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Tuning In: Sound, Listening, and the Development of an Aural Criminology

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Abstract

This paper takes up Keith Hayward's (2012) call for criminologists to pay greater analytical attention to sound. I present the case for the further development of an aural criminology that not only examines the ways sounds are regulated or mobilized to govern specific populations, spaces, and things, but also considers various ways of *listening* as part of this inquiry. How we hear, connect with, and make sense of sound shapes our understandings and responses to crime. This focus on sound and listening will open new sites of empirical research and provide an alternative epistemological framework for studying a variety of topics. The paper provides an overview of sound studies and discusses what criminology can gain from adopting some of the theoretical and methodological insights from this field. I conclude by highlighting some of the ways that criminologists and sociolegal scholars can benefit from paying closer attention to sound and listening.

Keywords: Sound, listening, sound studies, sensory studies, aural criminology

Introduction

In the past two decades, a growing body of criminological and sociolegal scholarship has emerged that focuses on sound and listening. The wide range of topics explored include: sound and listening in prisons and other carceral settings (Cecil 2023; de Souza and Russell 2023; Hemsworth 2015, 2016; Herrity et al. 2021; Russell and Rae 2020); the use of sound in political protests (Russell and Carlton 2020; Yoganathan 2021); the weaponization of sound by law enforcement (Goodman 2010; Linnemann and Turner 2022) and the military (Pieslak 2009); the regulation of noise (Garcia Ruiz and South 2019; Mopas 2019); and the role of sound and listening in the

courtroom (McKay 2020; Mopas 2023; Parker 2015). Sound and listening also feature prominently in the work conducted by those in the subfields of cultural criminology (Hayward 2010, 2012), sensory criminology (Lee 2022; McLanahan and South 2020), and documentary criminology (Redmon 2015).

Despite this growth in research, sound and listening are still commonly overlooked.[1] While there is a well-established field of visual criminology (see Brown 2009, 2014; Brown and Carrabine 2017, 2019; Carrabine 2011, 2012; Rafter 2014; Young 2009, 2014) that recognizes the importance of images and the power of spectacle, an equivalent sonic or aural criminology has yet to take shape (Russell and Carlton 2020). Criminology is by no means the only discipline to privilege sight over sound. Since the Age of Enlightenment, scholars have placed vision at the top of the sensorial hierarchy and associated the act of seeing with knowledge and understanding. Only within the last few decades has the field of sound studies emerged to challenge this ocularcentrism (see Classen 1993, 1997; Howes 1991; Howes and Classen 2014; Serres 2008) by encouraging researchers to be more attuned to the sounds and silences that surround us (Pinch and Bijsterveld 2004; Sterne 2012). The aim of this scholarship is not to discount the power of the visual, but to democratize the senses and consider the other ways we experience the world. As Bull and Back (2003: 2) explain, instead of focusing on sight as the primary basis of knowing, we need to emphasize sound and reflect on how we "think with our ears."

In this paper, I discuss some of the ways that researchers – both within and outside of criminology and sociolegal studies – have framed and conceptualized our engagement with sound. The paper is based on an extensive review of the existing body of literature coming out of the field of sound studies and various social science disciplines, such as geography (Gallagher 2015, 2016; Gallagher et al. 2017;

[1] When writing about sound and listening, I make every effort to avoid using visual language that reinforces the ocularcentrism that I try to challenge in my work. However, this is not always possible or convenient. After spending a great deal of time trying to find an aural equivalent for the word 'overlooked' I was unable to come up with a suitable alternative that conveyed the same intended meaning. While I acknowledge that this may undermine my argument, I argue that this example also speaks to the dominance of sight in Western culture as a way of knowing and describing the world.

Kanngieser 2015, 2023) and Black studies (McKittrick 2020; Stoever 2016). Particular attention was paid to the recent contributions made by decolonial, critical race, and Indigenous scholars that address what has been called the "whiteness of sound studies" (see, for example, Stadler 2015).

Based on this review, I identify several key theoretical concepts and methodological approaches that may be of interest to those in criminology and socio-legal studies who are curious about pursuing this type of work. Along the way, I highlight some examples of criminological and sociolegal research that focus on sound and listening and suggest areas where more inquiries of this nature are needed. Though not a complete summary of the field and all the various ways that sound and listening has been investigated, the material presented here, I argue, can still serve as an important starting point for the further development of an aural criminology. I contend that this focus on sound and listening will open new sites of empirical research and provide alternative frameworks for studying a variety of topics. I begin with a brief overview of sound studies and consider what criminology and sociolegal studies can gain from adopting some of the main theoretical and methodological insights from this field.

Challenging ocularcentrism and the sensory turn

The interdisciplinary field of sound studies looks closely at the production and consumption of sounds and the ways in which these sounds have changed throughout history and across societies (Pinch and Bijsterveld 2004: 636). For many sound studies scholars, the focus on the auditory allows us to get away from an ocularcentric approach to research that emphasizes objectivity as the way to "Truth." Western scholarship has long trained researchers to be objective and to adopt a view from nowhere to generate pure, disembodied knowledge. This need to objectify and universalize is directly connected to the historical ascendancy of visually-based epistemologies in Western culture (Bull and Back 2003: 4-5). As the most distancing of the five senses, vision is said to create a separation between the object and the subject. Unlike hearing or touching, seeing can be done from afar without the burden of emotions or biases that might be encouraged by physical proximity. The seer readily assumes an "unin-

volved, uncommitted, indifferent and literally voyeuristic stance" and, as such, is unaffected by what is perceived (Hibbitts 1994: 293). Through the power of the gaze, we not only objectify, but control whatever it is that we are looking at (ibid.: 294).

By thinking with our ears instead of our eyes, we are encouraged to adopt an alternative epistemology that does not try to reduce things to a set of "observable" facts. In contrast to the things we see, there are no clear boundaries between the listener and what is heard. Sounds are as "close to us as our thoughts" and so, by listening, we perceive the relationship between subject and object, inside and outside, and public and private altogether differently (Bull and Back 2003: 5). As Jean-Luc Nancy (2007 cited in Heller 2015) argues, "aurality" acts as a meeting point between the exterior/physical and interior/perceptual worlds. Unlike vision that acts as a "distancing sense," hearing is one of alliance, in which the outside is allowed to penetrate and enter the individual (Bull 2000: 118). To listen then is to encounter an exteriority, but one that is experienced within the listener's body (Heller 2015: 44). As a mode of perception, listening is "intimate, visceral, and embodied" (Cranny-Francis 2008).

