

# Embodied Knowledge

## Sounds as Educational Systems

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### Introduction

OUR LIVES are full of sounds. They resound around us and resonate in our bodies. Where a hearing person cannot help but hear, a physiological inevitability, the meanings one ascribes to those sounds are sociocultural constructions—nested layers of local and less local norms and values, combinations of particularized experiences, understandings, and tastes (Drobnick, 2004; Erlmann, 2004; Smith, 2004).<sup>1</sup> As such, sounds combine to form systems of meaning that can serve to simultaneously transmit, reify, challenge, or reinvent sociocultural norms and values (Brandt, Duffy, & MacKinnon, 2009; Feld, 1991, 1996).

In these ways, sounds carry knowledge from source to listener (Aoki, 1991; Erickson, 2004; Gershon, 2010). As I argue in this piece, sounds are therefore necessarily educational in nature, sensual data so rife with information that the listener can render often disparate-seeming sounds into embodied meaning systems. In short, to paraphrase Geertz (1983), sounds are educational systems. Given the combination of the sociocultural nature of sound meanings and their ability (if not inevitability) to educate, sounds therefore serve as a way to both understand the knowledge a group values and the values embedded in those meanings.

While this notion may appear relatively straightforward at its surface, it is a constellation of interconnected complexity and nuance. For example, scholars note an important distinction between the relatively passive and largely inevitable act of hearing and the active, purposeful intention of listening (e.g., Back, 2007; Bull & Back, 2003a), conceptualization of sound that Erlmann (2010) challenges as maintaining structuralist binaries, even when troubled from a postmodern perspective (p. 22–23). Similarly, although noise may be considered anathema to learning (e.g., Shield & Dockrell, 2003), there has been little attention paid to the meanings in noises and how they might be educative.

However, as the burgeoning field of sound studies has demonstrated, sounds of all kinds are part and parcel of how people literally make sense (Ellsworth, 2005) of their worlds. Sounds similarly inform the ways in which people understand their relation to the spaces and places,

understandings that strongly contextualize the ways in which individuals constitute their identities (Brandt, Duffy, & MacKinnon, 2009; Bull, 2001; Feld, 1996; Gershon, 2010).

The aim of this piece is therefore to demonstrate how sounds combine to create embodied educational systems of meaning regardless of their apparent organization or categorization according to local norms and values (e.g., talk vs. noise). While there has been some work in education that documents the musical nature of classroom interactions (e.g., Erickson 1982, 2003; Gershon, 2006) and a rather long history of examining classroom talk (e.g., Bellack, Kliebard, Hyman & Smith, 1978; Erickson, 2004; Heath, 1983), there has been scant study of *sound* in educational contexts either in or out of schools, other than as a distraction to learning.

In order to document how sounds form embodied educational meaning systems, I begin with an expansion of the points raised in this brief introduction, a discussion that includes an overview of both how sounds are most often regarded in education and the ways in which sounds are being conceptualized in the burgeoning field of sound studies. A short data strip of an urban fifth grade class in transition then illustrates the ways in which educational sounds are most often regarded in classrooms and the shortcomings of such interpretations. I then present an altogether different educational context—another group of fifth graders from the same classroom doing a sensory walk in the Cuyahoga Valley National Park—in order to demonstrate that these understandings still hold fast in a vastly different context. The final concluding section provides suggests some implications in light of these sound ideas.

## Sounds as Embodied Knowledge in Curriculum and Sound Studies

This section provides an overview of the literature on sounds as embodied knowledge in curriculum studies and the emerging, interdisciplinary field of sound studies. Although I have addressed aspects of these topics and their relationship elsewhere (Gershon, 2010, 2011a, in press), I have elected to again discuss points central to these understandings here due to the difference in focus of my argument, the relative newness of considering scholarship in the educational literature as sound curriculum, and the underrepresentation of sound studies in education.

In spite of concerns raised to the contrary (e.g., Aoki, 1991) and calls to listening and awareness (e.g., Jardine, 2004), the field of curriculum studies most often reads sounds as Texts, in no small part a result of both a prevailing tendency in the field and across the social sciences to render ideas, spaces, and interactions in this fashion (for more on this in curriculum studies, see Gershon, in press). The advantage to conceptualizing knowledge as a Text is that it creates the discursive space to deconstruct and otherwise render non-texts as one would critically approach a written text, revealing explicit themes, hidden motifs, and other such patterns of meaning.

