Sound and Digital Humanities: reflecting on a DHSI course

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Abstract

The creation and utilization of sound as a methodology for information representation is intriguing for Digital Humanities research, teaching, and practice. However, scholars, researchers, and artists may lack appreciation and/or ability for using sound(s) to enhance or ground their research / presentations. In response, the author created and taught a week-long course, "Sound of / in Digital Humanities," offered during the 2014 Digital Humanities Summer Institute. This essay reflects on the course, its planning, implementation, and outcomes and offers insight into the role sound might play in the research, communication, and consumption of Digital Humanities.

Introduction

This essay discusses the "Sound and Digital Humanities" course offered during the week-long 2014 Digital Humanities Summer Institute (DHSI) at the University of Victoria, Victoria, British Columbia, Canada, 2-6 June. The focus of this course was promoting sound and aural representation of information in Digital Humanities (DH) research, teaching, and practice. [1]

This course evolved from previous experience at DHSI. During the summers of 2012 and 2013, I collaborated with colleagues from the Creative Media & Digital Culture faculty at Washington State University Vancouver to provide a course focusing on "Creating Digital Humanities Projects for the Mobile Environment." Participants were, I observed, quick to visualize information in their apps using video, graphics, or animation. Sound, however, was often overlooked, primarily because participants lacked insight as to how it might be used.[1] [2]

Based on that observation, and a belief that sound plays an important role in arts and humanities research and scholarship, I proposed a course titled "Sound and Digital Humanities" to be offered during DHSI 2014.[2] [3]

This essay reflects on the course, its planning, implementation, and outcomes. I first situate sound as a worthy context for DH work, one that, unfortunately, has been under explored. Next, I outline, from a practice orientation, basic assumptions, and from them, daily goals, objectives, activities, and outcomes for this week-long course. The following section takes a more theoretical tone as I provide an overview of ideological approaches to sound and sound studies. This combination of theory and practice, subjective and objective, I hope, will be illustrative of my approach to this course, and provide a case study for others seeking a similar approach for their own DH research/work. My conclusion suggests that sound provides interesting opportunities for DH research, scholarship, and practice. [4]

Context

DH is an area of interdisciplinary, collaborative research and practice at the intersection of digital computing technologies and the disciplines of the humanities. The hybrid approach of DH involves combining digitized or born-digital materials, and methodologies from disciplines such as art, art history, archaeology, cultural studies, literary criticism, philology, and others, with computing tools like data mining and/or visualization, digital mapping and/or [5]

publishing, information retrieval, and statistics. Practices include analysis, coding, curation, criticism, databases, digitization, document analysis, geographical information systems, information digitization / visualization, multimedia publications, pedagogy, project management, text encoding, processing, and visualization. The results influence creation, dissemination, preservation, research, and teaching activities. The desired outcome is to answer or challenge existing research paradigms, as well as suggest new research questions and approaches. This essay brings sound into the mix.

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"Sound" is the name we give our physical, subjective experience of acoustic energy — a sequence of pressure variations — that travel through a medium (air, gas, water) to our ears. Sound may have a variety of sources but is usually one object moving over or striking another, thus creating vibrations. For example, air passing over human vocal cords and then modulated by tongue, teeth, mouth, and lips produces the sounds we know as speech. Sound travels in all directions from its source in waves and is heard (experienced as sound) when it interacts with appropriate listening devices, like human ears. The higher the energy involved with its production, the louder the sound is perceived. But, unless preserved in some manner, all sound is ephemeral, disappearing soon after its creation.

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Regarding sound, scholar Bruce R. Smith, discussing his research of sounds associated with London, circa 1600, notes many sounds, unless they have been recorded, are no longer available for study, or are difficult to study. For example, the only source for studying historical speech accents might be impressions / depictions written by authors, travelers, or journalists [Smith 2003].