This desire to challenge ocularcentrism and deconstruct the "hierarchy of the senses" is arguably one of the main motivations driving the development of sensory criminology (de Souza and Russell 2023; Herrity et al. 2021, 2022; Herrity 2021; McLanahan and South 2020) and the broader "sensory turn" in the social sciences (see Classen 1993, 1997; Howes 1991; Howes and Classen 2014; Serres 2008). The primary goal here is not to abandon the study of the visual, but to pay greater attention to the "totality of sensorial modalities" (McClanahan and South 2020: 3). In calling for a criminology concerned with smell, taste, sound, and touch – along with the visual – McLanahan and South (2020: 3, emphasis in original) argue:

> While it is… fitting that so much contemporary innovation in criminology is primarily interested in the visual dynamics that condition and configure human interaction with the world, this is not sufficient. It is necessary to also consider the ways in which

> *nonvisual* sensorial interaction[2] with that same world also condition and configure human interpretation and meaning-making.

This "sensorially-attuned criminology" allows us to critically engage with the ways in which we experience phenomena and how our senses connect us to crime and its regulation. In particular, this type of inquiry can centre the focus on the interplay between our senses and our emotions. Indeed, as Rago (2014 cited in McLanahan and South 2020: 16) suggests, what we hear, see, taste, smell, and touch can provide us with information on *how* to feel while, conversely, *what* we feel can be heavily influenced by what our senses are taking in. Our sensing of the world can thus be described as both a form of embodied knowledge and felt experience.

Sensing and feeling (through) sound

Like many other disciplines in the social sciences and humanities, there has been a move within criminology toward phenomenological research (see Merleau-Ponty 1962) and the study of affect and emotion (e.g., De Haan and Loader 2002). This "affective turn" is perhaps most evident in visual criminology. Visual criminologists examine the role of the image and the power of spectacle in crime and criminal justice. However, rather than adopting a positivist and scientific approach that translates images into words and numbers that can be measured and quantified, scholars working in this area have called for a different form of analysis that considers how visuals make us *feel*. Drawing on the notion of criminological aesthetics, Alison Young (2009) examines our "affective encounters" with images of movie violence. By looking at the spectator's corporeal interactions with various filmic elements, Young (2009) argues that scenes of violence are not only perceived through our eyes and processed within our minds, but also sensed within our bodies. As she explains, cinema is a medium that is "always heard, felt, lived and remembered" (ibid.: 7).

Our affective reactions to the things we see can bring about a strong sense of embeddedness and a heightened sense of belonging with

[2] When conducting this type of research, the authors note that it is important to recognize that senses can interact; that one sensory modality can potentially influence the response of others (McLanahan and South 2020: 4).

those around us (Massumi quoted in Zournazi 2003: 214). Using the example of graffiti, Halsey and Young (2006: 278) argue that these images can illicit feelings that connect "bodies known and unknown." Whether this takes the form of disgust toward the state of today's youth or a happy reinvigoration of one's faith in the vibrancy of a counterculture movement, graffiti can link us to others at an affective or emotional level (ibid.).

However, while visual criminologists have encouraged us to look closely at the power of images, it is important to recognize that the things we see can be heavily influenced by what we hear. Quite often, sounds work in concert with images to generate certain feelings and emotions that can move us in different ways. As fans of horror movies can attest, the sound effects and musical scores that prepare us for what we are about to see – an eerie drone, a squeaking door, an uneasy moment of silence followed by a sudden scream, etc. – can often be more terrifying than what is shown on the screen.

The medium of podcasting is one site where producers use sound to affect listeners and connect them to the people and issues that are being discussed. In her study of prison narrative podcasts, Cecil (2023: 2) argues that programs which can offer a "felt- or lived-experience are more likely to impact views which, in turn, may inspire people to challenge popular narratives about incarceration." How one listens to and engages with these programs plays a crucial role. According to Cecil (2023: 2), it is not just about the content and underlying messages of these podcasts that can motivate people to re-examine their opinions about incarceration, but how effective they can be at generating a sense of intimacy between the host and listener, and between the listener and the topic.

In comparison to other modern forms of storytelling, podcasts are inherently intimate and communicate feelings of closeness by virtue of how people consume this content. Engaging with a podcast is typically a solo endeavour that is made more intimate by using headphones. As Cecil (2023: 9) explains, "listening to these stories being whispered into one's ears alters the experience. It creates a sense that the storytellers are talking directly to them." This connection between storyteller and listener is further enhanced using specific sounds.

Hearing the voices of actual prisoners is one way that listeners become connected. Although this is difficult to quantify and measure empirically, listening to someone tell their *own* story about prison life is a very different experience; one that is likely to *feel* more authentic than listening to an actor read the same story.

Sounds of incarceration are also used to engage listeners and further enhance the affective impact of the narrative. From the clanging of a cell door shutting to the echoing effect of the surrounding concrete and hard furnishings, recorded ambient sounds serve to create the sensation of being "transported" to a cellblock (ibid.: 10). Hearing these sounds trigger the listener to use their imagination to build an accompanying inner imaginary or mental picture of the prison. Listeners are made to feel as though they are there with the prisoners as they are telling their stories, making the experience seem much more real and intimate. Arguably, it is the auditory nature of this experience that intensifies this sense of intimacy and closeness. Unlike sight, which allows distance between us and the things we are seeing, sounds are enveloping and can pour into us (whether we want them to or not); the images created from these sounds are constructed and reside *inside* one's own mind (ibid.).

With the growing popularity of this medium, coupled with the steady decline in traditional media use, podcasting is becoming a major source of information about crime and the criminal justice system for many people. More criminological and sociolegal research is needed that critically examines both the production and reception of crime-related podcasts. On the one hand, following Cecil (2023), we should further investigate how podcasters manipulate and mobilize sound to elicit certain effects among audiences. What sounds are commonly incorporated in crime podcasts? How are these sounds sculpted? And for what purposes? Conversely, we must also study how people listen to and sensorially engage with these podcasts. What do listeners get from listening to podcasts? And what role does sound and listening play in this process? Since we don't listen and engage with sounds in the exact same way, it is important to consider how they can be interpreted and felt differently by individuals. Sound in podcasting can thus be explored on both a representational (e.g., What do certain

sounds mean or represent to you?) and affective level (e.g., How do certain sounds make you feel?).

