theoretical one: their views of human psychology lead them to very different conclusions about how we as individuals should respond to attempts by others to influence us. Before this, however, it is necessary to review some of the existing work on music and interrogation/torture and its intellectual and practical antecedents.

<1> Music in Detention/Interrogation

Although music is mentioned in many recent accounts of the detention of political prisoners and detainees captured by the US and its allies in its 'war on terror,' it is neither the most significant aspect of their treatment nor is it isolated from a wider history of music in the context of persuasion or the broader context of sound in military or intelligence applications. The scope of this chapter does not allow for a complete review of the psychological or historical literature of psychological warfare and even less for a review of the enormous literature on music in behavior control (see Volgsten this volume). It is also the case that media interest in the use of **music in interrogation**, and indeed in modern warfare, has been intense throughout the so-called 'war on terror,' arguably in disproportion to its uptake and impact in comparison to other more clearly violent and illegal coercive practices described in military and CIA manuals and in the accounts of detainees and practitioners, and in analyses thereof. Nonetheless, to understand the peculiar appeal of music to military and intelligence interrogators, and its relationships with mainstream applied music psychology and the history of sound in warfare, the following will provide a brief overview of some relevant literature and concepts.

<2>The History and Broader Context of Music in Detention and Interrogation

<3> Music and Behavior Control

Music has a huge and well-researched impact on our emotions (see e.g., Juslin and Sloboda 2011 for a comprehensive review). In many situations, we are free to choose our own music, but in the cinema, or while watching television, shopping, or sitting in a hospital waiting room or dentists' surgery, music is presented to us through external agency. Music, and especially recorded and publicly broadcast music, has a long history in relation to the psychology of persuasion. It has been used in advertising and brand promotion, where more or less subtle, intrinsic or extrinsic qualities of musical structure or lyrical content are deployed to attach an emotional valence to a product or brand, or to manipulate arousal levels (see Gustafsson and Egermann, both this volume). Such approaches are also used in retail settings (such as shops, malls, and restaurants) to influence not just our internal state, in an attempt to imbue spaces with a particular ambiance, but also our level of activity. One of the most highly cited publications in the field of consumer control is the description of a study in which the volume of music was varied in a supermarket (Smith and Curnow 1966): louder music was associated with less time in the store but no lesser volume of purchasing. The authors of this study explain this through an arousal hypothesis, whereby the louder music leads to greater arousal in the customers and faster shopping, rather than driving the customers from the store. The correspondence of music to customer's expectations or their degree of liking are, however, important factors that can be manipulated to influence their behavior. A study by North, Hargreaves, and Mckendrick (1999) demonstrated that we will stay on hold to a help line longer when the music is both liked and congruent with the task. More subtle dimensions of musical structure and associated or evoked emotions can also influence what we purchase, how long we linger, and even how much we are prepared to pay for products. For example, the style of music and its associations with more or less expensive items might be a powerful predictor of purchasing (Wilson 2003). Music has also been considered as a factor in delineating zones

within shopping malls and department stores, with different style of music helping to identify soft boundaries between different product areas (e.g., Yalch and Spangenberg 1993).

Music is also used without the intention of influencing purchasing in public spaces. Just as we might employ it within our own spaces or through earphones to manage our mood, our spaces' musical ambiances are curated for us in attempts to speed or slow our movements, make us more comfortable, or provide public information. Although these uses are potentially more benign and may be alternatives to more expensive or harmful attempts to influence us, the central aim is to coerce the listener into a more or less passive state. Dentists, for example, claim to use music to calm patients with some success, aiming to make their work easier through a more relaxed patient without needing recourse to medication. However, Aitken and colleagues (2002) found no effect of music in such contexts above and beyond the patient's enjoyment of it in a controlled setting, and even in studies where it is shown to have an effect it may only be for less anxious patients (e.g., Lahmann et al. 2008). Moreover, regardless of whether it is effective, music may simply become another remembered feature of a hostile environment for an "uncooperative" patient (see e.g., Welly et al. 2012), and associations of music with experience can obviously flow both ways. Nonetheless, Standley's meta-analysis of music in dental and medical settings (1986) does suggest an effect. Similarly, in waiting rooms, medical or otherwise, rather than speeding up service, one may choose to play music to increase tolerance of waiting time (see e.g., North et al. 1999) or reduce stress (see e.g., Tansik and Routhieaux 1999).

Note, that in all these situations, music's primary value in self-managing our psychological state is supplanted by external control of this environmental information. Of course, music is but one of many kinds of stimulus information that we and others use to orient and be oriented in the environment, but the semi-unavoidable nature of acoustic stimulation is significantly different from some other forms of influence: averting or closing one's eyes is

much easier than ignoring unwanted sound. Of course, one can wear ear defenders, plugs, or headphones to block out or supplant this information with silence or our own choice of music, a technological adaptation that serves to both regain and enhance control of the auditory environment in a way that is thoroughly contemporary. As a corollary, the encouragement of employees to curate their own workplace musical environment in order to increase productivity and staff well-being (and to avoid the distractions of workplace noise) is becoming more widespread, and there is some empirical evidence to support the effectiveness of such practices (see e.g., Lesiuk 2005).

Of course, music's ubiquity in this space of influence has led many to complain about, campaign against, or avoid such settings and uses of music. The attempts by early adopters of musical broadcast technology to impose music in settings such as public transport often backfired (see e.g., Hui 2016), and there is a general social consensus that even the minor public acoustic spillage from headphones is an intrusion that can attract considerable opprobrium.

