ABSTRACT  The Mosquito is an ultrasonic device that uses sound to deter young people from loitering. The sound it emits is inaudible to most people over the age of 25 but is intolerable to those younger. By emitting this sound, the Mosquito stratifies space through sonic frequency and creates zones that are inhospitable to young people. Although the device has been marketed as a benign means of controlling space, the author argues that the Mosquito causes pain and therefore constitutes a weaponization of sound. Not only does the Mosquito threaten to deepen an already perceived rift between young people and adults, it abets the very notion of youth and adulthood as biologically different categories.

KEYWORDS  Crime prevention; CPTED; Environmental design; Sonic weapons; Youth

Introduction

In late 2005 the soundscape of U.K. cities turned hostile for young people. As shopkeepers and public institutions switched on a new gadget—a powerful sonic deterrent called the Mosquito—people under the age of 25 plugged their ears and fled. Bystanders older than a quarter of a century likely noticed nothing but the irritated and pained expressions of fleeing youth; for them the Mosquito was completely inaudible.

This dramatic scenario featuring a nefarious technology that only affects people of a certain age almost seems far-fetched, as though pulled from the pulpy pages of
a 1950s sci-fi novel. The reality, however, is rather banal: the Mosquito’s ultrasonic powers are effective because we all tend to progressively lose our hearing in high-frequency registers as we age, a physiological phenomenon known as presbycusis. Howard Stapleton, the inventor of the Mosquito, accidentally encountered this effect at an early age; as a young boy, Stapleton had been chased from his father’s factory by the ear-splitting din of an ultrasonic welding machine. But the factory workers were puzzled by his reaction; they had not heard a thing (NPR, 2006). The impetus to exploit the phenomenon eventually arose when the inventor’s 15-year-old daughter was harassed by a group of teenagers loitering outside a shop. Stapleton realized that sound might be enlisted to eliminate the epidemic of antisocial behaviour that has famously plagued Britain and ultimately make the city safe for his daughter.

Since the Mosquito’s introduction the device’s manufacturer, Compound Security Systems (CSS), has gone on to sell more than 6,000 units worldwide (CSS, 2009). The company has consistently marketed the device as a safe, effective deterrent to loitering youth. According to a sales brochure, the Mosquito “is not a weapon, it is not violent, it does not hurt” (CSS, n.d.). This notion, that the device can control the comings and goings of certain types of people within a space, allegedly in a non-aggressive manner, would seem to align it with a tradition of public safety management called Crime Prevention Through Environmental Design (CPTED). Seeking to re-engineer the urban environment in such a way as to discourage criminal behaviour, CPTED emphasizes lighting and open, self-monitoring spaces as a means of making criminal activity visible. In the early 1990s sound was added to the CPTED repertoire as businesses began to employ easy-listening and classical music as deterrents (Cloonan, 2002; Hirsch, 2007; Sterne, 2003). The objective of this tactic is to offend the tastes and sensibilities of young people to the point that they move on in mild disgust. It is a subtle, non-confrontational way of making a space uninviting to those who find the music obnoxious or lame. But, of course, there is a world of difference between distaste and pain. And as we will see, the Mosquito arguably causes pain; it is a weapon that creates zones of discomfort intense enough to drive young people out of its range.

To anyone paying attention to the U.S. Army’s deployment of music as a part of its “no-touch torture” policy, the assertion that the Mosquito is not a weapon, that it does not cause pain, has a sinister resonance. The army has used sound in a similar fashion to break prisoners specifically because it does not cause lasting physical damage (Cusick, 2008). But an assault does not necessarily need to leave a cut or a welt to cause harm. According to studies commissioned by CSS, the Mosquito is incapable of causing long-term hearing damage or other physical injury (CSS, Downloads, 2009). But pain is subjective and is not simply reducible to lasting physical damage. And such assessments evade what is most damaging and problematic: the tension and hostility between social groups that the Mosquito reinforces or even causes. The device effectively drives a wedge between two arbitrarily designated categories: youth and adult. As we will see, the ambiguous distinction between these two groups has been constructed as biological, a distinction that has been further reified by the Mosquito. As such, the device appears to operate on some sort of transcendental plane, in accor-
dance with some fixed law of nature. But the device is one technology in a long line of technics that have abetted the construction of youth as a biological category, discrete and distinct from adulthood. It has isolated one group of individuals and then conveniently profiled it as antisocial and problematic.

By using sound to demarcate space, the Mosquito allows its user to assert control over a territory. But far from functioning as a sort of sonic fence, the device institutes a wholesale alteration of the soundscape. Of course, this is not the first time a technology has changed the acoustic environment: the rise of industrialization in cities that began in the nineteenth century introduced all kinds of technological marvels but concomitantly spawned new mechanical dangers and nuisances. The din of factories, automobiles, and new construction technologies beset city-dwellers. Although the Mosquito is not an urban technology per se, it is important that it be discussed in the context of a long history of debates about noise that have played out in cities. At stake is who is permitted to make noise and who has recourse to its abatement; noise is almost always a power relation (Attali, 1985). What is particularly interesting about the Mosquito is that it has the power to make spaces noisy, unbearably so, for some people but not for others. The Mosquito weaponizes segments of the acoustic environment, thereby making certain spaces inhospitable—even uninhabitable—for young people. This raises interesting questions about sound and its ability to create, shape, and, in some cases, control space.