However, conceptualizing sound-as-text has two major implications for understanding sounds as embodied educational systems of meaning. First, the consideration of sounds as texts has provided a strong foundation for understanding formal, hidden, and enacted curriculum. Consider, for example, the ways in which early ethnographies in education were in many ways studies of language use, examinations that lead scholars to theorize about the strangeness in familiar patterns of schooling (e.g., Heath, 1983; Mehan, 1979; Spindler, 1982) and the central role of language, talk, and text in postmodern and post-structural scholarship in the field (e.g., Peters, Marshall, & Fitzsimons, 1999; Slattery, 2006). The second result of conceptualizing sounds as texts in curriculum studies has been a focus on sounds as texts of talk and music,

sounds I refer to as organized for the ways in which they are intentionally assembled (see Erickson, 2004; Landy, 2007).

Although there have been discussions of music in curriculum studies (e.g., Dimitriadis, 2009; Gustafson, 2009; McCarthy, Hudak, Miklaucic, & Saukko, 1999; Morris, 1999) they are far more infrequent than discussions of fine art and the implications of art for the field. Furthermore, discussions of sound, as opposed to its categorization as texted talk and music are few and far between. My own writing that focused on embodied knowledge and music rather than on embodied sound knowledge is but one recent example (Gershon, 2010).

Ted T. Aoki's life of scholarship (Pinar & Irwin, 2005) is one of the few exceptions to this tendency, as are Erickson's (1982, 2003) work that examines the nexus between talk, music and meaning; Jardine's (2004) call to mindfulness; and Maxine Greene's (e.g., 1995; Ayers & Miller, 1997) impact on the field of curriculum studies in general and her attention to the sensuous, visual, and sonic ways of knowing in specific. Yet, now nearly twenty years past his call to sonic awareness, Aoki's (1991) concern over "the primacy of the eye in curriculum studies" has still has gone largely unheeded.

Thus, although there have been instances of scholarship that have approached the possibility of sounds as embodied knowledge (Jardine, 2004; Pinar & Irwin, 2005), such scholarship is decidedly infrequent when compared to iterations of sounds-as-text in curriculum studies. To be clear, curriculum studies is not alone in its textualization of the sonic and/or of the senses in general. This focus on text can be understood as following the literary turn subsequent moves to read interactions and ideas as texts in the social sciences, a move Howes (2003) refers to as "from reading texts to writing culture" (p. 22–26).

Contrary to such curricular understandings, scholarship in the emerging field of sound studies—an interdisciplinary field that can be understood to reside under the umbrella of sensory studies ([www.sensorystudies.org](http://www.sensorystudies.org))—is focused on how sounds of all kinds, human, animal, environmental (non-human/animal), and mechanical, form systems of meaning. As I outline briefly below, these meaning systems are important because they provide a powerful means for thinking about human experiences. They are also important because such meaning systems have lead to a reconceptualization of how people interact with one another and their environments as well as a reconsideration of the ideas and ideals that contextualize those interactions.

Before continuing, it is important to further situate this article within broader contemporary constructions of sound meanings and their relationships to other sensual knowledges. As scholars invested in sound and sensory ways of knowing have underscored (e.g., Drobnick, 2004; Erlmann, 2004; Howes, 2003, 2005), sensual understandings are often the most powerful when more than one sense is used in concert with another. Along similar lines, my argument here is not an effort to elevate sound over any other sensual understandings regardless of their categorization or construction. Instead, it is designed to follow Aoki in questioning the primacy of vision in curriculum studies by providing an illustration of the ways in which sounds form educational systems of embodied meanings.

## Sound Meanings

One way to conceptualize sound meanings in the field of sound studies is as an evolution from soundscapes (Schaffer, 1977; Truax, 1978) to acoustemology (Feld, 1982, 1991, 2000) to still-evolving methodological uses and examinations of sound (e.g., Bauer, 2000; Drever, 2002;

Gershon, 2011a; Makagon & Neumann, 2008; Samuels, Meintjes, Ochoa, & Porcello, 2010).<sup>2</sup> Embedded in this evolution is an inherent understanding that sounds are meaningful and that those meanings are sociocultural constructions based on nested, interlocking layers of local and less local norms and values (Bull & Back, 2003a; Erlmann, 2004; Geurts, 2002; Smith, 2004).

Similar to the larger umbrella of sensory studies under which the field can be understood to reside, sound studies comprises “the disparate threads of an ever-expanding field of writing on the social nature and meaning of sound...from the fields of sociology, cultural studies, media studies, anthropology, cultural history, philosophy, urban geography and musicology” (Bull & Back, 2003b, p. 3)—an interdisciplinarity and complex conversation that is not dissimilar to contemporary curriculum studies (e.g., Malewski, 2009; Pinar, 2004). To these fields I would also add those of ethnomusicology, sociolinguistics, organized sound, and sound art that are similarly involved in questions that regard the relationship between sound and meaning (e.g., Kim-Cohen, 2009; LaBelle, 2010; Landy, 2007).