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DH scholars have long been able to discuss developments in film and television because of the ability to situate commentary alongside or directly within visual media as it unfolds over time. But, the ability to do the same with sound has not been widely possible until the introduction of SoundCloud in 2007. According to Jonathan Sterne, as they become more widely available, evolving affordances like looping an audio file; setting begin and end points; setting the volume; tagging, commenting, annotating; close listening (via skipping around, speeding up, slowing down, scrubbing, freezing); and comparing different channel formats will increase opportunities for sound-focused scholarship [Sterne 2011].

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More specifically, Annie Murray and Jared Wiercinski describe how listening and annotation are essential endeavors for DH scholars undertaking literary criticism on poetry sound recordings. They present a methodology for designing a web-based sound archive for literary criticism and propose features and functionalities that facilitate this criticism [Murray and Wiercinski 2014].

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Despite such pioneering efforts, Allison Whitney says DH scholarship, with its embrace of images, animation, video, or text as image for research and information presentation, is biased toward visuals. Sound is largely overlooked [Whitney 2008]. Part of the reason for this may be technical, as noted by Sterne, previously. Another factor may hinge on what Tara McPherson notes as DH's historical focus on the use of digital media / technology to critique / analyze print. Less attention, she says, has been given to scholars' ability to shift from commenting about new media and technologies to constructing arguments with and through them [McPherson 2009]. This will change, however, with the development and availability of tools that facilitate the comparison and mining of complex information source relationships and their multimodal publication. eBooks provide interesting opportunities, as do web content development tools like WordPress and Scalar.[3]

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Sound(s) should facilitate such intersections and comparisons as well. Imagine Smith being able to compare voice dialects using embedded sound files. Or, another DH researcher using sound(s) of speech to mark or define boundaries between research areas — between class, gender, or race relations, for example. Aural artifacts might include soundscapes, sound maps, sound collages, and remixes; digital storytelling (perhaps in transmedia projects); aural and oral histories / biographies / documentaries; curated exhibitions / installations / performances / broadcasts; or as stand alone artifacts (embedded sound, podcasts, web-based radio, archives, curated collections). However, DH scholars may lack appreciation and/or ability for using sound(s) to enhance or ground their research / presentations. In response, I proposed the "Sound and Digital Humanities" course to introduce, explore, and investigate how sounds might be utilized in DH research and information presentation.

Assumptions

DHSI convenes colleagues from the arts, humanities, library, archives, and other communities to share ideas and develop skills using digital, computational, and network technologies for teaching, researching, sharing, creating, and preserving in their disciplines. The atmosphere is informal, friendly, and community-based. As noted, during summers 2012 and 2013, I helped facilitate courses in building DH applications for mobile environments. From this previous experience, I felt I could establish some descriptors for potential course participants. For example, participants would

- Be post-graduate faculty, librarians, and graduate students.
- Align their own research interests with sound. However, their desired course outcomes might not be finalized.
- Differ regarding theory vs. practice. Some would want only or primarily to theorize sound. Others would want a theoretical framework but also an opportunity to engage in creative practices of recording, editing, and manipulating sound for research and presentation. Others would want only to learn what could be done with sound in order to inspire future projects.
- Begin with only rudimentary sound design / editing skills. Or none. They might wish to learn sufficient skills for use in their classes, or to inform their own work(s).
- Appreciate some course structure, but more so, flexibility to explore topics as they arose.
- Desire to complete the course feeling they gained new knowledge and opportunity for research, presentation, or creative activity in the arts and humanities.

Course Goals and Objectives

Based on these assumptions, my course, as planned, would assume no previous knowledge of recording and/or editing sound files. It would survey different sound genres and their use in DH projects. The course would be flexible, able to adapt to the participants' projects, and allow time for workshops and hands-on, learning-by-doing, collaborative learning experiences. As course facilitator, I outlined goals, objectives, activities, discussion, and workshops for each day of the course.

Day 1

Goals

- Understand the broad and important applications of sound to various DH endeavors.
- Understand basic equipment needs / configurations for sound work in DH.
- Understand basics of sound recording and editing, and how to build on those basics.