**Marking territory: CPTED and the control of space**

While easy listening music as a whole gets little respect, the trademark Muzak is often flippantly used to stand in for whatever bland form of music a given listener would rather not hear. In his ode to easy listening music, *Elevator music*, Joseph Lanza (2004) reminds us that mood music is far older than Muzak's long-derided brand. The Muzak Corporation's experiments on music and psychology are well known: in the 1930s and '40s the company developed what it called Stimulus Progression, a technique for alleviating the tediousness of wartime industrial production. According to Lanza (2004), “The idea was to combat monotony and offset boredom at precisely those times in a work day when people are most subject to these onslaughts” (p. 49). Music was thought to be able to control moods, to increase productivity in factories, and to encourage consumption in the shopping malls that were sprouting up all over the United States. Not until the 1990s did institutions and businesses begin piping music into public and private spaces, not for the purpose of stimulation, but to chase away young people. The technique, what Jonathan Sterne (2006) refers to as “non-aggressive music deterrents” and others have called “The Manilow Method” (Hirsch, 2007), presumes a generational, aesthetic antipathy strong enough to negatively alter a group's relationship to a space. The deployment of non-aggressive music assumes that young people will interpret the music as a message telling them that they are not welcome. Sterne (2006) writes,

> As a form of urban white noise, [non-aggressive music] instrumentalizes musical taste to chase people away ... [P]rogrammed music used in this fashion will help blanket over the din of social difference by limiting interactions
between their desired clientele and publics who make them uncomfortable, whether they be teenagers, homeless people, or others.

Such a use of music as a deterrent falls squarely within the principles of CPTED; its “conceptual thrust … is that the physical environment can be manipulated to produce behavioral effects that will reduce the incidence and fear of crime, thereby improving the quality of life” (Crowe, 2000, pp. 33-34). The four pillars of CPTED—natural surveillance, territorial reinforcement, natural access control, and target hardening (Otterstatter, 2006)—are geared toward creating open and self-monitoring spaces, and, most importantly, making it clear what types of people and behaviour are permitted. Typical examples include planting hedges in front of walls to make graffiti writing difficult, adding crossbars to benches to prevent people from sleeping on them, and installing prominent surveillance cameras. These are techniques for control at a distance; they code space, creating a semiotics of use that is presumably legible enough to prevent its misreading, thereby deterring misuse. For Mike Davis (1992), “The totalitarian semiotics of ramparts and battlements, reflective glass and elevated pedways, rebukes any affinity or sympathy between different architectural or human orders … This is the archisemiotics of class war” (p. 231). We might consider non-aggressive music deterrents as a sonic counterpart to this more typically visual strategy. Muzak, easy-listening, or classical music are deployed as subtle semiotic and aesthetic tools; non-aggressive music deterrents make the “proper” use of space legible. Saccharine instrumental covers of pop songs are piped into spaces to promote “correct” behaviour and subliminally create an atmosphere of “maturity” meant to be uninviting to youth.

There is nothing inherently unpleasant about musical deterrents; the volume must be kept low lest Manilow and Mozart chase off older adults as well as young people. But it is assumed that older people will tolerate, ignore, or perhaps even enjoy the music. The technique is only effective to the extent that it offends its target; the intent is that youth will try to avoid having the music’s overbearing “uncoolness” somehow rub off on them (Hirsch, 2007, p. 350). As it stands, there is little evidence to suggest that the Manilow Method actually works. One of the obvious problems is the variability of taste; there is no such thing as a universally disliked piece of music (Vaisman, 2001). In fact, it would seem that non-aggressive music deterrents only are effective as part of a broader anti-loitering strategy, which might include surveillance cameras, security patrols, and the like (Sterne, 2006).

As we’ve seen, non-aggressive music deterrents code and stratify space, segregating it along generational lines. As such, they articulate and/or reinforce the divisions between private and public. Windows, doors, and other exclusively tangible barriers were once the primary means of signifying the limit between inside and outside; non-aggressive music deterrents, however, allow property and business owners, as well as authorities, to also lay claim to the space outside of shops and institutions, circumscribing it as within the sphere of their influence (Sterne, 2006). The view from above shows that in doing so they redraw the topography of belonging as though space can be demarcated in absolute ways. But, according to Doreen Massey (2005), “There are no such rules, in the sense of a universal politics of abstract spatial forms; of topo-
graphic categories. Rather, there are spatialised social practices and relations, and social power” (p. 166). To demarcate space is tantamount to making a territorial claim; space is parcelled out and becomes property. We are accustomed to walls rendering these rationalizations solid and, although sonic boundaries might seem more permeable, they are still an assertion of the right to control.