Yet, as Erlmann (2004) notes,

[e]ven in ethnomusicology and musicology—two disciplines that might lay superior claim to sound and auditory perception as their very birthright—a new thinking seems to be taking hold, one that is increasingly drawing attention away from readings—of scores or meanings that are the result of acts of inscription—and focusing it on the materiality of musical communication, issues of sensuality, and the like. (p. 2)

It is important, however, to recognize that there is also recent work in ethnomusicology and musicology that specifically focuses on questions of sound, an assertion that Erlmann (2004, p. 2) makes directly after the material quoted above and is evident in collections about the nature of sound meanings (e.g., Brandt, Duffy, & MacKinnon, 2009; Bull & Back, 2003a; Drobnick, 2004). Nevertheless, in spite of the wide variety of disciplines contributing to scholarship on sound meanings, as well as the myriad ways in which sound has been utilized to consider ideas and ideals across these multiple fields, there is a relatively consistent invocation of four central conceptualizations of sound within sound studies—as soundscape, acoustemology, sound art, and sound/methodology.

**Soundscape.** Soundscape is a term and field (also referred to as acoustic ecology) that originated with composer, educator, and theorist R. Murray Schaffer (1977) and developed with an associated group of researchers (e.g., Truax, 1978) at the World Soundscape Project at Simon Fraser University. Schaffer envisioned soundscapes as a means for rendering all acoustic environments as music and anything that makes sound as musicians. “Behold the new orchestra: The sonic universe! And the musicians: anyone or anything that sounds” (p. 5).

For Schaffer (1977), this understanding has a strong ethical component. Because music created by a particular culture/society both reflects and is informed by that group’s understandings of sounds and music-making, it is also related to their sociocultural norms and values (p. 7). This parallels a central tenet on which contemporary ethnomusicology rests, the overarching idea that music is a social construction that can be used as a means to interpret sociocultural ways of knowing.

Just as an analysis of landscapes can provide important information about the contours, contexts, and histories of a particular environment, collecting and analyzing sound can similarly enhance our understandings of a given terrain and the contexts that inform that environment.

The soundscape is any acoustic field of study. We may speak of a musical composition as a soundscape, or a radio program as a soundscape or an acoustic environment as a soundscape. We can isolate an acoustic environment as a field of study just as we can study the characteristics of a given landscape. (Schafer, p. 7)

Due in no small part to its broad definition, “soundscape” has been utilized as a means to regard meanings a wide variety of contexts, ideas, and histories (see, for example, Brandt, Duffy, & MacKinnon, 2009; for a more detailed recent review of the term, see Kelman, 2010).

**Acoustemology.** Acoustemology is a term associated with Stephen Feld, another central figure in sound studies. Although, as a simple Google search will reveal, there is a good deal of work that does indeed specifically utilize this construct, Feld’s seminal and continuing work in the field is consistently cited. Because acoustemology is so central to Feld’s understanding of his sound scholarship, referencing his strong body of work implicitly, if not explicitly, also references acoustemology.

Feld’s (1982) development of acoustemology is inexorably related to his work with the people of the Bosavi region of Papua New Guinea. Starting with Schafer’s concept of soundscape, he began to develop, “the idea of an ethnography of sound, or study of sound as a symbolic system, an acultural system, in order to relate the importance of acoustic ecology, particularly the avian rainforest soundscape, to the musicality and poetics of Bosavi laments and vocal song” (Feld, 2000, p. 225). This, in turn, led to the development of what Feld calls “acoustemology,” a move he sees as not only a “natural development” in his scholarship but also a “step in critical response to research in acoustic ecology that artificially separates sonic environments from the pervasiveness of human experience” (Feld, 2000, p. 184). Acoustemology, “means an exploration of sonic sensibilities, specifically of ways in which sound is central to making sense, to knowing, to experiential truth” (Feld, 1996, p. 97). In sum, “by acoustemology I wish to suggest a union of acoustics and epistemology, and to investigate the primacy of sound as a modality of knowing and being in the world” (Feld, 2000, p. 184).