Objectives

- Introduce participants to sound production / editing.

Projects

- Learn and apply basic sound editing and manipulation skills to reduce an hour-long radio drama into ten minutes or less, while maintaining narrative continuity.
- Plan the overarching structure of a collaborative sound composition illustrating the breadth and richness of sounds for the DHSI-wide show-and-tell session scheduled for the final day.

Day 2

Goals

- Understand that sound provides a place for embodied social and cultural traces through discussion of a theoretical framework for using sound.
- Understand that various forms of auditory culture can provide foundations for defined areas of DH

practices.

Objectives

- Appreciate principles of fair use (fair dealing in Canada) for DH projects.
- Appreciate other best practices associated with the use of sound(s) for scholarship and creative endeavors.

Projects

- Examine resources and discuss applications. Continue work on both individual and collaborative sound projects.

Day 4

Goals

- Understand different ways in which sonic DH projects can be packaged and distributed.

Objectives

- Understand basic concepts of streaming, on demand, downloading, and podcasting as ways to share sound-based/-augmented DH projects.

Day 5

Goals

- Reflect on and evaluate the role of sound(s) in DH projects.
- Reflect on and evaluate course learning opportunities.

Objectives

- Discuss future use of course knowledge in individual sound-based DH projects.

Project

- Engage in the DHSI-wide show and tell session.

Example Course Outcomes

Outcomes from this course went far beyond my expectations. Where many course participants arrived with an individual project, each left with a shared and collaboratively constructed body of knowledge regarding the theory and application of sound-augmented DH projects. Specifically, participants could

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- Effectively theorize the use of sound as a medium for experiencing and communicating information in DH projects.
- Manipulate and edit sound files for presentation in DH projects.
- Appreciate different categorization, archival, and curatorial systems / practices regarding sound(s) in DH projects.
- Effectively use different forms of sound distribution for DH projects.

A brief discussion of each day's outcome(s) follows.

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Day 1

As the basis for the sound editing project, participants downloaded a digital sound file of the 30 October 1938 radio drama broadcast, *The War of the Worlds*. Directed by and starring Orson Welles and The Mercury Theatre on the Air,

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this is, arguably, the most influential radio broadcast of all time.[4] The challenge was to edit this hour-long performance into a coherent narrative ten minutes in length, or less. Course participants discussed the overall structure of their edited sound compositions, and how their particular perspectives on sound (many participants were working with collections of recorded poetry readings / poet interviews) contributed to the resulting artifact.

Day 2

As a starting point for discussing auditory culture, participants considered Steven Feld's attention to "the primacy of sound as a modality of knowing and being in the world" [Feld 2003, 226]. This opened our discussion to different types of listening: "deep" or "agile" listening proposed by Michael Bull and Les Beck, acousmatic listening proposed by Pierre Schaeffer, and ambient listening proposed by Brian Eno. More information in the "Theoretical Framework" section, below. 17

Sound, we agreed, provides a place in which embodied social and cultural traces can be carried, often without the awareness of their bearers [Schafer 1977]. By carefully considering sound, however, we open new ways of thinking about and appreciating the social experience, memory, time, and place — the auditory culture — of sound [Bull and Beck 2003, 12]. 18

As specific examples of auditory culture, we discussed aural / oral history, biography / documentary, and sound archives. Aural history is a method of gathering and preserving historical information through recorded sounds which provide context, background, and deep, rich information about the subject. Aural histories may include voice recordings regarding some historic event or way of life, but they are primarily composed of environmental / mechanical sounds. 19

With oral history, the primary audio emphasis is the human voice as a speaker tells her eye witness account, experience(s), or opinion(s) of past events / ways of life. The use of video recording includes gesture as part of the communication, thus expanding oral history beyond verbal form. 20

Audio biographies and documentaries may provide additional access to cultural and historical information contained in or provided by sound(s). The remainder of the day's discussion and exploration centered on the efforts of sound archives to archive and curate sound(s), either broadly defined or specifically focused. Participants explored sound archives online and discussed their relative affordances in light of their own sound-based DH projects. 21