In the cases of both the Mosquito and non-aggressive music deterrents, power is delegated to non-human actors; it is broadcast via speakers and transmitted through the sound. This has the effect of further isolating young people from authorities who, rather than forming any type of relationship with them, enact control at a distance. Such a passive-aggressive means of control is more efficient, subtle, and economical than having security guards or police officers tell potential troublemakers to move on. Non-aggressive music deterrents embed messages in spaces and construct zones that are coded with hostility toward young people. But the Mosquito goes even further: it makes spaces painful to young people and only to young people.

Given the way the Mosquito has been promoted, one might mistake it for a textbook example of CPTED. It is sold as another harmless way of making space uninviting to teenagers. In doing so, it “[m]akes your store a safer & friendlier place for customers & staff” (Moving Sound Technologies Inc., n.d.). But if the effect of the Mosquito is consistent with the aims of CPTED, the method is certainly not. CPTED limits itself to inscribing a space with signals that project authority and instruct individuals as to how to conduct themselves. None of its techniques cause physical pain or harm. The Mosquito does. As such, it should be understood as a weapon. Non-aggressive music deterrents use taste to cause aesthetic irritation; they do not cause harm, nor are they intended to. And there is a significant difference between irritation caused by distaste and the discomfort of physiological or psychological pain.

Although some have described the use of non-aggressive music deterrents as a weaponization of sound, (Sterne, 2006; Hirsch, 2007) this classification is largely rhetorical. It is true that using music to make young people uncomfortable is oppressive and is arguably an abuse of power. However, it is important that we make a distinction between the use of non-aggressive music deterrents and the weaponization of sound. However distasteful they may be to certain people (or groups of people), aesthetically based deterrents are physically tolerable. They simply send a culturally coded message: “You are not welcome here.” The Mosquito, on the other hand, is not a messenger; it is an aggressor. Its power to deter young people resides in its ability to cause pain and discomfort to anyone young enough to hear it.

**The birth of modern noise and the sonic stratification of space**

Although the Mosquito is by no means strictly an urban phenomenon,¹ it is instructive to consider its appearance in the context of a long-standing conflict involving noise and space that has played out primarily in the city. Urban spaces have always been noisy, a reality that has historically meant different things to different people. But whereas traditionally noise has generally been a nuisance to all city-dwellers, the Mosquito is only a problem for a small minority.

In 1913 Luigi Russolo (2004) proclaimed, “In the nineteenth century, with the invention of the machine, Noise was born” (p. 10).² Russolo, of course, was prone to
the manifesto-style hyperbole of his era. Yet it is important to point out that over the nineteenth century the character of sonic disruptions became increasingly mechanical (Thompson, 2002). Modern city-dwellers had to contend with the ever-growing clamour of automobiles, industry, radio and recorded music, airplanes, sirens, et cetera. Some people may have been more bothered by the noise than others, but the din was there for everyone to hear. Not only was it pervasive, everyone ineluctably played a part. Noise was seen as an inevitable consequence of modern progress. Karin Bijsterveld (2008) notes that “with the emergence of the mass consumption of cars, traffic noises became less commonly attributed to the behavior of particular groups of people—and thus with public education—and more often conceptualized as a collective phenomenon” (p. 255). In other words, as modern city-dwellers were carried along by the wave of technological progress, they became inadvertently responsible for the din of the modern soundscape.

One of the early solutions to the noise problem, according to Emily Thompson (2002), was to “create special zones of quiet in particular areas of the city. Zoning in general was an attempt to legislate the landscape of urban life, to control not only its physical appearance but also the behavior of those who inhabited it” (Thompson, 2002, p. 125). Noise and silence became topologically describable quantities. But sound is difficult, if not impossible, to contain; it spills over fences and can vibrate through walls. By mid-century, modern technology had flooded the close, adjoining spaces of the city with sound—recorded music, radio, television, et cetera. In one’s own home, the sounds of these machines might be a source of joy or entertainment, but they can quickly become objects of annoyance as they seep through walls. Noise is often defined as “unwanted sound,” and is both quantitatively and qualitatively subjective (Schafer, 1977). We are irritated by certain types of sound and not by others. Some sounds can be irritating even at low volumes—the repetitive dripping of a tap, for example. As sound invades what one considers private space, it can become a point of contention.

Emily Thompson (2002) describes two cases from the 1920s that tellingly illustrate the extent to which noise is difficult to pin down as an absolute quantity. In the first, a man complained to the police that the music his socialite neighbours played at their parties made it impossible for him to sleep; it was noisy. He took his neighbours to court, citing their co-op’s rules forbidding music after 11:00 p.m. In their defence, the neighbours and their witnesses argued, “The music performed was of the best ‘artistic character,’ and therefore could not constitute noise at any time of day or night” (Thompson, 2002, p. 129). The case was dismissed. In the second incident, a violinist was accused of disturbing his neighbours. In his defence, he played his violin, bringing the court to tears. The case against him was also dropped.