**Sound Art.** With roots in fields such as *musique concrète*, the mid-20<sup>th</sup> century Western art music of composers such as John Cage, and early recording techniques associated with the development of radio and sound recordings (analog to digital), the category of “sound art” is a relatively recent development (Kim-Cohen, p. xix). As its name implies, sound art is artwork that is comprised of sound, focuses on sound, or in which sound is a key element (LaBelle, 2006; Licht, 2007; Kahn, 2001; Kim-Cohen, 2009).<sup>3</sup> Because of this, sound art is a relatively open category in which a sculpture with MIDI trigger pads for sounds that activate when touched, a room empty except for a speaker, and, if Kim-Cohen’s trajectory of a non-cochlear sound art continues to resonate in the field, words about sound as art, can all be labelled sound art. While sound art is not necessarily confined to galleries or allocated public spaces, some of its strength as a medium is indeed how sounds cannot be contained by physical objects, such art spaces continue to be some two of the central ways in which sound art is presented—the the sounds of laughter that accompanied riders on the escalator to the exhibition hall at the 2010 meeting of the AERA in Denver is but one example. Thinking about how sounds can be organized in this

fashion, and in associated art forms such as radio, has also informed questions about how one might conduct research in and through sound.

**Sound Methodologies and Theories.** Furthermore, there is emerging scholarship in research methodology and sound theory that has developed in conversation with the consideration, practices, and creation of soundscapes, acoustemology, and sound art. Where Bauer (2000) focuses on “music and noise” as sources for qualitative data, Drever (2002) works to marry ethnography and soundscape for the purposes of music composition. Similarly, Makagon and Neumann (2008) note the possibilities for and relationship between “audio documentary and the ethnographic experience” in the processes of “recording culture.” Along these lines, Jean-Paul Thibaud’s theorizing “towards a praxiology of sound development” ([http://www.sensorystudies.org/?page\\_id=358](http://www.sensorystudies.org/?page_id=358)), in which he suggests that, “it is necessary to challenge three main socially recognized categories of sound: music, speech, and noise” and that “the pragmatic dimension of the acoustic environment has also been largely under-estimated until now” (np).

Additionally, Samuels, Meintjes, Ochoa, and Porello (2010) offer a very thorough and strong work on the possibilities at the intersection of ethnography and soundscape. My own work along similar lines of thought seeks to further such scholarship by further situating the intersection of ethnography and sonic representation between both previously suggested methodological possibilities and the larger field of interpretive research practices, and to put such theoretical possibilities into empirical practice (Gershon, 2011a, 2011b). Finally, although there is not the space to pursue it here, it is important to reiterate that, like sound art, these concepts arose from developments in sound recording, music composition, and conceptualizations of sounds, noise and silence from the previous century to the present (cf. Kim-Cohen, 2009; Samuels, Meintjes, Ochoa, & Porello, 2010; Schwartz, 2004/1998).

What this scholarship shares is an attention to the ways in which sounds, any and all sounds, are meaningful to the hearer/listener. Noise is never simply noise but is instead some kind of sound that conveys socioculturally contextualized and embedded knowledge both about the source of the sound and its place in relation to the listener, both literally and metaphorically. Similarly, a recorded sound is necessarily never the same as a sound event but is instead a version of that moment in time as recorded by someone using a specific set of recording instruments with all the biases, norms, and values inherent to the ways in which local actors make sense.

This intentioned focus on sound has also yielded another two central sets of understandings regarding Western conceptualizations of how information and knowledge are received and conceptualized. The first of these sets of understandings are examinations of the intended and unintended results of a primacy of vision and the eye within in Western knowledge from more historical constructions to contemporary theory and philosophy (see Howes, 2003; Ihde, 2007; O’Callaghan, 2007). “[V]isual information occupies a privileged epistemic role, and our language frequently reflects a tight coupling of seeing with knowing. We evaluate *views*, have *insights*, and *see* what is at issue” (Nudds & O’Callahan, 2009, p. 1, italics in original).

As Erlmann (2010) describes, “the ear troubles some of our most entrenched clichés” (p. 24)—visual metaphors for ontological, theoretical, and philosophical understandings of how people make meaning immediately fall short when applied to sonic and other non-ocular, sensual meaning-making. The assumption that non-ocular senses are identical to vision’s functions and relationships to understanding lead to both missed theoretical opportunities and necessarily false constructions of meaning (Bull & Back, 2003b; Gershon, in press; Ihde, 2007; O’Callaghan,

2007). Consider the following: “[t]he blink of an eye lasts three hundred milliseconds. The blink of an ear lasts considerably longer. From birth to death the ear never closes” (Kim-Cohen, 2009, p. xvii).