Before concluding this section, and in order to form a link with the discussion below of the relationship between more general uses of music as propaganda and in psychological warfare, a final way in which music is used in explicitly political settings is worthy of mention. In an unusual and original study, Shevy (2008) used different genres of music to influence participants' perceptions of trustworthiness, friendliness, and political ideology, exploiting the stereotypical associations of hip-hop and country music: a pertinent feature of his findings, which will become relevant when discussing psychological warfare and interrogation, is that the extent and nature of such influence should vary with the ideology and musical preference of the listener: a liberal African-American listener would be primed very differently by music than a white or Hispanic listener or a conservative African-American, and such influences would vary with preference for musical genre. Music is a tool for subtle persuasion in the context of ideology, not just for commercial ends.

<3>Music in Military Life

Music is very much a part of military life (as is sound, see Bull, this volume): all of the behavioral applications for music listed above might apply to **military situations**, both as externally applied attempts to manage the behavior of military personnel and in the self-management of emotion in individuals. In addition, and particularly since the Korean War, music has been used to influence opposing civilian or military populations and has been treated more or less as a weapon. There are three particular features of music that are common to all of these applications: rhythmic structure as a guide or stimulus for movement; loudness as a method of overwhelming the auditory system; and the bio-semiotics of musical meaning, whereby values and even denotative meaning can be expressed at a distance. Music can be cheaply and easily transmitted electronically either through amplification, or via radio, internet, and satellite, on its own or in combination with visual images.

Musical **rhythm** is most often associated in military life with the direct **entrainment** of movement to musical meter through marching. Most military units have marching bands, and the coordination of movement to music has both utilitarian and psychological dimensions. Even in situations where instruments are not used, soldiers will often **march** to songs: the clearest examples of this in the Western military is the singing of the **French Foreign Legion** which cuts across marching and more reflective settings; the **Boudin**, for example, is sung standing to attention as well as in celebratory or functional marching situations. The tempo of the Boudin, whether sung in motion or not, is surprisingly slow, infamously necessitating the arrival of French Foreign Legion units at celebratory events after other French units, and, indeed, it both denotes the separate identity of the Legion, and connotes its rather dour character. This tempo, and a curious single style, with truncated phrase ends, extends to a wide repertoire of traditional and popular songs, mostly in French, which many of the recruits will barely speak, but also

many songs are in German, reflecting the large number of German recruits the Legion has attracted at times (see, for example, French Foreign Legion 2016). A related tradition, from the United States, is that of the cadences and jodies sung by soldiers as they train (see Pieslak 2009): again, synchronization of movement is paramount, but in both cases the content is also significant, and rather different, as will be discussed below. Importantly, the **music of marching** sits in an interesting zone in between self-chosen musical behavior and imposed discipline: the choice to march or sing is not free, it is taken under military discipline, and to refuse is a matter for the military courts.

Regardless of any other subtler parameter, the sheer volume of military music is important. Whether participatory or not, military bands and even unaccompanied singing produce loud sounds which travel far. In combat, and extensively documented in Pieslak's study of music in the Iraq War (also see Gittoes 2005, documentary), soldiers not only take the trouble to select their own music to accompany combat within armored vehicles, they create DIY sounds systems within them to broadcast the music over their intercom systems or through internally mounted loudspeakers. There is a sense in which, just as a commuter masks the sounds of others with music over headphones, this creates a private environment within the vehicle, the sheer volume of sound masking the influence of the threats from outside. The volume of broadcast or headset music here is self-chosen, although in Gittoes' extraordinary unsanctioned film about music in the Iraq War (2005) some of the interviewees have clearly developed less coherent musical selections, creating a conflicted musical environment within the confines of the armored vehicle: being unable to escape from loud unwanted music is clearly a potential problem in combat, just as it might be in other work-settings.

The **semiotics of military music** interacts with these other two parameters: the trite example of the bugle call at one end of a spectrum which ends with the singing (and broadcast over loudspeakers) of *Je ne regrette rien* in association with the withdrawal of the final French

Foreign Legion units from Algeria. The lyrics, tempo, and musical structures of military music implicitly and explicitly influence soldiers before, during, and after combat; they serve to identify particular units and they communicate ideas, national identities, and ideologies. This semiotics was particularly important to imperial military powers; for example, in Africa in the late nineteenth and twentieth centuries (see e.g., Clayton 1978). For example, in East Africa, both British and traditional African music were adopted to build a corporate identity, often exploiting the usage of Swahili as a cross-tribal language. To sing *Men of Harlech* in Welsh, or indeed English, is one thing, but to sing it in Swahili, quite something else. In this case, the fantasy of Welsh (actually mostly English) soldiers singing this song at Rorke's Drift (in the film *Zulu*) has a real counterpart in the musical practices of later colonial troops. Or consider the lyrics of this traditional World War II song from Kenya (also sung in Uganda):

Mussolini Mussolini,

Mussolini amekimbia!

Nakumbuku njaro Nairobi!

Nakumbuku njaro Faifa keya!

Tutarudi!

Tutarudi!

Mussolini, Mussolini

Mussolini has run away!

We remember the light of Nairobi

We remember the brightness of 5 KAR

(Clayton 1978, 38).