It seems safe to say that no such aesthetic ambiguities exist when it comes to the Mosquito. There is no question that, for those who are young enough to hear it, the Mosquito is noisy. And it presents a strange problem: although discourse about urban noise has tended to be concerned with how noise moves across space, the Mosquito has added a non-spatial dimension to the debate: frequency. In theory the range of human hearing is from 20 hertz to 20 kilohertz, but for the majority of us that range
is much more limited. It has already been noted that as we age, we tend to lose the higher range of our hearing. The Mosquito emits a sound that modulates between 17.5 and 18.5 kHz, a frequency range that most people over the age of 25 are no longer able to hear. The result is the stratification of acoustic space and the creation of differential zones of sound. The acoustic spaces that the Mosquito creates are simultaneously silent and noisy depending on one’s age or sensitivity of hearing. The Mosquito makes pockets of the soundscape painful to young people without having any effect at all on others.

The extent to which the soundscape is integral to our sense of well-being is often taken for granted. The sound of a loved one in the next room might create a sense of security and familiarity, while one might consider the noise of a neighbour’s television annoying or even an infringement on one’s privacy. An individual’s relationship to sound and place is highly subjective, symbolic, and can change over time. The Mosquito is engineered to create a soundscape that is deliberately hostile to young people. It produces an abstract sound that has no referent. Because of its seeming lack of referentiality, the sound of the Mosquito almost seems sourceless, as though the noise is coming from within one’s own head. In her pioneering work on pain, Elaine Scarry (1985) writes, “[Pain] is not of or for anything. It is precisely because it takes no object that it, more than any other phenomenon, resists objectification in language” (p. 5, emphasis in original). If pain cannot be attributed to a visible mark—a cut, a welt, a bruise—it becomes anecdotal and difficult to legitimate. Because the Mosquito does not seem to cause long-term hearing damage or mark the body, the question as to whether or not it causes pain is generally overlooked. But the Mosquito hurts young people to the point that are unable to occupy a space; as such, it should be considered a weapon.

The weaponization of sound

Music and sound have been deployed in war for millennia in order to intimidate enemies. Drums, fanfare, and battle cries operate at a symbolic level: they are meant to inspire fear in, but not directly harm, the enemy. In a particularly infamous scene in Apocalypse Now, Lieutenant Colonel Kilgore (Robert Duvall) shouts, “At about a mile up we’ll put on the music … I use Wagner. It scares the hell out of the slopes.” Wagner’s Ride of the Valkyries itself is not a weapon; its use in the film indicates the threat of violence, a warning of the imminent deployment of force. If we draw a distinction between music that intimidates and music that harms (as we shall see, music has been used to torture), clearly Muzak and other non-aggressive deterrents, including the above examples of music used in war, cannot be considered weaponized.

There have been many attempts to actually weaponize sound, to make it inflict (and not simply represent or pre-empt) violence. There is good reason to believe that around World War I, both Great Britain and Japan were attempting to develop lethal acoustic weapons (Broner, 1978). However, the majority of research on sonic weaponry has focused on non-lethal applications. Beginning in the 1960s there was a brief surge of interest in infrasound when Vladimir Gavreau, a French robotics researcher, discovered that the machinery in his laboratory was causing the building to vibrate at a subsonic frequency (roughly 7 Hz). Gavreau speculated that he could
harness the power of infrasound to produce weapons, but the only people ever harmed by his quixotic research were himself and his staff (Broner, 1978). In fact, most sonic weapons seem to have been more the product of fantasy than of science. Take, for example, the “squawk box,” a device that could theoretically focus two ultrasonic sound beams to create an unbearable infrasonic difference frequency. Post-Cold War rumours circulated that American and Russian researchers had invented a machine capable of shooting acoustic bullets 0.5 to 2 metres in size (Altmann, 1999). Whether any of these weapons were ever developed, let alone deployed on the battlefield, is apocryphal.

What seems to be the first bona fide sonic weapon made its debut, in the media at least, on November 7, 2005, when pirates attacked a cruise ship off the coast of Somalia. Equipped with a Long Range Acoustic Device (LRAD), the ship was apparently able to repel its attackers with bursts of extremely loud sound (Blenford, 2008). Since then, LRADs have been deployed by law enforcement agencies to control crowds and force suspects from their hideouts, a tactic that echoes the U.S. military’s attempt to flush dictator Manuel Noriega out of hiding by blaring rock music during the 1989 invasion of Panama. Given that Noriega had retreated to a nunciature belonging to the Vatican, removal by force was not an option. In this case, the military’s use of music was not announcing or symbolizing an impending raid; rather, the music itself was used in an attempt to cause the dictator distress (Cole, 1995). Through its intent to harm, music was transformed into a weapon.