Second, an understanding of the primacy of vision and the categorization of the senses into five discreet categories is a distinctly Western construction that has a history of reifying notions of Western supremacy over “other” non-Western ways of knowing that in many ways continues unabated, even in studies of the senses or the visual and performing arts (e.g., Nooshin, 2003). As anthropologists have demonstrated in recent decades (e.g., Guerts, 2002; Stoller, 1997; for a review, see Howes, 2003), non-Western constructions of meaning do not necessarily place mind over body or vision over sound over taste, touch, and smell. Bringing such constructions of knowledge to non-Western contexts can and often does lead to misunderstandings of local norms and values and, in turn, to interpretations that reveal more about the researcher than represent those researched (e.g., Fox & King, 2002; Faubian & Marcus, 2009). Furthermore, as Erlmann (2010) intricately illustrates, even a Cartesian splitting of mind and body, of valuing sight over sound overlooks deep connections between reason and resonance that echo throughout modernity.

Thus, sound studies illustrates the meaning-full-ness of sound, its connection to the human experience (profound, mundane, and otherwise), and reminds us of the inclusive nature of sound, both in its perception and the sources that trigger reception. In these ways, the sounds we hear every day are central to our understandings of how we know ourselves, our relationship to our environments, and the people, animals, ecological life, and inanimate material/objects (rocks on a path, bulldozers on the freeway) that populate our local and less local ecologies. Sounds contain meanings that are literally embodied, absorbed both through our orifices and throughout our systems (Erlmann, 2010)—the louder the volume, the more this point literally resonates.

On one hand, the sound ideas and ideals as conceptualized in sound studies should ring familiar with curriculum studies. It is a field that has its own disciplinarity (Pinar, 2007) yet it is also interdisciplinary and critical, as well as the site of multifarious discussions that question dominant notions of knowing while theorizing the possible and pushing towards its practical implications. Additionally, curriculum studies seems poised to contribute towards Kim-Cohen’s (2009) notion of a non-cochlear sonic art in which sounds can be textually represented concepts and constructs—an idea rooted in Derrida that Erlmann (2010) implicitly challenges in his support of critiques of Derrida’s “phonophobia” and his own concerns about Derrida’s “demon of the ear” (p. 12).

On the other hand, in educational literature both in and out of curriculum studies, sound is often overlooked in favor of music and talk or equated with unwanted noise (see Gershon, in press). As a result of this orientation there is a continued emphasis on the primacy of vision, texted rather than embodied experience of knowledge in most educational scholarship, and an often uninterrupted assumption that non-visual sensory understandings (literal and metaphoric) can be re-cognized through the same ideas and practices as those used for vision. This also has implications for the medium through which one attends to sound. From this perspective, it is more the ways in which curriculum studies has utilized text and a lack of attention to sound (as opposed to music and speech) than it is that scholars have written rather than listened to text. At first blush, such omissions might seem either semantic or surface in nature. However, because what is at issue here speaks to the ways in which people make sense of their worlds, a lack of attention to the sonic misses central ways in which knowledge is assembled and disseminated.

The following section is dedicated to empirically demonstrating just this, how sounds form embodied educational systems of meaning.

### One Grade, Two Contexts, and a Microphone: Sounds as Embodied Educational Systems

For the past three years, I have been working with Mrs. Grindall and the successive groups of fifth graders she has taught. Due to the way in which our collaborative project has been conceived, I am able to use her and the students' actual names, a possibility that is helpful here because it means that the sounds in these two educational contexts do not need to be further edited to remove such identifying information.

To be clear, in light of the concepts that are part and parcel of scholarship in sound studies briefly outlined in the previous section, I am not claiming that a recorded instance of any event either accurately captures that event or can be regarded as the event. This is because myriad interwoven layers of context, not the least of which are time and physical presence, contextualize any sound and because it is necessarily incomplete, as is the case with any interpretation.

This does not mean, however, that one cannot gain embodied knowledge by listening to sound recordings. To the contrary, human beings are excellent at re-cognizing even incomplete sounds (e.g., Duetsch, 2010). Therefore, as long as one does not take the next step in assuming that a microphone and recorder truly captures a sonic environment—overlooking that a microphone's placement, range, and the sounds that cross its elements are the result of the person recording and that the equipment capturing the recording, and, no matter how sophisticated the set up or process, produce some version of invented/interpreted sound—listening to a particular context can indeed convey embodied knowledge. Additionally, as sounds are contextualized by other sounds, it is both the presence of any given sound and their combination with other sounds that educate the listener about herself, others, and her environment.