<3>Psychological Warfare

Allied with the presentation of propaganda in spoken form via radio or loudspeaker, music has long played a role, along with sound effects, in efforts to influence the behavior of opposing forces. Indeed, for Volcler (2013; also see Goodman 2012 for a more theoretically-driven treatment), the modern usage of music in this context (often associated with the Korean War and later conflicts) is one of two main precursors of the use of music in detention, the other being post-1945 CIA-sponsored research on the psychology of coercive interrogation. Volcler also draws parallels between the non-lethal usage of sound as a persuasive tool and as a weapon to disable or kill, which will be addressed briefly below. This historical link between music as an at-a-distance tool of warfare and music in detention is also made by Pieslak (2009), who distances his historical narrative from that of Cusick (2006, 2008a, and 2008b), for whom, like Volcler (2013), the sources of music in detention derive both from propaganda practice and from covert psychological research programs. It is probable that the history of music's use in detention draws in many precursor practices (see Grant 2014 for an excellent overview of the many ways in which music comes to be used as and in torture), and it is likely that the use of music to explicitly influence behavior draws variously on all of these precursors, depending upon circumstance. This will be returned to below in relation to the tension between improvised and more institutionally circumscribed practices described in manuals and by practitioners and detainees.

Even in mainstream psychological warfare, the use of music often oscillates between more improvised and administered extremes and between motivational soundtrack and non-lethal weapon, as exemplified by the use of music during the siege of the Vatican Embassy in Panama in 1989, originally intended to mask reporters' attempts to eavesdrop on negotiations:

While some accounts claim that the music was played to boost the morale of American troops (a claim that even here demonstrates the overlap between psychological tactics and inspiration for possible combat), it had, regardless of original intent, a powerful side effect. When Noriega commented that the music was irritating him, the Marines increased the volume, playing the music continuously (Pieslak 2009, 82).

Rather than review the range of ways music is used in persuasion in the field, the reader is directed towards Pieslak's coverage of the use of music by opposing forces in the Iraq War (2009): here both sides broadcast sound at high volumes via loudspeaker: nasheeds on the Iraqi side, and rock and rap music on the US side: in both cases he argues that such a sonic environment inspires friendly forces while also being intended to destabilize the enemy.

<3> Sound weapons

Volcler (2013), in her provocative book *Extremely Loud: Sound as a Weapon*, argues that the use of music in detention and interrogation takes place in a broader context of **sonic weaponization**. Indeed, although spending much time on the claims made for physiological applications of sound, she concludes that it is the psychological impact of sound (and music), whether tacit or conscious, that is the most effective weapon. Although sound at high intensity can damage the ear (or even other organs), and contemporary technologies such as the *Long Range Acoustic Device* (LRAD) can both deliver verbal instructions, tones, noise, or music at long ranges and high enough intensities to cause distress or damage, she notes that the fear of such weapons is probably just as impactful as their application. Importantly, like Cusick, she notes that the attraction of non-lethal weaponry is often somewhat disingenuous: just as the LRAD is marketed as a long-range communication device but potentially applied as a weapon

at shorter ranges, sound and music are portrayed as relatively harmless (no-touch) interrogation techniques rather than as psychologically harmful torture methods:

“No-touch torture” shares with non-lethal weapons the advantage that it leaves no marks directly caused by interrogators on the visible, fleshy surfaces of the body. Thus hard to prove, and hard to jibe with images of torture familiar from visual and literary culture, “no-touch torture’s” premise is nonetheless consistent with the premise behind non-lethal weapons, including those that use sound; and it is consistent with the premise by which PsyOps units use sound or music to prepare the battlefield. The common premise is that sound can damage human beings, usually without killing us, in a wide variety of ways. What differentiates the uses of sound or music on the battlefield and the uses of sound or music in the interrogation room is the claimed site of the damage. Theorists of battlefield use emphasize sound’s bodily effects, while theorists of the interrogation room focus on the capacity of sound and music to destroy subjectivity (Cusick 2006).

Volcler’s most interesting conclusion is that, in many cases, the use of sound as weapon is more effective as a purely psychological technique, a placebo weapon of the imagination:

The difficulty in understanding the functioning and effects of acoustic weapons, as well as the mass of conspiracy theories and paranormal inventions they inspire, works in their favor: the information about them becomes confused, thus fueling the psychological effect from which they benefit ... Weapons of high technology that, like “no-touch torture,” touch without touching, pass through obstacles, and act without

seeming to act, acoustic weapons are also infused with a carefully sustained illusion of magic (2013, 137–138).

As I will argue below, it is the appeal to imagination as opposed to direct perception that is at the heart of music's use in detention and interrogation but, before turning to this eco-behavioral interpretation, the next section provides a brief review of recent practices, impacts, and narratives of music in detention and interrogation, focusing on recent conflicts in Iraq, Afghanistan, and the wider 'war on terror.'

<2>Music in Interrogation and Detention: Recent US Practices

The use of music in the early twenty-first century by US interrogators and guards is embedded in a longer historical and technical context. Before focusing on accounts of these practices from the perspective of military personnel and detainees, it is important to recognize the ideological positioning of the main researchers and its impact on their somewhat limited and selective choices of informants: Pieslak (2009) views the use of music in interrogation from the perspective of the interrogator and, like Lagouranis (e.g., Lagouranis and Mikaelian 2008), one of the few interrogators to write in detail about his work, concludes that the small part that music and sound played in interrogations was largely improvised in the absence of clear legal guidance (according to Lagouranis much of the wider practice was similarly developed 'on the job').