Sound and sonic affect

Sound studies scholars have begun widening the scope of analysis from sensing to sonic affect. Using the analogy of an omnidirectional microphone that cannot help but receive information, Gershon (2013: 258) contends that the sonic constantly informs our everyday ways of being and knowing. What we understand through sound not only happens at the level of cognition, but also comes in the form of "affective knowledge" (ibid.). As Gershon (2013: 258) explains, "sounds resonate in our bodies. They do so not only in our ears but also as something that is felt." This resonance is vital as it generates "vibrational affects that effect how individuals and groups are and know" (ibid.).

We are literally "touched" by sound. Sound waves are formed when a vibrating object causes the air surrounding it to vibrate as well. The vibrating air causes the eardrum to move back and forth, which the brain then interprets as distinct sounds. Yet, even when they fall outside the range of human perception, these vibrations still have the capacity to affect us in the form of felt presences. These vibrations are inescapable as everything is in motion and constantly vibrating. Moreover, according to Goodman (2010), it is vibration that connects every entity within the cosmos. Consequently, as both listening subjects and vibrating, resonating body-objects, we have the potential to affect or be affected by others through sound (Kapchan 2016: 115).

Affect is therefore more than feeling or emotion and is better thought of as forces that impinge on bodies, which may or may not be felt (Gallagher et al. 2016). Indeed, research has shown how various types of sound – from noise (Atkinson 2007) to sonic warfare (Goodman 2010) – can move bodies. However, as Gallagher and colleagues (2016: 619) lament, "listening tends to be understood in implicitly anthropocentric terms, linked to human consciousness and aurality (hearing through the ear). Other kinds of sonic encounters are frequently left out." They propose the adoption of an expanded conception of listening that untethers it from cochlear reception. On this issue, they explain:

> Every space and place sounds and resounds, every living body and being vibrates, and every kind of material, object and surface has acoustic properties. Conceiving of listening in a narrowly anthropocentric way is wholly inadequate for understanding this profoundly polyphonic world. An expanded conception of listening concerns *the responsiveness of bodies encountering sound* – bodies of any and every kind, in different ways and contexts (Gallagher et al. 2016: 620, emphasis in original).

Expanded listening, in turn, enables us to recognize that sound affects bodies – human and more-than-human – in ways that go beyond human perception, cognition, and knowledge (ibid.). In other words, expanded listening is affective, coming prior to cognitive and discursive comprehension (ibid.).

This expanded conception of listening also attunes us to sound's capacity to both connect disparate bodies (LaBelle 2006, 2010) and to change them (Kanngieser 2015). Sounds can "suture" members of a listening audience into one unit (Van Leeuwen 1999: 60). As Van Leeuwen (1999: 60) describes, "sound touches the bodies of its disparate hearers equally, uniting them in a commonality that might not be predicted by other aspects of their being." From the beating of drums at political rallies to university fight songs, sounds can elicit a variety of embodied responses that draw people together and steer them into collective action.

Since everything engages sound, sound can link and collectivize bodies and environments, creating different affective atmospheres (Gallagher et al. 2016: 625). As a result, we must pay attention to sound's vibrational forces and how they resonate and flow between humans, animals, objects, technologies, materials, infrastructures, and environments (Gallagher et al. 2016: 620). This is in keeping with the concept of "relation ontology" taken up by others in sound studies to decentre the human from the act of listening while also drawing attention to connectedness as a condition of and for being (Rice 2024: 4; see also Novak and Sakakeeny 2015). Expanded listening does not do away with the idea of human audition but rather includes responses to sound by other kinds of bodies and materials (Gallagher et. al 2016: 622).

In a similar vein, Kapchan (2016) argues that "intentional listening" can help foster an aural intimacy that allows us to empathize with what we are studying. She argues that, unlike visual observations that emphasize our separateness, acoustic phenomena have the ability to integrate bodies and generate affect, and must therefore be studied with this difference in mind (ibid.). For Kapchan (2016: 117), listening is "*de facto* empathic, as we are drawn into worlds of sound and vibration that are shared, though not always equally or in the same way." In order to listen with intention, we must allow sounds to resonate with us and critically reflect on how this resonance informs who we are and what we know. The same approach needs to be taken when we study people. In particular, we must empathically listen to our research participants by engaging in a "slow ethnography" that "consciously attunes itself to the rhythm of another" (Kapchan 2016: 117). We have to recognize the sonic connections that exist between all of us and allow ourselves to be affected by the sounds and vibrations of those we study. While qualitative researchers have long advocated for this type of empathic engagement, the focus on the aural and tuning in to our research participants may help to solidify this as a practice.

In the section below, I try to put these concepts and ideas into use. I discuss the role that sound played in bringing people together in the wake of the death of Eric Garner at the hands of New York Police Department (NYPD) officers and the ways in which the audio recordings of this event helped to shape public sentiments towards police brutality.

Ear witnessing: Listening to the sounds of police brutality

While scenes of police brutality captured on video are often disturbing and shocking in and of themselves, the sounds that are recorded alongside them (e.g., screaming, crying, gunfire, etc.) may also trigger a variety of affective and bodily responses that can influence our reactions to what we are witnessing with our eyes. The choking death of an African American male named Eric Garner by officers of the NYPD, which was recorded on a cell phone by Ramsey Orta, a friend of the victim, offers an interesting case in point. The video recorded by Orta clearly shows NYPD officer, Daniel Pantaleo, attempting to

arrest Garner and then placing him in a chokehold for approximately 15-19 seconds. Garner is eventually brought to the ground as other uniformed officers surround him. After approximately 15 seconds, Pantaleo is shown removing his arm from around Garner's neck. The officer then proceeds to use his hands to push Garner's face into the sidewalk. While lying face down, Garner is heard saying, "I can't breathe," a total of eleven times. After he loses consciousness, officers turn Garner onto his side to help ease his breathing. Garner lays motionless for several minutes before an ambulance shows up. Neither the officers nor the EMT personnel that later arrive on the scene perform CPR on him. Garner was pronounced dead at hospital approximately one hour after the incident. The medical examiner in this case concluded that Garner was killed by "compression of neck (choke hold), compression of chest, and prone positioning during physical restraint by police." However, on December 3, 2014, the Richmond County grand jury decided not to indict Officer Pantaleo for Garner's death.