Day 3

The focus of this day's class was rights associated with audio files, and how these might affect their utilization in DH projects. Copyright, fair use, and creative commons were at the forefront of our discussions. The Statute of Anne (1710) established principles of an author's ownership of copyright and provided a fixed term of protection for copyrighted works (fourteen years). Since then, U.S. law has been revised to broaden the scope of copyright, change the term of copyright protection, and address new technologies. Section 107, Limitations on Exclusive Rights: Fair Use of The Copyright Act of 1976 provides exemptions, in certain contexts, to the exclusive rights built into the copyright law. Participants from Canada and the United Kingdom added their understanding of copyright considerations in their home countries, thus broadening the discussion. Creative Commons (CC) provides a model for how creative works might be shared. Essentially, Creative Commons licenses allow photographers, artists, educators, and others to license their work in advance as content for creative endeavors by others. We discussed these implications for course participants' individual projects. 22

Day 4

Making sound files available for listening and further DH research / presentation is important. *Streaming* provides content on a continuous basis. Listeners can tune in or out at will, as with traditional radio broadcasting. But, they can also pause, stop, and start the program stream at will. The stream is ongoing and particular portions cannot be heard again unless they are recorded in some manner. *Downloading* involves transferring a sound file from a remote computer to a local computer where it can be saved and listened to whenever desired. *Podcasting* refers generally to an audio 23

episode, self-contained, sometimes augmented by text or visuals, that can be either streamed or downloaded. *On demand* speaks to sharing an audio file only when it is needed or desired by the listener. The listener evokes the playback process by interacting with an audio player. The audio file plays through to conclusion and then, since it is embedded in the interface, can be evoked repeatedly.

Day 5

Course participants contributed samples from their individual or course projects, audio biographies, found sounds, field recordings, oral histories, poetry, and creative sound arts, to a collaborative project that was shared with others during a DHSI-wide final-day show-and-tell session. The sound file they created as a course artifact was a narrative of human endeavor that, like DH, is deep and rich, broad and diverse.[5]

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Theoretical Framework

Perhaps an overarching course outcome would be the realization that even in the visual context of contemporary life, sound remains a powerful sensory input, and a fundamental factor in many arenas of inquiry for DH: speech, writing, literature, reading, narrative, storytelling, and listening.[6]

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Regarding the power of sound as a sensory input, film editor and sound designer Walter Murch says sound is the earliest sensory stimulus available to humans, switching on "four-and-a-half months after we are conceived." Newborns rely predominately on hearing before their visual acuity has stabilized [Murch 2005].

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Communications theorist Marshall McLuhan echoes this point when he argues sound provided the first frame of reference through which humankind attempted to create and communicate a world view. McLuhan, with his son and collaborator, Eric, describes two spaces, acoustic and visual, in which humankind has contextualized itself with different results: "Acoustic space . . . is spherical, discontinuous, non-homogeneous, resonant, and dynamic. Visual space is structured as static, abstract figure minus a ground; acoustic space is a flux in which figure and ground rub against and transform each other" [McLuhan and McLuhan 1988, 33].[7]

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Acoustic space is a world awash in sounds. With aural information emerging from all directions, and with no opportunity to shut off or organize the constant stream of sound, pre-writing humankind, the only to experience acoustic space, according to McLuhan, perceived its world as both surrounding and inclusive, a permeable extension of itself, and they of it [Levinson 1999, 5–6].

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For McLuhan, "The 'content' of any medium is always another medium. The content of writing is speech, just as the written word is the content of print, and print is the content of the telegraph. If it is asked, 'What is the content of speech?,' it is necessary to say, 'It is an actual process of thought, which is in itself nonverbal'" [McLuhan 1964, 23–24]. Speech, as the expression of thoughts and feelings by articulate sounds, incorporates abstract thought and extends its ability to explain and/or characterize human agency and situation.