Pieslak's two main military sources exemplify this institutionally vague context in their differing opinions on whether music can ever constitute torture as opposed to legal coercion, noting that neither of the military manuals in effect at this time mention the use of music in any detailed manner or loud sounds (Department of the Army 1992 and 2006, the latter subsequent to considerable amendment following public exposure of the more extreme methods used by

US forces). One of Pieslak's sources views music and other sounds as permissible within both the operational and legal guidelines as long as the interrogator experienced them simultaneously with the detainee; the other viewed music as an illegal "change of scenery" for the detainee, tantamount to actually blindfolding, transporting, and confusing the detainee about their location. Pieslak notes that his second informant was working in Iraq after procedures were made less extreme following the exposure of prisoner treatment at Abu Ghraib prison in 2004.

Of course, some interrogators may have been implicitly or explicitly following guidelines provided by the CIA, either the infamous KUBARK Counter Intelligence Interrogation manual (CIA 1963; also see CIA 1983), or later medical guidance (CIA 2004). These CIA manuals do discuss sensory deprivation (which music or noise can contribute to by masking other sounds) and the general principles of coercive interrogation, but nowhere is the detailed use of music discussed. In the most recent of these manuals (CIA 2004, 8), the use of "white noise or loud music" is ranked fifth out of 20 techniques (in ascending severity) intended to act psychologically on the detainee, with "shaving" the least severe, and "waterboarding" the most severe. Here, and later in this manual, it is made clear that sounds should not be so loud as to damage hearing (CIA 2004, 13) with a maximum of 79 dB. Given that such advice was routinely ignored, according to contemporary accounts such as those cited here, including those reported by Pieslak, it seems possible that the use of extremely loud music above such levels was either improvised in the field, in line with the wider use of music in military settings, or was directed through less well-documented cultural practices.

In contrast, Cusick (2006; 2008a; 2008b; also Volcler 2013), views the use of music and sound in interrogation as directly emanating from the guidance in the military and CIA manuals above (also see McCoy 2006) and hence from covert CIA research programs: unlike Pieslak, she argues that despite the lack of direct reference to music in the manuals, they imply a

particular set of practices “very much like the relationship of performance practice norms to that of a published score” (Cusick 2008a, 16). Although some of the evidence for a direct link between psychological research programs on sensory deprivation and related forms of coercion and later practice is rather weak (see e.g., Blass 2007; Brown 2007, in relation to the contributions of Milgram and Hebb to CIA research), it is clear that these manuals draw on empirical studies on sensory deprivation, although, as pointed out by Pieslak (2009), there is no evidence that any of these studies used music as a masking stimulus.

Cusick’s (2008a) primary sources are detainees themselves, although she does refer in detail to secondary material from interrogators themselves. Her work provides the clearest description of music in interrogation practices in this period, especially through her interviews with Donald Vance and Moazzam Begg and her analysis of the interrogation of Muhammad al-Qatani but also in her discussion of accounts by two pseudonymous US interrogators and Lagouranis. In summary, these accounts provide clear qualitative evidence of the practices and their impact:

1. music was played at very high volumes both in detention more generally and during interrogations, certainly much louder than would be advised if permanent damage were to be avoided
2. music was played for long durations (exacerbating the damaging effects of loudness)
3. the music chosen reflected the individual tastes and cultural backgrounds of the interrogators
4. music was interchangeable in some instances with everyday sounds
5. the interrogators used music for a number of intended purposes related to:
 - a. masking background sounds to isolate the detainee
 - b. interrupting cognition through distraction

- c. creating cultural dissonance
- d. establishing the dominance of the interrogator.

The issue of dominance (5d above) seems particularly pertinent to the explicit training interrogators received; the relationship of dependency between interrogator and detainee is established not only through the playing of loud music (or indeed disturbing everyday sounds) but by its cessation at the will of the interrogator. 5a-c correspond to what Pieslak's second informant refers to as a 'change of scene': music is intended to block out and change the environment of the detainee in such a way as to maximize isolation and minimize any sense of familiar surroundings. Such masking and distortion of the environment is cultural as well as natural, as evidenced by the contrast Cusick identifies between the experiences of Begg and Vance (both familiar with Western popular music) and that of al-Qatani, who was less so and more so considered music to be *haram* (forbidden). Begg and Vance found the constant loud music irritating, disorienting, and painful, but were not sensitive to its cultural dissonance: Begg even notes that he believed that his interrogators were sensitive to this and did not use music with him in the interrogation cell (although it was played elsewhere) (Cusick, 2008a, 6–7). Vance, however, like Begg found that the **loud music**, regardless of its cultural familiarity still played a huge role in the psychological regime in which they were immersed. Regarding al-Qatani, Cusick claims that the use of Western music was used knowingly to undermine his religious convictions due to its cultural specificity:

Given that the Taliban had forbidden music in Afghanistan for religious reasons, it seems possible that al-Qatani genuinely believed that listening to music was haram, forbidden, and therefore sinful. Yet his inability to talk knowledgeably about Islam's theological traditions on music allowed "the music theme" to merge with the themes known as "the

bad Muslim,” “al Qaeda betrays Islam,” “God intends to defeat al Qaeda,” “arrogant Saudi,” and “I control all” to produce the overall “approach” called “Pride/Ego Down.” That is, al-Qatani was humiliated, and his Muslim identity attacked, by his obvious ignorance of his own tradition. Meanwhile, the “loud music” he may have experienced as sinful continued to keep him awake, to end his interrogation just before he was allowed to sleep, to awaken him, to prevent him from speaking in answer to interrogators’ questions, and to fill up longer and longer parts of interrogation days that were also filled with the argument over music’s alleged sinfulness, which constituted “the music theme” (2008a, 13).