Although there have been many disturbing incidents of police brutality captured on tape by citizen bystanders since the 1991 beating of Rodney King by members of the Los Angeles Police Department, the Garner video was particularly troubling because viewers got to hear Garner's final gasps of "I can't breathe." Garner's haunting words were a key focus of many of the public demonstrations and rallies that were staged in response to this incident and the wider Black Lives Matter movement. From protesters chanting "I can't breathe" to high-profile NBA basketball players like LeBron James and Kobe Bryant donning black T-shirts with these words emblazoned on the front, Garner's last words became a call to arms for those opposed to police brutality and systemic racism within the US criminal justice system.

Arguably, it is hearing Garner's voice that elicits a wide range of emotional and visceral reactions that we might not have otherwise felt had we only seen the images on their own. As opposed to seeing his body at a distance from the perspective of an outsider, the sounds we hear connect and draw us closer to him. They allow us to relate to the victim on a more personal level. We can hear the pain and struggle in his voice and can more vividly imagine ourselves in Garner's

position. These words and sounds make us sense and feel his humanity and generate empathy for him in a way that the images alone cannot do. At the same time, the audio provides a context for how we are to interpret the events we are witnessing. To many observers, the images on the screen – when coupled with Garner's last words – tells a story of a private citizen pleading with a uniformed police officer to stop hurting him, which, in the end, is ignored.

Yet, while speech and voice play an important role in shaping how we witness incidents of police brutality, it is important not to turn a deaf ear toward a whole host of other sounds that may be audible or sensed otherwise. What might be heard or made apparent if we used an expanded definition of listening (Gallagher et al. 2016)? For example, when studying media representations of these tragic events and the public's reaction to them, it might be worthwhile to encourage people to reflect on the more-than-human sounds that may be present in these recordings. For instance, how does the sound of car traffic or dogs barking in the background make you feel? What does the aural atmosphere or 'vibe' of a place feel like? How does it affect your body? In addition to asking people to try to put these affective encounters and bodily experiences into words, we can also watch and listen to their listening. Following Kapchan (2016), we need to "tune in" to the sounds and vibrations of our research participants and allow ourselves to be affected by the way they are resonating and resounding.

Of course, as the public reactions to this video reveals, not everyone saw this event in the same way. Many of the counter-protesters who came out in support of the police claimed that Officer Pantaleo's actions were justified given the circumstances. At many of the rallies organized against police brutality and racial bias in the criminal justice system, supporters of the NYPD showed up claiming that Garner would not have been physically restrained had he simply followed the officer's orders and did not resist arrest. Interestingly, one of the strategies used by these protestors was to challenge and subvert the "I can't breathe" mantra, which by now had become the rallying cry for anti-police demonstrators. In addition to shouting, "Don't resist arrest!" at these rallies, police supporters wore sweatshirts that bore the slogans "Breathe Easy: Don't break the law" and "I can breathe,

thanks to the NYPD." Many of these pro-police protestors did not appear phased or affected by the Garner video. Instead of sympathizing with Garner's pleas, these protestors used his words to blame him for his own victimization – claiming that had he simply respected police orders and not resisted arrest, then he would have been able to "breathe easy."

The fact that the sounds of the Eric Garner video did not move listeners in the same way speaks to a much broader critique levelled against this "affective turn" in sound studies. More specifically, when focusing on our embodied encounters with sound, very little attention is given to how context shapes our listening practices. In this instance, we end up holding to the side any consideration of how racial politics in the US can influence the way that people listen to this recording. So, while paying attention to how sounds affect us adds a layer of detail and richness to our analysis, it would be unwise to ignore the ways that social, cultural, and political factors inform this experience. This issue of race and positionality in listening will be discussed in more detail later in the paper.

Sound, acoustic space, and social control

Drawing on the work of R. Murray Schafer (1977), sound studies scholars focus on the various "soundscapes" that make up our world. For Schafer (1977), the soundscape refers to our sonic surroundings that not only include the sounds of nature, but the mechanically (re-)produced sounds of modernity. From the buzzing of bees to the hum of an air conditioner, this cacophony of sound influences how we engage with our environment and the human and non-human actors that we encounter within it. Like the soundtrack to a movie, what we hear can influence how we understand, sense, and feel the world.

Steven Feld's (1996, 2015) notion of "acoustemology" – a portmanteau that combines the words "acoustic" with "epistemology" – is a seminal concept that has been taken up within sound studies to describe sonic experience as a way of knowing. Acoustemology challenges the sensory bias in Western thought that prioritizes visual epistemology by pointing to the existence of alternative ways of engaging with the world (in this case, via sound), and the possibility of hearing other realities (Rice 2024). The term also critiques and builds upon

Schafer's (1977) soundscape concept. Because it is derived from and associated with the notion of a "landscape," the idea of a soundscape conveys a sense of a sound environment that is static and arrayed before a detached observer (Rice 2024). As a result, this concept fails to capture the experience of sound produced through movement within an environment that is dynamically and continually changing (ibid.).

The term "acoustemology" has been adopted by scholars to describe the different ways of knowing and experiencing through sound that takes place in various criminological contexts. For example, in her study of how sound, music, and silence is used in detention camps of the US's "global war on terror," Cusick (2013) refers to an "acoustemology of detention" experienced by detainees. Hemsworth (2015, 2016) identifies "carceral acoustemologies" in her work on sound in Canadian prisons. It is important to note here, however, that these acoustemologies are never experienced the same way among individuals in the same social setting. Indeed, as Hemsworth (2016: 96) points out, not all people in prisons have the same auditory capacities. On the contrary, multiple acoustemologies may co-exist within a single site. For instance, in a hospital, patients and nurses "know through sound" in strikingly different ways (Rice 2013). Patients' auditory perspectives on wards, which they often experience as noisy and even frightening, differ from those of nurses, who draw on sound cues and sound levels from patients and medical technologies to identify priorities when allocating care and attention (ibid.). As I discuss later in the paper, factors such as race, gender, and ability may influence what one knows and experiences through sound.

In an article entitled, "Five Spaces of Cultural Criminology," Keith Hayward (2012) offers an innovative framework for how criminologists can approach the study of geography and crime. Among the "five spaces," Hayward (2012) highlights "acoustic space" and its relationship to crime as one area requiring further investigation. He writes:

> …[t]he relationship between man (*sic*.) and the sounds of his environment are seldom studied by social scientists, and almost never by criminologists. As the everyday soundtrack of urban space becomes increasingly cacophonous, perhaps it is time they

> were? Just as borders and walls are becoming the subject of greater criminological scrutiny, so should the contemporary "soundscape" (ibid.: 458).

Since the publication of this article, several scholars (McLanahan and South 2020; Russell and Carlton 2020) have heeded this call for greater critical engagement with soundscapes and acoustic spaces.