To these ends, the remainder of this section has been organized as follows. I begin with a brief description of the two contexts in which the sounds below were recorded, an explanation that includes a discussion of the teacher and students involved. I then provide a texted version of the first context, just over a minute of sonic data in which students went from listening on the rug with their teacher to working at their desks in their assigned groups.

Next, I offer an mp3 file (selected for its near universal play-ability rather than sound quality) of the transition so that the listener can hear the sound data used to create the text of the transition and appreciate the differences between the two versions. Finally, I provide another mp3 file of Mrs. Grindall with a different group of students doing an exercise in a forest so that the reader/listener can performatively experience the degree to which sounds form educational systems of meaning across contexts and participants.

### Contexts

The two contexts presented here are of Mrs. Grindall and two successive years of fifth grade students, those she had last academic year (2009–10) and those who began the 2010–11 academic year as her students. Where fifth graders in the classroom context had been with Mrs. Grindall for just over seven months, students in the second context below had become her students quite

recently, having arrived in her room only three weeks prior to the recording. Additionally, while the first recording is of a rather traditional educational context, a classroom in an urban elementary school, the second recording is equally non-traditional. It is a recording of students playing a sensory game in a national forest as part of an annual three-day, overnight trip Mrs. Grindall plans so that “they [her students] can experience science and nature for themselves, something they really almost never get a chance to do and always say is one of the highlights of their year.” As one boy who is the youngest of three brothers, all of who have had Mrs. Grindall as their fifth grade teacher, shared with me about his time at the Cuyahoga Valley National Park: “Finally. After all these years it’s my turn, and I’m so glad I’m here. It’s as cool as I thought. Kinda better...because this time it’s me [here].”

The students in both classes are majority African American (16 of 18 students in 2009–2010 and 19 of 22 in 2010–2011, 2 of whom are students of color who are not black) and come primarily from poor to working class families who live in Akron, Ohio. Mrs. Grindall is a widely respected teacher with over thirty-five years of teaching experience. Last year (2009–10) when this recording was conducted, the classroom was organized with a large rug in the middle of the floor on which the students sat to work, listen to stories, and read; there was a SMART Board at the one edge of the rug and a rocking chair in which Mrs. Grindall read to students on the other; desks organized so that students sat in groups of four facing one another lined the walls of the classroom outside the rug; and a library filled with books behind another set of rugs where the students could sit or lie down as they read.

### Sounds as Educational Systems In and Out of the Classroom

At the point that the transcription begins, students sat on the rug as Mrs. Grindall finished a discussion about courage and moved on to the topic of their next assignment, a group writing project about perseverance. In the transcription “(sec)” is an indicator of lengths of silence between utterances, “(:##)” represents the time elapsed in the sound data strip since it began, an ellipsis “...” is used to indicate interrupted speech, and a bracket “[ ]” is used in combination with indentation to indicate lines of overlapping talk.

Mrs. Grindall: Alright? Perseverance is written in the center box already. (5 sec) And you’re going to do loots of sharing with each other. Nobody’s asking you to do, as I usually don’t do, I want you to put your brains together, I want you to put your brains together. So Perserverence is to keep trying and trying different things until you succeed. (:26) So as soon as you are ready, you are gonna get where your group meets, okay?...

Student 1: Mrs. Grindall?

Mrs. Grindall: ...where your reading group meets, your clipboard...  
(Student conversation unintelligible)

Mrs. Grindall: ...(:42) and I can’t wait to see your *awesome* sharing. I see Karis is already gathering her group and going to where they normally meet.

Student 2: Mrs. Grindall, I need a sample [sheet]

Mrs. Grindall: (quietly to student): The blue one too?

Student 2: Yeah



Mrs. Grindall: [louder voice to the whole class] Take the blue one with you so you have a sample, that's what that is. It's a different *theme* but it will give you a sample. It'll give you an, "oh, this is what this means." (2 sec, 1:06) I'll come around and sit in with your group for a while, I wanna listen to you, I want to listen to your questions, I wanna help you out.

(Overlapping student conversations for 4 seconds as students begin to work)

While there are certainly more in-depth ways of transcribing talk-and-sound-as-text (e.g., Erickson, 2004; van Leeuwen, 1999), the above transcription also carries some sound markers that are not as frequently used. For example, in addition to noting overlapping talk, italicizing words for emphasis, and the insertion of time markers, the transcription of talk above also notes the number of seconds in wait time between utterances and stage direction-like presentations about the quality of talk (e.g., "quietly to student"). Brackets for overlapping dialogue, while not necessarily unusual, are also less commonly utilized.