This passage illustrates that the use of music by US interrogators is, if one accepts this account at face-value, much more sophisticated than anything in the training manuals declassified by the US Government. Music is not just another convenient loud sound to disorient through controlling the environment, it is a cultural weapon of persuasion, related to its use in propaganda and psychological warfare. This point is even more forcefully made by Grant (2014), who locates music in detention within a broader context of music as a method for sanitizing the act of applying militaristic power. Grant suggest that there exists a continuum between the natural and the cultural, and between the linguistic and musical in many interrogation or detention settings, and even implies there is a perverse creativity in the use of music by interrogators to avoid more obvious evidence of force.

<1>Music, Information, and Interpretation: **Fear and Imagination**

Having described and contextualized the ways in which music has recently been used in detention and interrogation, it is time to return to the **ethical dimension of music** and its co-option by interrogators. In their different ways, Cusick (2006, 2008a, and 2008b), Pieslak

(2009), and Grant (2014) attempt to make sense of the way in which music seems corrupted by its association with detention and interrogation, even though they may argue about whether it can be considered torture in itself.

Rather than approach this question directly, this final section will recast the use of music in detention and interrogation within the eco-behavioral approach to psychology characterized by Gibson (e.g., 1966 and 1979; also see Heft 2001). The intention here is to demonstrate that this co-option of music is partly a result of choosing to apply psychological research not only to the understanding of human behavior, but also to its control. To this end I will contrast the positions of Gibson (1939) and Bernays (1942) on Nazi propaganda, but first it is necessary to describe Gibson's mature position on the relationship between direct perception and mediate perception, and how it helps explain both benign and malign applications of music.

<2>Sound as Information about Objects and Events

Within **ecological psychology**, stimulus information from objects and events is considered as information about those objects and events: sound, for example, is a source of information about the world and, in **Gibson's** later work, serves as information about the potential actions afforded to an organism by the environment (1966; 1979). Gibson worked much more extensively on vision than auditory perception, but his ideas have been applied to perception via both musical and everyday sounds (see e.g., Gaver 1993a and 1993b; Windsor and de Bezenac 2012). Music, like any other sound, provides information about the actions that produce it, and although this may seem a rather unusual way of viewing music, this tendency of the auditory system to detect the real (or virtual) causes of sounds is both an undeniably important aspect of auditory perception and one which is important to our interpretation of both more or less conventional (see e.g., Clarke 2005) and unconventional (see e.g., Windsor 2000) musics.

In many everyday situations, we are able to identify or at least classify the sources for the music that we hear, whether played on the radio or self-chosen, whether experienced live, with the additional benefit of visual information, or acousmatically over loudspeakers or headphones. We know something about where it comes from, who made it, and what they might have wanted us to think or feel; we can infer meaning from lyrics or instrumentation, or the subtleties of harmonic or melodic semiosis. Our sensitivity to these dimensions of sound, however, is developed through developmental familiarity. It might seem paradoxical in a book about imagination to turn to work on direct perception: Gibson's eschewal of representation and information processing in his account of perception is both controversial within psychology (see e.g., Fodor and Pylyshyn 1981) and may seem unproductive when other approaches (such as that of Neisser, e.g., 1978) explicitly try to understand the relationship between imagination, memory, and perception. However, as I will argue below, the way that imagination functions in Gibson's work highlights a boundary between real and virtual which is both useful and thought-provoking in this context.

<2>Music and **Sound as Information** for Interpretation and Imagination

Of course, if all music did was inform us about causation and agency, it is hard to imagine that we would spend so much time and effort listening to it. Musical listening also invokes interpretative action in response to the impoverished or ambiguous information provided by the artwork:

As Gibson himself states in response to the question of what happens in cases of inadequate information: "the perceptual system hunts" (Gibson 1966, 303; also see Windsor 2000 and 2004). Where the immediate information from a particular source is insufficient, the human being not only hunts for additional information from the

“natural” environment, but also from the social and cultural environment. By observing the actions of others, exploring cultural artefacts, by involvement in discussion with others, information may be explored which supplements that provided by the event or object in question. In the case of a sound or sequence of sounds which fails clearly to specify an event, the human listener attempts nonetheless to make sense of these sounds in relation to the environment (Windsor 2000 and 2011). Such activity represents for the listener the active part of what might otherwise be considered a passive activity. Choosing to write or talk about music we have heard, walking out of a gig, or even listening again to a passage of music are all actions that leave traces on the environment for others to perceive. Music-makers help furnish us with affordances for interpretative action; they do not merely provide sounds which we process in a passive internal fashion (Windsor and de Bezenac 2012, 14).

In **everyday listening** situations, the meaning of the sounds we listen to is mediated by more or less active exploration of the real or virtual agency that created them: we talk to others about music, we read record sleeves or online discussions, and, where these fail to provide us with sufficient clarity, we invent, indeed *imagine* reasons that the music is like it is (see also Bull, this volume on the mediation of sound in war).

<2>Imagination and Fear of Music

If one accepts that music is a source of information about our surroundings, albeit one that is somewhat contingent upon familiarity, then exposure to music that we do not know is particularly likely to invoke more imaginative and cognitive approaches to listening, as opposed to more automatic responses. In situations where we do not choose the music that we are listening to, this can be a pleasurable puzzle to be solved. Of course, extreme

unfamiliarity/complexity is also less than palatable because the cognitive effort is perceived as too great (see e.g., Berlyne 1971).