In their study of sonic protest strategies used by anti-carceral feminist coalitions in Melbourne, Australia, Russell and Carlton (2020) draw upon insights from critical geography (e.g., Atkinson 2007; Gallagher 2015; LaBelle 2010) to describe how spaces such as prisons can be configured and territorialized through sound. However, the authors also suggest that carceral spaces are not totalizing, static, or inevitable. On the contrary, they argue that these spaces "must be continually remade, fortified and enhanced in order to shore up its inherent permeability" (Carlton and Russell 2020: 308). Interestingly, it is through the power of resistant sound that the anti-carceral activists have exploited this permeability. As Carlton and Russell (2020: 308) explain:

> … sound is a particularly powerful boundary-crosser that can challenge the exclusionary spatial ordering of the prison. Under certain political and geographical conditions, the carceral soundscape, which increasingly restricts 'who gets to hear what', can be *temporarily* breached, altered, and re-made by protest noise, radio technology, rhythm, and music. Counter-carceral acoustemologies signal the creation of alternative 'soundtracks' of resistance that both reveal and momentarily displace carceral-spatial control, re-patterning the aural environment of the prison (emphasis in original).

Within this context, sound is mobilized as a tool for shoring up carceral boundaries while, at the same time, it can be deployed as a means to resist (albeit temporarily) this form of control.

In addition to the research on sounds inside prison and other carceral settings (see, for example, Cusick 2013; Hemsworth 2015, 2016; Kutzler 2014; McKay 2016; Rice 2016), scholars have also looked at the ways that sound and listening is used to regulate public and private spaces. Linnemann and Turner (2020) argue that police routinely

weaponize sound to govern space and produce order. Long Range Acoustic Devices (LRADs) or sound cannons are one type of sonic weapon that has been used by police to combat civil disorder. Not only can these devices broadcast messages and warnings over longer distances than normal loudspeakers, but they can also produce pain-inducing and incapacitating tones to force public compliance. LRADs were first used in North America in 2009 to disperse protesters at the G20 Summit in Pittsburgh, Pennsylvania. Ironically, it is through the imposition of sound that citizens are kept quiet. Like the prohibition of certain forms of political speech or the more extreme acts of murdering and disappearing of dissidents, the use of sound cannons is an act of silencing and a form of domination and negation (Ochoa Gautier 2015: 183).

However, the blasting of sound cannons at protestors is more than just a metaphorical imposition of governmental authority – it is a very real and physical application of state violence. Although the company that produces LRADs claims they are not weapons but rather a "directed sound communications system," public concerns have been raised about the potential harm they may cause. Beyond the bodily damage that can be done, Michael Heller (2015) argues that sounds heard at extreme volumes can create a disorienting experience called "listener collapse" whereby individuals can no longer separate themselves from what they are hearing. As Heller (2015: 45) describes:

> [s]ound does not only touch, it saturates and fills mental and physical consciousness, eliminating the possibility of detached listening. In a sense, listener collapse acts as a forced imposition… it is a moment in which penetration erases our ability to distinguish between exterior/sound and interior/self, bringing both together in a single inescapable vibration.

Yet, because we cannot see the sound waves touching our bodies, we tend not to consider this as a direct application of force in the same way we would if a police officer directly laid their hands on a person and caused them physical pain. On the contrary, despite the discomfort and possible damage that can be done to one's hearing, these devices are still labelled as "less than lethal" and treated as harmless de-

terrence tools. Thus, as criminologists, it is important that we question the use of these technologies and critically examine why weapons that operate at the auditory level are treated differently and the implications that their use has on the rights of those who are often the targets of these interventions.

Whereas LRADs weaponize sound, other sonic technologies used by police involve listening in. Many American cities and police departments have partnered with a gunshot detection company called ShotSpotter. The ShotSpotter surveillance system uses highly sensitive microphones that are placed on buildings or streetlamps throughout a neighbourhood to detect and track gunfire (Linnemann and Turner 2020: 25). If a gun is fired anywhere in the vicinity, multiple sensors detect and timestamp the sound. The precise location is determined based on the amount of the time it takes for the sound to travel to each sensor, effectively triangulating the sound. Once an alert is generated, the incident is reviewed by a human acoustic analyst to determine if the sound was actually gunfire. The acoustic analyst can also append additional contextual information such as multiple shooter or full-automatic weapon alerts. Once the sound of gunshots is confirmed, police are alerted and dispatched to the scene. Police officers can also receive real-time alerts in their patrol cars or on their smartphones through the ShotSpotter app.

For Linnemann and Turner (2020), the use of these technologies allows police to widen the reach of their authority and colonize greater political space. While we often think of police beats in terms of flat surfaces and territories bound by the lines of a map, sound cannons and acoustic gunshot detection systems operate at the level of atmosphere that is only recognizable when we adopt a volumetric conception of space and territory that considers height and depth, simultaneously. As Linnemann and Turner (2020: 25) argue, these technologies "make legible policing's ongoing attempts to fabricate and secure three-dimensional political space."

LRADs are just the latest example of how sound is used to mark territories and to regulate populations. In his classic study of sound and meaning in 19th century France, Alain Corbin (1998) argues that church bells helped to structure the daily habitus of villagers by

providing aural markers of time, place, and community. The bells served as reminders of communal identity and were used to call village members to prayer, to work, to arms, to feast, and to come together in times of crisis.

While church bells were often used to bring members of a community together, sounds have also been mobilized to keep certain people out of specific spaces. In many cities throughout North America, classical music has been used to prevent teenagers from loitering and engaging in other forms of disorderly conduct in front of convenient stores, inside shopping malls, and at public transit stations. Like other forms of Crime Prevention Through Environmental Design (CPTED), music is broadcasted over loudspeakers to create an aural space that is hostile and unwelcoming to teens to displace the din, noise, and general nuisances attributed to this population. This strategy is based on the premise that young people are naturally repelled by the sounds of classical music and will simply choose to congregate elsewhere.

Yet, as many property owners soon found out, the effectiveness of this strategy was short lived. Although the music initially deterred teenagers from loitering, most young people slowly grew accustomed to these sounds. As a result, several places have begun to adopt a much more "targeted form of governance" (Valverde and Mopas 2004) by using high-pitched frequencies that only young people can hear. Several companies have come out with these sonic teenager deterrent devices – nicknamed mosquitos because they sound like the buzzing insects – that can be attached to the outside wall of shops, offices, and homes, which blast 80-decibel bursts of sounds at up to 16 kHz. However, because the body's ability to detect specific frequencies diminishes almost entirely after the age of 20, adults are almost completely immune to these sounds. For teenagers, on the other hand, these ultra high-pitched noises "sound like a demented insect or a very badly played violin" (Alleyne 2006).