Transcriptions of talk of this kind are so ubiquitous in qualitative scholarship that they have become an expected part of reporting data. While we often give notice that all such work is necessarily a transcription and have reached a place in the history of social science that the partiality of representation is equally commonplace, we, members of the qualitative research community, rarely move beyond such details of description, if such details are included at all. Instead, we have come to accept such texted talk as adequately conveying sonic data. With this thought firmly in mind, here, then, is the minute and 18 seconds of sonic data used to create the above transcription.



Most expressly missing from the sound sample are all the classroom background sounds (from the "bell ringing" that Mrs. Grindall speaks through to the increased rustling of papers), student movement, and conversation that are present to some degree throughout Mrs. Grindall's talk, sounds that markedly increase as students stand to go work with their groups. These sounds note students' active presence in the room in a way that texted transcription does not. This is no minor difference as, in the texted version, it appears as though the teacher is working in a relative vacuum.

Of equal importance, the seemingly unorganized sounds that are not notated, and would be quite difficult to notate in their complexity in any system of transcription, combine to form another layer of meaning, as informative as the talk transcribed above. This point can take a moment of mental sonic realignment as it is an inversion of how sounds are conventionally perceived. Imagine that this recording was not a recording of a classroom through a pair of small condenser microphones set to capture the classroom as widely as possible but was instead assembled in a sound studio so that every sound was discreetly recorded and could therefore be manipulated individually.

In this imagined scenario, one could then lower the volume on all of the talk until only the "sounds" of the classroom remain. These sounds include the rustling of papers, scraping of chairs, shuffling of feet, and, depending on one's conception of how this might be actualized, the increasing number and volume of students' simultaneous conversation that becomes the complex sound we recognize as the murmur or buzz of conversation—a kind of inversion of most Foley artists' work in film. To my mind, this last aspect would be included as the murmur of students

in classrooms is qualitatively different from the murmur of a crowd in a restaurant or, as will be demonstrated momentarily, students talking and walking in pairs in the forest.

Furthermore, the meanings ascribed to these sounds are socioculturally constructed and contextualized. The loud buzzer that interrupts Mrs. Grindall's talk is but one example of this understanding. In another context, this buzzer might have one of many other possible meanings, from a warning before a gate is opened to something closer in meaning such as the change of a shift at a factory. In the U.S. classroom context of this recording, this electronic tone is referred to and functions as a "bell" by school actors, even though does not have the tonal qualities associated with bells in general or school bells in particular. This sound is of interest to my argument here for yet another reason. Although it is neither talk nor music, it is a sound intentionally organized by the school as a sonic marker (Schafer, 1977) significant to local actors, in this case the "bell" for younger students to go to lunch.

Additionally, even though no such sounds are present on this recording, it was not unusual for city sounds to enter or vibrate the classroom's windows. These sounds included passing sirens, car horns, and the loudspeakers from the car lot around the corner from the school. Sounds often associated with less populated ecosystems also impacted the classroom throughout the year. Intense rainstorms lashed at the windows, thunder rolled, and students heard the way a soundscape changes at the first snow of the year even on a busy city street.

Accordingly, sounds that are most often disregarded as either negatively interrupting learning environments or as not meaningful are indeed *educational* in that they convey meaning to the listener and *systemic* in that the listener places those meanings into conceptual categories that inform their understandings. The same holds true for what I have referred to here as organized sounds, talk and music. In addition, this knowledge is literally embodied, resonating within one's body regardless of one's ability to hear them. Where a blind person's inability to see is equivalent to a loss of vision, a profoundly deaf person is still able to dance in time and play music due to the ways in which sounds resonate within her body as is the case with profoundly deaf percussionist/composer Dame Evelyn Glennie ([http://www.evelyn.co.uk/Evelyn\\_old/live/hearing\\_essay.htm](http://www.evelyn.co.uk/Evelyn_old/live/hearing_essay.htm)).

Thus, all sounds form educational systems. They tell us about our environment, our relationship to others, and reveal as much about how we understand the world as they convey meanings to us as listeners. I offer the following sonic strip of data in order to demonstrate that these understandings are not particular to this context but are instead a way of conceptualizing sounds and sonic data. In it, this year's (2010–2011) group of fifth graders are in the middle of an exercise in the Cuyahoga Valley National Park that their guide for the morning called a "sensory walk."