For the detainee, music is at the same time purely **noise** and a puzzle, but not one that has any aesthetic value: for detainees such as Begg and Vance (see Cusick 2008a), their experience of music in detention was mainly one of sensory deprivation and masking: loud music functioned to isolate and irritate and was often boring and overly familiar although sometimes absurd. Vance in particular notes the effect of being exposed to random changes in the choice of music, often mid-track, on his ability to think. For Begg in particular, the music served to block out sounds that otherwise provided useful information about the real environment. These aspects of music fit neatly into the sensory deprivation techniques described in the CIA manuals that implicitly or explicitly informed their interrogations. The acoustic environment was loud, artificial, and unpredictable: hardly useful stimulus information for engaging meaningfully with the already impoverished and unfamiliar surroundings of detention.

For detainees with less familiarity with the music of their interrogators, there is an additional set of perceptual challenges. It is not just that the music is unfamiliar noise, although certainly that is one dimension of the experience: the additional challenge is that, along with removal of the detainees' abilities to explore the sources of sounds (or indeed control them), such efforts to identify sound sources are largely pointless. In such a situation, there is no room for interpreting the sounds at all and the choice of music is simply loud *and* foreign. The only causation to be perceived is that of the interrogator choosing to play or stop playing the music, a power that can be exploited to punish or reward or simply to confuse. The only way of going beyond this is to imagine, and imagination in such a situation is probably only a source of fear of the unknown.

Cusick's account of al-Qatani's interrogation (2008a) provides yet a third way in which interpretative action functions. Here, it is not unfamiliarity *per se* that creates stress and confusion, it is the way in which imagination is superseded by active interpretation of musical stimuli: the interrogators and al-Qatani engage in a narration of the music which, for the detainee, becomes dissonant and problematic: the music that troubles al-Qatani most is the Arabic music that is played: the other music is distressing for the reasons cited above, acting more as noise than in a more subtle manner, but the Arabic music opens up what turns out to be a distressing dialogue about Islamic culture's attitudes to music, one which, according to Cusick, he loses.

<1>Conclusion: Music, Torture, and the Necessity of Experience

It would be wrong to claim that enforced listening to music in detention is a simply a malevolent distortion of the ways in which we are exposed to the uses of music by marketers (see above), however inescapable that soundtrack might be: for many detainees in recent conflicts there is such a disjunction between the musical cultures of interrogator and prisoner that music functions as mere noise. The subtler emotional impacts of music in advertising, require us to recognize and decode styles and structures of music in a way only possible for the acculturated. Where detainees share a musical history with their captors, such subtle effects are still possible, and, for Vance (see Cusick 2008a), the presentation of music with emotional impact became extremely distressing due to its lack of fit with the setting of detention and interrogation. However, in all these situations, regardless of the effectiveness of choosing a soundtrack for torture, there is a deeper implication of the use of music in these situations, one which exposes a fundamental disagreement within psychology about the application of psychological methods to influence behavior. To understand where this comes from it is necessary to first take a diversion from direct discussion of music and focus instead upon the

roots of psychological warfare in the field of public relations and propaganda. To this end I will contrast the conclusions that Bernays (1942) and Gibson (1939) drew from the effectiveness of propaganda in influencing public opinion in times of conflict.

Bernays' work on propaganda and public relations (see e.g., Bernays [1928] 2004) developed in part from his work in the First World War within the Committee on Public Information in the United States. For Bernays, there was no conflict between the idea of a free society and the use of propaganda to influence political opinions. Indeed, in an essay written during the Second World War, Bernays (1942) sets up a clear platform for combating the authoritarian and highly effective use of Nazi propaganda with Allied propaganda. The moral justification for this rests upon a belief that it is possible to coerce public opinion in an ethical manner, that if the ends are good, then the means of persuasion can be justified. Moreover, Bernays' approach was characterized by an underlying exhortation that propaganda should not lie; a restraint not always followed by practitioners and, in areas of ambiguity, a matter of judgment.

Gibson, writing just three years earlier, had a rather different view of propaganda, which conditioned his later desire to focus his empirical research on, and theoretical writing upon, the idea that direct experience (unmediated by visual displays, writing, or even language) provides much richer and less unambiguous source of information about the world than proposed by cognitive and social psychologists. For Gibson, the deception of German people (particularly into anti-semitism) through propaganda in the 1930s was a reason to suspect all propaganda, because it is inherently deceptive. The answer, for Gibson, was to direct psychology away from the study of preconceptions, and the social influence that seeks to reinforce them, towards the study of direct perception:

Our world, more especially our world of social objects, is understood in terms of preconceptions, preexisting attitudes, habitual norms, standards, and frames of reference. When the preconception is sufficiently rigid, an object will be perceived not at all in accordance with the actual sensory stimulation but in congruence with the preconception. No psychological law has been more exhaustively demonstrated than this one. Preconceptions of this sort, moreover, are wrought out socially and modify individual judgments. This fact also has been amply demonstrated both inside and outside of a laboratory. A preconception that is socially reinforced becomes a norm or standard for everybody. It becomes verbally symbolized in the process and thereby is stereotyped and strengthened. Each individual adopts and internalizes it, forgetting its imitative origin, and incorporates it in his repertory of values and opinions (1939, 165–166).

When applied to the context of music and its use to influence behavior, to coerce, it becomes clear that regardless of the setting, such a co-option of an emotionally powerful and unavoidable stimulus is another way in which the powerful seek to control the weak: it is a method for preventing an individual from hearing their environment and is one part of the creation of a setting whereby direct experience is limited to a space controlled by others. The problem with music in torture, then, is not that music is corrupted by the interrogator but that it is used to curtail experience, rather than being a stimulus for further interpretation and exploration. In detention, the aesthetic of music is that of fear: imagination of the worst replaces any other possible interpretation. Music becomes a stimulus for social control, and the ideal subject is the detainee who cannot escape, who cannot explore and discover the world through direct experience. The coercive use of music is just one way in which the experience of an individual in detention is eroded, reifying a view of human beings that Gibson derided:

The greatest myth of the twentieth century is that people are sheep. Our intellectual culture has been built on the idea that ordinary people tend to see things as others want them too, with little independence of mind. This is a pernicious assumption... .It was Gibson's purpose to undermine such thinking (Reed 1996, 162).