Sound, race, and racialization

Sounds can also create and reinforce stereotypical representations of the criminal or dangerous Other. For example, popular media depictions of Islamic terrorists found in films like *Flight 93* or *Home of the*

Brave tend to play up the sonic dissonance and incoherence of their language, prayer, and music, which are often set in contrast to the familiar and harmonious sounds of Western culture (Creekmur 2010). Through what Creekmur (2010: 91) describes as a process of "aural Orientalism," we are made to feel and sense the racialized Other as different and inferior. A very similar argument can be made about popular representations of young Black males who are often shown speaking with specific tones, syntaxes, cadences, and pronunciations commonly associated with "blackness." These speech patterns are used as sonic markers of education and social class, which, quite often, are conflated with fears about urban crime and disorder.

Talking or "sounding black" is commonly the target of racial bias and discrimination. During the 2008 US presidential election, Barack Obama was heavily criticized for what some people viewed as nefarious use of a "black accent" – flippantly referred to as a "blaccent" – when among other African Americans (Harris 2010). Many of these critics demanded that President Obama talk in 'standard' American English, implying that this way of speaking was somehow substandard and suspect (ibid.). Sounds can therefore play a vital role in the process of differentiation and cultural othering that reinforces feelings of "us" versus "them." Moreover, certain races and cultures can be denounced and deemed inferior, scary, or potentially criminal at the sensorial level by making their sounds seem ugly, discordant, suspicious, or generally different from the "respectable" norm.

The fact that we can make these types of assumptions about people based solely on what we hear speaks to the role that historical and socio-cultural contexts play in shaping how sounds are perceived and given meaning (Rice 2013: 101). As various scholars (e.g., Back 2009; Rice 2013, 2024) remind us, listening does not occur in a vacuum. On the contrary, what one hears is "socio-culturally contextualized and necessarily individualized" (Gershon 2013: 258). Consequently, we may attend to some sounds, but not others. And what may be unintelligible noise to one person may be significant to someone else (ibid.).

The inferences that we make about sound can also be learned. As Rice (2024: 4) suggests, "sonic knowledge is exercised often uncon-

sciously through historically accumulated and socially acquired interpretive frames and attitudes." In particular, things like white supremacy, anti-Black and brown racism, and colonialism, can greatly inform our understandings of sound and listening. Yet, while there have been significant contributions from decolonial, critical race, and Indigenous scholars, the field of sound studies has tended to theorize listening as a physical and sensory phenomenon. As described earlier, much of the current research on sound has focused on sensing, sonic affect, and bodily sensations. Within this framework, however, the historical and socio-cultural context of the listener/listening is often ignored. Instead, sound and listening are universalized by employing the "white, Anglo-European listener" as the implicit standard (Bull 2020: Kanngieser 2023; Robinson 2020; Sosta 2022; Stoever; 2017; Thompson 2017). As Kanngieser (2023: 692) eloquently explains, "When the body of the listener is generalized in the image of European Man, it erases the listening cultures the listener brings."

Kanngieser (2023: 692) argues that researchers must acknowledge and understand how listening and interpreting the world through sound are shaped by "sonic colonialities": the "encultured ways of listening to, apprehending, and documenting environments that are derived from the Eurocentric fetish for pre-colonial natures, which are imagined as discrete, unmediated, and possessable." Sonic colonialities are "structures of listening and sense making that are founded on, and reinforce, Anglo-European onto-epistemologies of humans in relation to, and distinct from, nature" (ibid.: 692). This dominant worldview fostered the belief in the separation of the human from the non-human, the negation of Black and Indigenous life, and the depreciation of sounds unfamiliar to Eurocentric aesthetic regimes – all of which shaped contemporary Western sonic practices and methods (ibid.: 693).

Drawing on the work of Katherine McKittrick, Kanngieser (2023: 693) notes that an enduring "sonic inheritance," consolidated over centuries of colonialism and white supremacy, has been the assumption that the "white ear that listens is benign and objective a dangerous and under-acknowledged construct that defines sonic colonialities, in which structural whiteness masquerades as 'lack of bias'" (Stadler 2015). Other sound studies scholars have written about this

issue (see Bull 2020; Stoever 2017; Thompson 2017). Marie Thompson (2017: 266) uses the term "white aurality" to describe a "racialized perceptual standpoint that is both situated and universalizing"; a standpoint that presents itself as neutral and unaffected by social, cultural, and historical context.

Jennifer Stoever (2017) illustrates the ways that sound and listening enables racism and white supremacy using two theoretical concepts: the "sonic color line" and the "listening ear." For Stoever (2017: 11), the sonic color line describes:

> the process of racializing sound – how and why certain bodies are expected to produce, desire, and live amongst particular sounds – and its product, the hierarchical division between 'whiteness' and 'blackness'.

The sonic color line is both a hermeneutics of race and a marker of its presence, thus allowing listeners to construct and discern racial identities based on voices, sounds, and particular soundscapes (ibid.). Through multiple simultaneous processes of dominant representation, certain sounds and sonic phenomena are linked and codified to racialized bodies. This socially constructed boundary therefore enables us to "hear race" and racial difference, as well as see it (ibid.).

The "listening ear," on the other hand, "drives" the sonic color line: it is a "figure for how dominant listening practices accrue – and change – over time, as well as a descriptor for how the dominant culture exerts pressure on individual listening practices to conform to the sonic color line's norms" (ibid.: 7). Stoever (2017: 7) further explains that it is through the listening ear's surveillance, discipline, and interpretation, that certain associations between race and sound come to seem normal, natural, and "right."

These concepts are useful tools for studying sound and listening and their connections to racialization in society. In particular, we need to further explore how certain sounds and listening practices are tethered to specific racialized bodies (beyond white and Black bodies), and how these dominant auditory representations are made and assigned different cultural, social, and political value. In other words, where do these sonic stereotypes come from? How are they constructed and how do they circulate? We also need to engage in ethno-

graphic work that considers how racialized people experience and manage the racist surveillance of the "listening ear" described by Stoever (2017). As a Filipino-Canadian who visibly presents as Asian, I can speak here to my own experience of policing my voice during the COVID-19 pandemic. Because of the rise in anti-Asian hate, I felt it necessary to "code switch" and speak English in an exaggerated North American or white accent whenever I was in a large group of predominantly white people. Reflecting back on this, I purposely used the sound of my voice to defuse any potential confrontation by signalling to others that while I am Asian, I am somehow "from here"; that I am not Other, but like "one of them." I hope to explore how others have experienced this situation, or situations like this, in future research.