For this exercise, one student (A) was to use her or his voice to guide a blindfolded partner (B) to a tree somewhere off the trail on which they had been walking. The blindfolded partner was tasked with "investigating the tree using all your other senses, touch it, smell it, see how it sounds." The blindfolded partner was then lead back to the trail at which point the partners *swapped* the blindfold and the *originally* blindfolded partner (B) guided their now-blindfolded peer (A) back to the tree s/he thought they recognized based on the non-sighted sensory investigation that person conducted while blindfolded. This strip of sonic data follows some students as they began their sensory walk.



In the sonic data strip, one can hear students guiding other students through the woods, one student telling another to step “right here, right here, right here”; the depth and breadth of an educational space defined by the crunching of leaves and the distance one can hear the instructor (“that’s far enough”) rather than real or imagined physical boundaries such as classrooms and hallways; the imperfections the recording as I walked, the rustling of the cord and interruptions of wind. As can be heard here, sounds do indeed form educational systems—meanings participants constructed as they engaged in their learning activities in the classroom and forest, meanings I made by following a particular set of choices while walking with an audio recorder through the woods with the class, and understandings you have built as a listener to these events.

As was the case in the classroom, sounds informed students about themselves and their contexts. Of equal importance, these two sonic data strips also function performatively, educating the listener-reader of this piece about these two educational contexts. They are nested, layered sets of sonic interpretations in which 1) sounds form educational systems for the listener of the recorded context in order that the listener might contemplate 2) the nature of all sounds as educational systems for students as 3) they form their own meaning systems based on the local sounds that resonated in their person at that time (in the classroom and forest). Thus, all sounds form educational systems of meaning, embodied ways of making sense (Ellsworth, 2005; Erlmann, 2010) of our place in the world and our lived environments on a moment-by-moment basis.

## Conclusion

In conclusion, I would like to offer some possible implications in conceptualizing sounds as educational systems for curriculum studies and education in general. To begin, a point that resonates across the field of sound studies, all sounds are meaningful (e.g., Beck, 2007; LaBelle, 2010; Feld, 2005).

Second, part of the reason it might be difficult to conceive of sounds as educational systems resides not only in how sound has been conceptualized philosophically, ontologically, theoretically, and phenomenologically, but also due to the ways in which thinking about education is often bounded. In the same way that certain tasks have come to be regarded as on or off task according to a teacher’s construction of a lesson, it seems as though sounds have been implicitly theorized in a similar fashion: Sounds that are part of the teacher’s agenda are educational, those that are not, aren’t. This is not to say that sounds cannot be distracting or detrimental to learning but rather that there appears to be a tendency to turn to outside sounds as distracters, loud air conditioning units and nearby traffic for example, rather than those sounds generated by teachers or other adults—wearing squeaky shoes during a test or consistently giving help to a favored student *sotto voce* so that only a directed few or one benefit from the extra information are but two examples.

Third, a lack of theorization of sound education is also interrelated to the ways in which the senses have been undervalued and underutilized as sources of knowledge both in and out of education. Fourth, a sonic approach to education might harken to questions of experience and meaning that lie at the center of curriculum studies. For example, what might be possible if one were to use sound metaphors to consider schooling rather than “frames” or “lenses?” (for more on this point, see Gershon, in press). Fifth, given that non-Western constructions of sound do not necessarily prescribe to either a “five senses” model or a primacy of vision, turning to such

understandings may well benefit curriculum scholars and provide to be useful for such fields as post-colonial studies and indigenous studies and methodologies.

Finally, regardless of how they are conceptualized, the senses are utilized in concert with one another. Therefore, attention to one sense is necessarily attention to other senses, a question of foregrounding rather than of primacy. As stated in the introduction, my intention here has been to demonstrate that sounds form educational systems of embodied meaning, not to elevate sound over sight but to place the sonic on par with the visual. An opportunity, to paraphrase students on their sensory walks, to smell, touch, taste, and listen, rather than simply see the trees for the forest and the forest for the trees.

### About the Author

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### NOTES

1. It is important to note that sound is more than a social construction, sounds are an integral aspect of being human for the deaf and hearing alike. Although this article focuses on the meanings ascribed to sounds, overlooking the physiological for the social can lead to both missed understandings about the nature human understandings (Erlmann, 2010) and the ways in which deaf people are marginalized (Lane, 1999).
2. This notion is contingent upon an understanding that each vibrant construct continues to move forward in contemporary scholarship and that there is a deep history of examining sound that is similarly fluid and alive upon which these ideas are in turn built (see, for example, Erlmann, 2010; Kim-Cohen, 2009).
3. Although there are certainly points of contention between those cited here, the ideas presented in this section are congruent between all four works and consistent in the same general fashion with other discussions of sound art.

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