Whereas propagandists and marketers might tacitly assume that human beings are as passive and directable as "sheep," using music to influence through the control of auditory information, the interrogator forces the prisoner into a passive mode of engaging with sound, one in which propaganda has clearly failed in its mission to persuade. Music used in this way is a tacit admission that persuasion through musical influence has been abandoned to brute force: like Bellman (2007), I can only conclude that it is torture that is ethically repugnant, with music playing a minor, and paradoxically unmusical role. This role is in direct contrast to the utopian (and possibly naïve) view of music as a propaganda tool advanced by Young (1954) or Szafranski (1995), one in which enemies of the United States could be influenced by exposure to US cultural products such as music:

Saudi Arabia recently joined China as the most recent nation to outlaw satellite television receivers. One can easily appreciate the effects that Music Television (MTV) might have on such cultures (Szafranski 1995).

It is as if, faced with an enemy that was often not susceptible to such influence due to its rejection of music as an acceptable mode of expression, the US military and intelligence communities reacted by attempting to maintain this belief in the power of music, whilst simultaneously undermining its aesthetic potential. The coercive, and hence restrictive, nature

of using music in detention and interrogation turns music, at its most degraded, into noise, and at its most sophisticated, into a stimulus for a fearful imagination.

<1>References

- Aitken, J. C., S. Wilson, D. Coury, and A. M. Moursi. 2002. The Effect of Music Distraction on Pain, Anxiety and Behavior in Pediatric Dental Patients. *Pediatric Dentistry* 24: 114–118.
- Bellman, J. 2007. *Music as Torture: A Dissonant Counterpoint*. <https://dialmformusicology.com/2007/08/21/music-as-tortur/>. Accessed January 19, 2017.
- Bernays, E. L. (1928) 2004. *Propaganda*. New York: IG Publishing.
- Bernays, E. L. 1942. The Marketing of National Policies: A Study of War Propaganda. *Journal of Marketing*: 6 (3): 236–244.
- Berlyne, D. E. 1971. *Aesthetics and psychobiology*. New York: Appleton-Century-Crofts.
- Blass, T. 2007. Unsupported Allegations about a link between Milgram and the CIA. *Journal of the History of the Behavioural Sciences* 43 (2): 199–203.
- Brown, R. E. 2007. Alfred McCoy, Hebb, the CIA and Torture. *Journal of the History of the Behavioural Sciences* 43 (2): 205–213.
- Chrytoschek, K., dir. 2011. *Songs of War: Music as a Weapon*. A & O Buero.
- CIA. 1963. KUBARK Counterintelligence Interrogation. *National Security Archive Electronic Briefing Book No. 122*. Washington D. C.: George Washington University.
- CIA. 1983. Human Resource Exploitation Training Manual. *National Security Archive Electronic Briefing Book No. 122*. Washington D. C.: George Washington University.
- CIA. 2004. *OMS Guidelines on Medical and Psychological Support to Detainee Rendition, Interrogation, and Detention*. Langley, CIA.

- Clarke, E. 2005. *Ways of Listening: An Ecological Approach to the Perception of Musical Meaning*. Oxford: Oxford University Press.
- Clayton, A. 1978. Communication for New Loyalties: African Soldiers' Songs. *Papers in International Studies, Africa Series 34*. Center for International Studies, Ohio University.
- Cusick, S. G. 2006. Musicology, Torture, Repair. *Radical Musicology*, 3. <http://www.radical-musicology.org.uk/2008/Cusick.htm>. Accessed January 19, 2017.
- Cusick, S. G. 2008a. "You are in a Place that is Out of the World...": Music in the Detention Camps of the "Global War on Terror". *Journal of the Society for American Music*, 2 (1): 1–26.
- Cusick, S. G. 2008b. Music as Torture/Music as Weapon. *TRANS*, 8. <http://www.sibetrans.com/trans/articulo/152/music-as-torture-music-as-weapon>. Accessed January 19, 2017.
- Department of the Army. 1992. *FM 34-52 Intelligence Interrogation*. Washington, DC: Department of the Army.
- Department of the Army. 2006. *FM 2-22.3 (FM 34-52) Human Intelligence Collector Operations*. Washington, DC: Department of the Army.
- Fodor, J. A., and Z. W. Pylyshyn. 1981. How Direct is Visual Perception? Some Reflections on Gibson's 'Ecological Approach'. *Cognition* 9: 139–196.
- French Foreign Legion. 2016. *French Foreign Legion Songs and Marches*. <http://foreignlegion.info/songs/>. Accessed January 19, 2017.
- Gaver, W. W. 1993a. What in the World do we Hear? An Ecological Approach to Auditory Event Perception. *Ecological Psychology* 5 (1): 1–29.
- Gaver, W. W. 1993b. How do we Hear in the World? Explorations in Ecological Acoustics. *Ecological Psychology* 5 (4): 285–313.
- Gibson, J. J. 1939. The Aryan Myth. *The Journal of Educational Sociology* 13 (3): 164–171.