Positionality and decolonial listening practices

Borrowing from interdisciplinary music studies and Indigenous studies, Dylan Robinson (2020) considers the ways that settler colonialism has and continues to shape our listening practices. Robinson (2020) uses the term "hungry listening" to describe settler colonial modes of perception that are extractive and regard Indigenous sound (and culture, more generally) as open for the taking. This type of listening attempts to "civilize attention and perception" and prioritizes "the *capture* and *certainty* of information over the affective, feel, timbre, touch, and texture of sound" (Robinson 2020: 38, emphasis added).

In addition to describing the legacies of settler colonialism within the histories and theories of sound cultures, Robinson (2020: 38) offers "decolonial listening" as a strategy that can help "move us beyond settler listening fixations." A key step here is to be cognizant of how our positionality orients the way we listen. To engage in what Robinson (2020: 10) calls "critical listening positionality" involves a "self-reflexive questioning of how race, class, gender, sexuality, ability, and cultural background intersect and influence the way we are able to hear sound, music, and the world around us." He goes on to explain that "as part of our listening positionality, we each carry listening privilege, listening biases, and listening ability that are never wholly positive or negative; by becoming aware of normative listen-

ing habits and abilities, we are better able to listen otherwise" (ibid.: 10-11).

This project of decolonizing listening is an effort to destabilize and undo the ideologies that have shaped our current listening practices and question the ways hegemonic powers resonate in contemporary sonic research (Sosta 2022). By becoming critically aware of the ideologies that we apply to listening and how much these are shaped by settler colonialism, our listening can become a critical tool of discernment and reorientation toward sound (ibid.). For Robinson (2020: 47), this means moving beyond fixations on knowing, feeling, and conquering the sonic, to a point where we are "no longer sure of what listening is."

However, as Robinson (2020: 47) is quick to point out, to "effect a decolonial crisis in the act of listening – to ask listeners to become "no longer sure of what listening is" – cannot simply entail a wilful approach to kick colonial listening habits. Instead, it means shifting the places, models, and structures of how we listen." In his book *Hungry Listening*, Robinson (2020) puts these ideas into practice by interspersing what he calls "intermissions" in between chapters. Many of these intermissions are embodied experiments that require the reader to engage in different sonic and aural activity. Instead of having knowledge "served up on a plate," readers are put to work in preparing the meal. This work "refuses hungry modes of perception and demands relationship of co-constituting meaning" (ibid.: 102). Another chapter is written only for Indigenous readers, with explicit instructions given to settler readers to not read this section. This gesture not only signals and puts to the fore the existence of multiple reader positionalities, but challenges settlers' assumptions about our ability to access Indigenous knowledge and information. While, as settlers, we may "hunger" for to what is covered in those pages, we are made materially aware of our tendency to extract by being denied access.

Audio surveillance and the "new audibility"

Over the last several decades, a countless number of books and journal articles have been written about the ever-growing expansion in the monitoring of everyday life (e.g., Bennett et al. 2014; Ball et al.

2012). A lot of this work has focused on the rise of new technologies like CCTV cameras and cell phones that allow us to be more *visible* within this so-called "surveillance society" (Lyon 1994 but see also Doyle et al. 2011). Arguably, much of the existing literature in the field of surveillance studies is ocularcentric and tends to concentrate on visual forms of surveillance. In contrast, the act of listening as a surveillance practice has received little scholarly attention (Tebbutt 2011).

Many scholars who study surveillance often draw parallels between the proliferation of cameras and "electronic eyes" (Lyon 1994) in contemporary society and Foucault's (1977) classic description of the panoptic prison in which inmates are always under the threat of being *watched* by the guards. However, the fact that prisoners could also be *heard* through a series of proposed "listening tubes" is often overlooked (Hemsworth 2015: 26). Jeremy Bentham's ideal prison not only had eyes that were constantly watching, but also had ears that were always listening. Now, instead of listening tubes, prison administrators rely on small microphones inconspicuously installed throughout visitation spaces to facilitate eavesdropping on inmates, their visitors, and even prison staff members (ibid.). Thus, as Hemsworth (2015: 26) writes, this practice of monitoring conversations calls for pause as it highlights the "potentially oppressive nature of aurality" and calls us to question the ethics of listening and of recording sound, especially when this takes place in carceral and punitive spaces like prisons.

At the level of affect and emotion, auditory surveillance can also feel far more invasive compared to its visual counterpart. Regardless of whether we are aware that our conversations are being monitored and recorded, this type of listening often provokes a sense of violation and intrusion into one's personal space. Unlike CCTV cameras that operate at a distance and objectify us as physical bodies on a screen, microphones that capture our sounds and speech seem to penetrate our inner selves. Because "sounds are as close to us as our thoughts," this act of listening drastically blurs and crosses the boundaries between object and subject, inside and outside, and public and private (Bull and Back 2003: 5).

With the growing ubiquity of "machine listening" (Parker and Dockray 2023), it is no longer a question of who, but *what* is listening to us. Through voice recognition technology, we can now ask virtual assistants like Amazon Echo's Alexa to perform a variety of functions from playing our favourite album to giving us the weather report. Amazon Echo is one of many smart home products on the market that operate by recording a customer's verbal request and sending this information to a central data centre. As soon as the Amazon computers receive the verbal recording, it is immediately processed and transmitted back to the customer's Echo speaker, allowing for a real-time response that comes in the form of a human-like voice. The Echo device is activated and begins recording when it hears the "wake word," which, in this case, is the name Alexa. However, to hear the wake word in the first place, the Echo device must always be listening, whether we are aware of it or not.