Music, in addition to other forms of sensory manipulation and/or deprivation, has become an integral part of a “no-touch torture” technique developed in North America after World War II. Suzanne Cusick (2006) has exposed the U.S. military’s use of music to interrogate and torture prisoners in Afghanistan and Iraq as a component in a battery of techniques designed to disorient and ultimately break detainees while attempting to avoid causing them any lasting physical damage. Although these techniques are not supposed to cause long-term harm (and it is unclear whether or not they have), these techniques are evidently psychologically abusive. The case of Muhammed al-Qatani is particularly troubling. A devout Muslim, al-Qatani believed that it is sinful to listen to music of any kind. According to Cusick (2008), “His interrogators had taken full advantage of music’s peculiar properties as a sensory experience, a site of cultural belief, and a medium of cultural practice to force al-Qatani into a conscious state of sin he was powerless to avoid” (p. 15). Interrogators have subjected detainees to barrages of ultra-patriotic songs, rap, and heavy metal in order to assert control and grotesquely underline American authority. This so-called “futility music” is meant to break prisoners, to convince them that there is no point in resisting.

Cusick (2008) also describes the experience of an American named Donald Vance who was detained at Camp Cropper in Iraq and was subjected to what he calls “the music program.” Vance was subjected to a constant barrage of Queen, Nine Inch Nails, and other Western music blaring from a military sound system. For Vance it was not just the volume and the relentlessness of the music that undid him, it was its familiarity: “Listening to songs that I would play at home ... within that place, drove me into tears” (quoted in Cusick, 2008, p. 22). The symbolism of music for Vance was
transmuted into emotional pain; for al-Qatani, exposure to music became a spiritual form of suffering. The final report of the investigation into detainee abuses at Guantanamo Bay found that, because these practices did not seem to cause any lasting physical damage, they could not be classified as torture (Cusick, 2008).

It would be inappropriate to insinuate that the use of the Mosquito is a form of torture. No one is forced to listen to it for hours at a stretch; those who are able to hear it are free to move on (indeed, those who have purchased one to defend their storefront hope that is exactly what young people will do). But the manufacturer of the Mosquito has employed a logic similar to that of the U.S. military in repeatedly touting the safety of its product by arguing that it does not cause lasting physical harm of any kind. However, a sample of responses from young people tells a different story: “It kinda hurts my head a lot.” “It gives me a headache and can make me feel sick … if I’m left too long.” “It’s this ringing in your ears … very unpleasant.” “It’s really painful, I wouldn’t sit here much longer” (ABC News, 2006; CBC News Vancouver, n.d.). Those targeted by the Mosquito are in fact reporting physical pain (rather than emotional or spiritual suffering) as a result of exposure to a certain sound. But since no lasting physical damage has been measured, CSS continues to insist that its product is safe and harmless. It is interesting to note that information culled mainly from occupational safety reports commissioned by CSS suggests that significant and ongoing exposure would be required for hearing loss to occur (Lawton, 2001). But, given that most young people cannot bear the sound of the Mosquito for more than 10 minutes at a time and are always free to leave the places where the device has been installed, there seems to be little danger of this. Nonetheless, even CSS’s own research could easily be construed as an acknowledgment of the fact that lasting damage is in fact possible, however unlikely it may be to occur.

So is the Mosquito a weapon? Or is it merely a tool for making neighbourhoods safe and free from graffiti and other such nuisances? First, it must be noted that the category “weapon” is unstable. As Elaine Scarry (1985) suggests, “The weapon and the tool seem at moments indistinguishable, for they may reside in a single physical object” (p. 173). Using Scarry’s distinction, we might note that sound is often used as a tool. Ultrasound, for example, has many medical applications and is also used to clean metals. We might consider musical sound as a sort of tool in that it can be used to regulate behaviour and can help to reverse or alleviate certain medical conditions (Sacks, 2007). Alarms and sirens employ loud, piercing sound as a tool to signal danger. But sound can also provoke anxiety, discomfort, and even pain. The sound that the Mosquito emits is not dissimilar to the shriek of a smoke alarm. However, a smoke alarm, while certainly irritating, is intended to alert all people within earshot; any temporary pain or discomfort is mitigated by its benefits—for everyone, regardless of age. The Mosquito only benefits those who are immune to its effects. In other words, adults use the Mosquito against young people. By modulating the properties of sound that might make it useful as a tool—as in the case of the fire alarm—toward pain, the Mosquito weaponizes sound. This type of modulation of use is well illustrated by the water cannon: when used by firefighters it is a tool for putting out flames; turned against a group of protesters, it is a weapon.
In positioning the Mosquito as another prong in the CPTED strategy, one could argue that it is benign and largely symbolic, therefore it is a tool. But the piercing tone of the Mosquito is not simply symbolic; it actually causes enough physical discomfort to force young people out of its range. The measure for harm should not be whether or not something causes lasting or even visible physical damage. Pain can also be psychological; in this mode it becomes entirely subjective. Elaine Scarry (1985) writes, “To have pain is to have certainty; to hear about pain is to have doubt” (p. 5). If no lasting physical damage is evident, stories about pain become hearsay; a young person’s subjective experience becomes the only defense against the findings of science.