- Gibson, J. J. 1966. *The Senses Considered as Perceptual Systems*. Boston: Houghton Mifflin.
- Gibson, J. J. 1979. *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.
- Gittoes, G., dir. 2005. *Soundtrack to War*. Australia: ABC Video.
- Goodman, S. 2012. *Sonic Warfare: Sound, Affect and the Ecology of Fear*. Cambridge: MIT Press.
- Grant, M. J. 2013a. The Illogical Logic of Music Torture. *Torture* 23 (2): 4–13.
- Grant, M. J. 2013b. Music and Punishment in the British Army in the Eighteenth and Nineteenth Centuries. *The world of music (new series)* 2 (1): 9–30.
- Grant, M. J. 2014. Pathways to Music Torture. *Musique et conflits armés après 1945* 4: 2–19.
- Heft, H. 2001. *Ecological Psychology in Context: James Gibson, Roger Barker and the Legacy of William James's Radical Empiricism*. Mahwah, NJ: Lawrence Erlbaum.
- Hui, A. 2016. Aural Rights and Early Environmental Ethics: Negotiating the Post-War Soundscape. In *Current Directions in Ecomusicology*, edited by A. S. Allen and K. Dawe, 176-187. New York: Routledge.
- Johnson, B., and M. Cloonan. 2009. *Dark Side of the Tune: Popular Music and Violence*. Ashgate: Farnham.
- Juslin, P., and J. A. Sloboda. 2011. *Handbook of Music and Emotion: Theory, Research, Application*. Oxford, UK: Oxford University Press.
- Kenneally, T. 1982. *Schindler's Ark*. London: Hodder and Stoughton.
- Lagouranis, T., and A. Mikaelian. 2008. *Fear Up Harsh: An Army Interrogator's Dark Journey Through Iraq*. New York: New American Library.
- Lahmann, C., R. Schoen, P. Henningsen, J. Ronel, M. Muehlbacher, T. Loew, K. Trit, M. Nickel, and S. Doering. 2008. Brief Relaxation Versus Music Distraction in the Treatment of Dental Anxiety: A Randomized Controlled Clinical Trial. *Journal of the American Dental Association* 139 (3): 317–324.

- Lesiuk, T. 2005. The Effect of Music Listening on Work Performance. *Psychology of Music*, 33 (2): 173–191.
- McCoy, A. W. 2006. *A Question of Torture: CIA Interrogation from the Cold War to the War on Terror*. New York: Metropolitan Books.
- Neisser, U. 1978. Perceiving, Anticipating and Imagining. In *Minnesota Studies in the Philosophy of Science IX*, edited by C. W. Savage. Minneapolis: University of Minnesota Press.
- North, A. C., D. J. Hargreaves, and J. Mckendrick. 1999. Music and On-Hold Waiting Time. *British Journal of Psychology* 90 (1): 161–164.
- Pieslak, J. 2009. *Sound Targets: American Soldiers and Music in the Iraq War*. Bloomington, Indiana University Press.
- Reed, E. S. 1996. *The Necessity of Experience*. New Haven and London: Yale University Press.
- SEM. 2007. Position Statement on Torture. http://www.ethnomusicology.org/?PS_Torture. Accessed January 19, 2017.
- Shevy, M. 2008. Music Genre as Cognitive Schema: Extramusical Associations with Country and Hip-Hop Music. *Psychology of Music* 36 (4): 477–498.
- Sloboda, J. A. 2005. Assessing Music Psychology Research: Values, Priorities and Outcomes. In *Exploring the Musical Mind*, edited by J. A. Sloboda. Oxford: Oxford University Press.
- Smith, P. C., and R. Curnow. 1966. "Arousal Hypothesis" and the Effects of Music on Purchasing Behaviour. *Journal of Applied Psychology* 50: 255-256.
- Standley, J. M. 1986. Music Research in Medical/Dental Treatment: Meta-Analysis and Clinical Applications. *Journal of Music Therapy* 23 (2): 56–122.
- Szafranski, R. 1995. A Theory of Information Warfare: Preparing for 2020. *Air Power Journal*. http://www.au.af.mil/au/afri/aspj/airchronicles/apj/apj95/spr95_files/szfran.htm. Accessed January 19, 2017.

- Tansik, D. A., and R. Routhieaux. 1999. Customer Stress-Relaxation: The Impact of Music in a Hospital Waiting Room. *International Journal of Service Industry Management* 10: 68–81.
- Volcler, J. 2013. *Extremely Loud: Sound as a Weapon*. New York: The New Press.
- Welly, A., H. Lang, D. Welly, and P. Kropp. 2012. Impact of Dental Atmosphere and Behaviour of the Dentist on Children's Cooperation. *Applied Psychophysiology and Biofeedback* 37 (3): 195–204.
- Wilson, S. 2003. The Effect of Music on Perceived Atmosphere and Purchase Intentions in a Restaurant. *Psychology of Music* 31 (1): 93–112.
- Windsor, W. L. 2000. Through and Around the Acousmatic: The Interpretation of Electroacoustic Sounds. In *Music, Electronic Media and Culture*, edited by S. Emmerson, 7–35. London: Ashgate.
- Windsor, W. L., and C. de Bézenac. 2012. Music and Affordances. *Musicae Scientiae* 16: 102–120.
- Yalch, R. F., and E. Spangenberg. 1993. Using Store Music for Retail Zoning: A Field Experiment. *Advances in Consumer Research* 20: 632-636.
- Young, J. S. 1954. *Communist Vulnerabilities to the Use of Music in Psychological Warfare*. Washington D. C.: George Washington University.