In one case, this inconspicuous listening was credited with helping to stop a violent domestic dispute. Police arrived at a home in in New Mexico where they found Eduardo Barros threatening his girlfriend with a firearm. The officers were able to arrive in time to de-escalate the situation and remove the woman and her daughter from the scene. It was reported that a smart home device called 911 when it heard Barros ask his girlfriend, "Did you call the sheriff's?" after he had pulled a gun on her. The smart speaker interpreted this as a request from Barros and promptly called 911. Although nobody at the home spoke to the dispatcher, the altercation could be heard over the phone prompting the police to investigate. This is not the only time that a smart home device has been involved in a police investigation. In 2016, prosecutors in Arkansas got a warrant to obtain information from an Amazon Echo owned by a suspect accused of murder. The murder took place in the suspect's home and prosecutors believed that the audio data recorded by this device would help them piece together what had happened. These two cases not only illustrate the ubiquitous nature of this type of surveillance, but also force us to ask very important questions as to how (and where) these audio recordings are collected and stored, and who is legally authorized to access this data and under what circumstances.

Public citizens are not the only ones who are subject to increasing audio surveillance. With the ubiquity of CCTV cameras and mobile phones, police officers and other authority figures are now under much greater public scrutiny. It has never been easier to record police in action and circulate these images to a worldwide audience using various social media outlets like TikTok, Instagram, Facebook, YouTube, or X (formerly Twitter). Since the Rodney King incident in 1991, we continue to see a steady stream of amateur video recordings captured by private citizens documenting a variety of questionable police practices. Andrew Goldsmith (2010: 915) argues that new camera technologies and social networking applications have helped to create a new generation of media producers and consumers which, in turn, has led to what he describes as a "new visibility" in policing. This new visibility not only refers to the greater capacity for people to record and disseminate images, but a growing willingness for some to engage in "disruptive disclosures" that "subvert the appearance of normal policing" (ibid: 919). The police are now subject to greater "sousveillance," making their actions far more contestable and posing a reputational threat to contemporary police organizations (ibid.: 930).

However, while a tremendous amount of scholarly attention has focused on the power of cameras to make questionable policing practices more visible, very little has been said about how new technologies have allowed the police to be more audible than ever before. In addition to digital cameras that capture high-resolution videos, smart phones come equipped with mouthpieces which double as microphones to record the corresponding audio. Similarly, the body-worn video cameras that many police departments have begun to adopt to increase both officer and citizen accountability have the capacity to record and capture sound. Thus, when it comes to the police, new technologies not only allow us to "watch the watchers" but hear and listen to them as well. The new visibility of policing described by Goldsmith (2010) has also brought about a "new audibility." However, rather than treating visibility and audibility as two separate systems by which officers are held accountable, we need to recognize the co-constitutive relationship between sight and sound.

Courtroom hearing and expert listening

The courtroom provides another important site where sound can be studied (see Parker 2015; Sarat 2010). In recent years, advances in audio technology have turned courtrooms into much noisier places. Police wiretaps, recorded 911 calls, and messages left on answering machines are just a few examples of the kinds of voice recordings that have made their way into criminal and civil proceedings. This has been fuelled by a growing industry aimed at providing lawyers with the technical resources needed to transform raw auditory materials into legal evidence that can help win a case. Not only can these audio forensic experts enhance, authenticate, and render intelligible analogue or digital recordings for courtroom presentation, but they can also analyze and, in some instances, identify the person to whom the voice and speech belong. However, as a relatively new field of forensics, this type of analysis – commonly referred to as 'speaker identification' – has been admitted as a credible technique in some jurisdictions, but not in others.

The validity and reliability of forensic speaker identification was brought into question in the highly publicized murder trial of George Zimmerman (see Mopas 2023). One of the key legal questions here was whether a scream for help caught in the background of a recorded 911 call came from the accused or the teenage victim, Trayvon Martin. Prior to the start of the trial, two newspapers – the *Washington Post* and the *Orlando Sentinel* – hired two different experts to analyze the recording. The prosecution called on one of these experts, Tom Owen, to testify on their behalf. Using a computer program called EasyVoice to analyze the 911 call, Owen concluded that the screams could not have come from Zimmerman. Owen repeatedly claimed that "critical listening," combined with spectrographic visual analysis and automated computer examination, yield robust "scientific" results.

During the pre-trial hearing, the defense probed Owen on his expertise. The defense wanted to know if Owen could explain how his computer software program determined a positive or negative voice match, and to what extent the results were reliable. However, when pressed to explain how the EasyVoice program arrives at its conclu-

sions, Owen responded by saying that the contents of the software could not be revealed for proprietary reasons. He therefore could not describe how the software worked or what algorithms were being used to determine a match. Zimmerman's attorneys also brought in several experts to refute Owen's assertions. Two of the witnesses told the court they were "disturbed" by the scientific techniques used, while others characterized these techniques as "ridiculous." The trial judge eventually sided with the defence and chose to exclude Owen's testimony. In her written report, the judge explained that, while aural perception and spectral analysis have "gained general acceptance within the scientific community," their application by the prosecution's witnesses were "new and novel" with no evidence to establish that these techniques have been tested and found reliable.

With the rise of deepfake AI technology that allows one to clone another person's voice, it is very likely that we will see more cases where sound experts are called upon to assess the authenticity of a recording. This, in turn, raises important questions for criminologists and socio-legal scholars. First, what forms of audio evidence have been admitted at trial and why? Secondly, who have become the authoritative 'listeners' of sound and on what grounds have they been able to gain the status as expert witness? Lastly, what impact is audio evidence having on the outcome of criminal cases? While far from exhaustive, these questions provide a useful starting point for studying about the place of sound in the criminal justice system.

Conclusion

This paper has argued for the development of an aural criminology that takes as its starting point the need to pay closer analytical attention to the place of sound and listening in crime, regulation, and the criminal justice system. I have suggested here that this focus on sound and listening will open up new substantive sites of criminological inquiry and provide an alternative epistemological framework for studying a variety of these topics. However, this new branch of scholarship comes with a few challenges. Indeed, while there are a variety of reasons for why we should study and analyse sound, this is not a simple task. We are confronted with a poverty of language to adequately describe and represent the sounds we hear. For example,

with regards to our limited capacity to talk about music, Roland Barthes (1977: 179) lamented that the best we must rely on is the "poorest of linguistic categories: the adjective." Thus, this greater appreciation of sound pushes us to re-examine how we, as scholars, represent our research and encourages a de-privileging of text and words. To fully engage with sound, scholars must not only open their ears, but also be willing to adopt other forms of representations (e.g., musical notation, audio recordings) that are beyond the written word. While it may be impossible to create a different system that adequately translates sound, it is nevertheless important to take sounds seriously and to offer new ways to name some of their elements and structures (Bull and Back 2003: 12). This also requires us to challenge the current bias towards the textual representations of our work and to consider going beyond the standard academic text and using other audio-visual representations and formats (ibid.).

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