In April 2008, a 38-year-old mother of four in South East Wales filed a complaint with her local council (BBC News, 2008b). She claimed that a Mosquito near her house was preventing one of her children from sleeping. Apparently the problem was serious enough to require moving him to his aunt’s house. But the noise was not just a problem for the son; the mother could hear it as well. In this case, not only did the Mosquito affect people outside of its intended range, it failed to work as advertised: it succeeded in hurting someone over the age of 25. Again, pain and suffering have degrees. Sleep deprivation can amount to torture and, in this case, it led to a mother having no choice but to send her child away. As this story illustrates, in the war against antisocial youth, there has been significant collateral damage.

The sonic construction of youth

The perceived need for such a thing as a youth deterrent hangs on the idea that the category “youth” in fact exists as a discrete life stage. Given the extent to which youth is codified institutionally—for example, through laws that set an age threshold for the right to vote, to drive, to buy alcohol or cigarettes—the upper limit of this bracket is invested with an artificial significance. For Pierre Bourdieu (1993), youth is a category that is socially constituted, “manipulated and manipulable,” whose meaning must be reassessed across varying fields of study (p. 95). The delimitation of youth is strategic and can shift depending on context. Mary Bucholtz (2002) notes, “Preadolescent children accused of committing violent crimes may be classified as adults in the U.S. legal system; by the same token, young people in their 20s have been labeled children in discussions of child labor” (p. 528). Lawrence Grossberg (1992) describes youth as a liminal stage, a period of transition between childhood and adulthood: “Youth is a cultural rather than a biological category. It is not a universally present moment of human life, nor is there some essential meaning to it. It is as much a question of style as either age or social position or experience” (Grossberg, 1992, pp. 176-177).

For Grossberg, the youth culture that the baby boomers engendered was marked by its excessiveness and its self-indulgence. As a generation rebelled against adult authority, stayed out late, experimented with drugs, and listened to rock music, it became necessary for the young body “to be located in its own proper places and its movement had to be surveilled and constrained” (Grossberg, 1992, p. 177). At the same time the young body was becoming more easily identifiable—a visible minority—not solely for being young, but for manifesting styles and appearances that differentiated it from the adult body (Hebdige, 1979). Style is a means for young people to express themselves; however, it concomitantly makes them, or more properly their subculture,
visible to adults. Visible manifestations of youth culture make the brackets around this age group seem real. As young people move into adulthood they have tended to shed these signifiers. Age categories have not been established exclusively through visible cues. Sonic identification of young people might be said to have a similar lineage. Certain musical styles and trends have been associated with young people at least since the swing era. However, the advent of rock 'n' roll in the early 1950s forever welded the idea of wild, inaccessible sounds to the idea of youth, a notion that would endure from hippies to hip hop (Danesi, 2003). The Mosquito represents an interesting juncture in this trajectory: it is possibly the first example of sonic frequency being used to separate young people from adults.

Distinctions between youth and adulthood are cultural, not physiological. What makes the Mosquito novel is that it seems to have the power to reinforce a putative division between biological life stages, a division, however, that it is entirely arbitrary. The Mosquito appears to offer up youth as an empirically real category and it does so through sound. Because its effectiveness is based on a physiological phenomenon, the Mosquito would seem to have science, or even the laws of nature, on its side. But the device delimits youth in a way that is blatantly tautological: all those who can hear the youth deterrent are defined as youth. Surprisingly, the manufacturer uses the terms “teenager” and “youth” almost interchangeably. On the CSS FAQs page, in answer to the question, “I am not a teenager, will the Mosquito™ annoy me?” the manufacturer responds, “This is very unlikely and research has shown that the majority of people over the age of 25, have lost the ability to hear at this frequency range” (CSS, Frequently asked questions, 2009). If the device is meant to deter teens, as its promotional literature explicitly states, it should be equally successful in repelling 20- to 25-year-olds, an age group that is by most measures past the threshold of youth. It remains to be seen how young professionals or graduate students in their mid-20s might feel about being folded into a social category singled out for its tendency to engage in antisocial behaviour. What must be underscored is that the Mosquito deters young people within an age bracket determined by biological rather than cultural realities, and does so irrespective of their behaviour or maturity. Indeed, one of the frequent criticisms levelled at the Mosquito is that it targets young people indiscriminately. Howard Stapleton, the inventor of the Mosquito, recently stated, “I never intended it to make kid-free zones but to combat anti-social behaviour and it should only be used where there is that” (quoted in “British Inventor of Teen-Repellent Device Wants Laws Regulating It,” 2008). But the device does not target behaviour: it targets youth. Singling out individuals rather than conduct, according to legal scholar Charlotte Walsh (2008), could be construed as criminal harassment.

The Mosquito can be activated by motion sensor, remote control, even via text message, but no matter how or when it is activated, it does precisely what Stapleton claims he had not intended to do: it creates kid-free zones. It is equally effective in causing discomfort in young vandals as it is in irritating innocent younger adult bystanders. It does not matter whether they are intimidating customers or just waiting for friends, they are just as liable to be driven away, or, in the case of the young family, prevented from sleeping and separated from each other. For shop owners, this
means forcing their under-25 clientele to run a sonic gauntlet to have access to the same services as older clients. It seems that for some businesses alienating a few potential customers is an acceptable cost in establishing what amounts to a generational filter. The hostile spaces that the Mosquito creates are meant to unblock a perceived obstruction to consumption. Groups of youth are seen as intimidating to customers whether they pose an actual threat or not. In allowing the Mosquito to be used against them, communities are allowing for the demands of consumers to trump the rights of young citizens. Policies that support the use of discriminatory deterrence, according to Peter Fisher (1995),

are based on a utilitarian individualism that denies the existence of community and defines the social good as simply the sum of individual desires. The individual, in turn, is a consumer and a factor of production, but not a citizen; citizens have rights, consumers have only demands. And the only kind of demand that counts is an effective demand—which is to say, willingness and an ability to pay. Needs and wants not backed up with the income to purchase their satisfaction do not count. (p. 47).

In a social milieu that permits the use of the Mosquito, youth are not only devalued for their inability to “properly” participate in consumption, they are demonized for supposedly interfering with what are perceived to be its normally smooth workings. The Mosquito widens the gulf of understanding between generations, reinforcing an already deep sense of mutual suspicion and contempt.

Young people hang out. They work through shifting, fledgling identities; they test the limits of power. They do this in groups and they do it in public. Conflict with adults is a part of the process. As L. A. Visano (2006) suggests, we must not let mainstream culture define youth through exclusion; to do so is to deny young people agency. In framing youths as deviant or antisocial, we not only prejudge what could arguably be considered a visible minority group, we run the risk of reinforcing the idea that they exist outside of the social mainstream. Visano writes: “Youth relations are indeed characterized by identifiable and organized sets of social meanings. As they emerge from social interactions youths learn who they are by having appraisals of the self reflected back to them by others” (2006, p. 11). While clearly the exclusion of youth from the rest of society is problematic, it has at least until relatively recently involved some sort of interaction—even if confrontational—between generations. By delegating such confrontations to machines like the Mosquito, older generations are refusing to engage with youth and participate in their socialization. As such, they are inadvertently contributing to the growing problem of antisocial behaviour in youth.

Conclusion: Détournement, kitsch, and acoustic resistance

Shortly after the Mosquito was introduced, young people seemingly found a way to reclaim ultrasound. Using a high-pitched sound similar to that of the Mosquito as a cellphone ringtone, kids discovered that they could surreptitiously text each other without the knowledge of older authority figures. Through this act of defiance they have in a way been able to exploit the arbitrary status of youth that has been held against them, to re-inscribe it as a space of collaboration and resistance. But clearly
this détournement does not amount to any real or practical immunity to sound. The ultrasonic ringtone should not be thought of as an antidote to physical harm; it is a means of demarcating a space that is out of bounds to the people and institutions that have harassed them. But this practice has arguably not done anything to diminish prejudice against young people—in fact the opposite is probably true.

Whenever an ultrasonic ringtone slips in under the earshot of an older teacher, the biological difference between youth and adulthood posited by the Mosquito is reaffirmed. In addition, the retreat into the exclusive sonic space of the ringtone has likely reinforced the stereotype that young people are essentially immature and prone to horde-like disregard for authority. Media representations of the phenomenon have confirmed such clichés through their tendency to infantilize ringtone users (see, for example, Noguchi & Hart, 2006). Despite the interesting recuperative work that the Mosquito ringtone might seem to do, it has failed to have any measurable or meaningful impact on the larger discussion. And perhaps it is unfair to assume that it might have had any impact on the politics of ultrasonic deterrence. After all, this was never a coherent attempt to alleviate or defy the effects of the Mosquito itself or to persuade authorities that the device infringes on individual rights; it was a harmless viral curiosity that circulated quickly and, in the absence of new-media hype, will likely pass into obscurity before too long.

Consideration of the Mosquito ringtone begs the question, is it at all possible to counter the effects of such an intrusive and ear-splitting noise? We might imagine strategies of subversion or détournement of non-aggressive music deterrents changing the meanings and upsetting the power dynamics associated with this form of control. Again, there is no universally detested form of music. And there also seems to be no limit to the possibilities for breathing new life into old songs, if not entire genres. The work of indie mashup golden boy Girl Talk transmutes elements of deeply unhip music—Ace of Base, Rod Stewart, Genesis, and many other staples of easy-listening radio—into quintessentially cool, postmodern anthems. Even classical music has no immunity to reconfiguration; commercially successful hip hop artists like Nas and Ludacris have reworked Beethoven and Mozart into “urban” chart toppers. Given the entry of “adult” musical songs and genres into the cultural lexicons of young people, refracted by tastemakers, it seems fair to imagine that the efficacy of using music as a deterrent has the potential to be compromised—call it “ironic listening.” Is Mozart’s Requiem really obnoxious and a deterrent to a kid whose favourite track, “Say It to My Face,” by Young Buck, samples the “Introitus” movement? Music might be experienced earnestly, passionately, disinterestedly, kitschily. However, the pure tone of the Mosquito does not allow for any ironic reframing or spontaneous remixing. No amount of subversive reframing can make the sound bearable.

The 2006 media blitz surrounding the introduction of the Mosquito was met with as much irony as outrage. And, like most bizarre cultural blips, it faded away. But just as its cycle of curiosity seemed to have run down, in February 2008, it was back in the media with reports of attempts to have the device banned. The Buzz Off campaign, run by the office of the Children’s Commissioner for England, has been at the heart of the push (Children’s Commissioner for England, n.d.).
videos, PowerPoint presentations, and interactive web features—decry the Mosquito, arguing that targeting young people is discriminatory, that it draws attention away from social issues at the root of the problem, and that it simply moves bad behaviour on to other areas.

There has been staunch opposition to the Mosquito, primarily in the U.K., much of which focuses on what is perceived to be a violation of the human rights of young people. In a televised interview, the Children’s Commissioner for England, Sir Al Aynsley-Green, stated that the Mosquito is “deliberately designed to target the young ear. What does this say about our society? If this device were targeting the elderly or people of a different colour, or race, or ethnicity, there would be uproar about it” (BBC, 2008). Ironically, the Mosquito has recently been deployed against those above the arbitrary threshold of youth created by the device. In June 2009, the Mosquito was at the centre of a controversial move to prevent the homeless from loitering in a community outside of Vancouver (CBC News, 2009). The recent version of the device features a “multi-age” mode. The notion of a less physiologically discriminatory Mosquito is troubling; it is safe to assume that it will now be used to enforce class segregation on top of the age-based triage effected by its predecessor. Once again, this is not simply another example of CPTED. This is not a subtle means of coding space; this is the deployment of a weapon against a targeted population. The fact that it now deters everyone does not make it non-discriminatory. Quite the opposite: the property managers of the suburban Vancouver building that installed the device knew exactly whom the Mosquito would affect.

Although it remains to be seen how legal challenges to the new all-ages version of the Mosquito will be resolved, courts have consistently overturned challenges to the legality of using the device against young people (BBC News, 2008a; “EU Rejects Bid to Ban Mosquito,” 2008). Evidently the rights of property owners to protect their property from vandalism and their customers and patrons from antisocial behaviour have trumped the rights of young people to congregate in and move freely through public spaces. The message that these judgments send is that discrimination against young people—call it generational profiling—is a tolerable and justified measure for preventing crime. Internet campaigns that have sought to raise awareness and frame the issue in terms of human rights have been ineffectual. Lobbyists opposing the Mosquito have made a compelling case that has so far fallen on deaf ears, so to speak. It seems that not even framing the device as a powerful weapon will change the minds of lawmakers and legislators. In fact, the recent incorporation of the LRAD into the arsenal of riot police across the globe is a testament to the idea that sound is a relatively benign means of controlling those who encroach on authority. Like the Mosquito, LRADs have been used to pre-emptively disperse undesirable groups. During the G-20 Summit of September 2009, the Pittsburgh police department scattered what had been a largely non-violent protest with blasts from its noise cannon. In a political climate that condones deafening sonic weapons as well as less injurious acoustic deterrents (presumably so long as they target marginal groups—young people, protestors, and the homeless), it appears that an increasingly violent soundscape is here to stay.
Notes
1. It should be emphasized that the Mosquito is not any less effective or problematic in the country or a small town than it is in the city. However, it is also worth noting that many of the problems against which the Mosquito tends to be deployed—loitering, vandalism, et cetera—are perceived to be more prevalent in cities.

2. Russolo's bombastic claim should not be taken too literally. By most accounts, city life was quite noisy both before and in the lead-up to the machine age. See Cockayne, 2007; Picker, 2003.

3. Although ironic listening is no defence against the Mosquito, irony has been exploited for very different ends: advertisers have tried to capitalize on the age-specific properties of ultrasound. In a bizarre cameo, a high pitch squeals out of a Kentucky Fried commercial as the camera swerves toward a bucket of boneless chicken in an attempt to draw kids' attention. Ultrasound plays a conceptual supporting role in The Messengers, a horror film about children's susceptibility to paranormal phenomena that adults cannot detect. The film's website even includes a frequency test almost identical to the ones that the Mosquito has spawned. Apparently, if you can hear sounds above 17.7 kHz, “you can hear things most adults cannot. You may be susceptible to hearing paranormal phenomena” (Sony Pictures, 2009). High-frequency sound can apparently lure and entice a young demographic to consume without attracting the attention of adults.

4. It should be noted that in some cases the Mosquito has been banned at a community level (“Kent Bans High-Pitch Mosquito Which Targets Youths,” 2008; Walsh, 2008). However, the device has not been outlawed at any level above the municipal.

References


Have your say on the Buzz Off campaign. URL: http://www.11million.org.uk/issue_rooms/buzz_off_campaign [July 10, 2008].