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Speech tamed the acoustic wilderness by translating abstract thought into communicable ideas. Storytellers produced explanations for the sounds in acoustic space and wove them into larger narratives that helped explain the presence and purpose of humankind. Orality provided a means to preserve and share cultural histories and memories, a human tendency documented by Joseph Campbell who investigated the reenactment of myths as ritualistic participatory drama, often involving narrative, music, and/or other sound sources, by cultures around the world [Campbell 1949].

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Alphabets and writing (and printing and reading), in turn, by visualizing its sounds, incorporate and preserve speech while extending its reach beyond the transmission range of the human voice. With the advent of writing, during the height of ancient Greece, speech was visualized, replacing the speaker's voice with text. Printing and distribution of texts, encouraged humankind to see and read (literally and figuratively) the world as a series of discrete pieces, letters and words strung like beads on a linear continuum running from the past, through the present, toward the future. As this emphasis on visualization continued with film, television, and the World Wide Web, the visual was elevated as the primary sensory input. Sound was relegated to a secondary, augmenting role to the visual.[8]

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However, even as new visual media replaced / extended the older orality, they incorporated its content: spoken narrative, storytelling, drama, and literature, and various literary practices associated with their creation and consumption. Thus, speech (as sound), with its origins in abstract thought and presentation, is the oldest medium and the most prevalent form of human communication. It claims a presence in most all media that follow [Levinson 1999, 1981]. As James O'Donnell notes, "the manuscript was first conceived to be no more than a prompt-script for the spoken word, a place to look to find out what to say . . . to produce the audible word" [O'Donnell 1988, 54].

Sound, despite its secondary relation to visual, still conveys deep, rich information capable of prompting cognitive and emotional responses. McLuhan likens sound to a "subliminal echo chamber" capable of evoking memories/associations long forgotten or ignored [McLuhan 1964, 264].

According to Smith, sound is pervasive. Most humans, he says, "live immersed in a world of sound . . . sound is at once the most forceful stimulus that human beings experience, and the most evanescent" [Smith 2003, 127, 128]. Most academic disciplines are vision-based, he continues, not only in the materials they study, but in the theoretical models they deploy to interpret those materials. Sound, says Smith, as an object of study, has been neglected. This is unfortunate, he concludes, as knowing the world through sound is fundamentally different from knowing the world through vision [Smith 2003, 129]. Stephen Feld concurs, noting "the primacy of sound as a modality of knowing and being in the world" [Feld 2003, 226]. In short, sound provides a place in which embodied social and cultural traces can be carried, often without the awareness of their bearers [Schafer 1977].

Listening

Experiencing sound, and the information it carries, involves listening, the conscious processing of auditory stimuli. Gary Ferrington likens listening to "theater of the mind," where every individual listener is her own dramaturge [Ferrington 1994]. Alan Hall notes listening opens a "portal through which a deeper, often inarticulate, consciousness can be glimpsed" [Hall 2010, 99]. Such glimpses may promote imagination, interaction, even immersion. Tim Crook says sound very effectively prompts life from little details "seen" in the mind's eye [Crook 1999, 8].

Michael Bull and Les Beck suggest by considering sound we open new ways of thinking about and appreciating the social experience, memory, time, and place — the auditory culture — of sound [Bull and Beck 2003, 12]. They advocate "deep listening" or "agile listening," both of which involve "attuning our ears to listen again to the multiple layers of meaning potentially embedded in the same sound." Deep listening, they say, also involves "practices of dialogue and procedures for investigation, transposition and interpretation" [Bull and Beck 2003, 3–4]. They argue several outcomes from deep listening.

- Sound makes us rethink our social experience, its meaning, nature, and significance.
- Sound makes us rethink our relation to community.
- Sound makes us rethink our relation to others, ourselves, and the spaces and places we inhabit.
- Sound makes us rethink our relationship to power [Bull and Beck 2003, 3-4].

In addition to deep or profound listening, we might also consider acousmatic, ambient, or profound listening. Sound artist Francisco López uses the term "profound listening" to denote listening without constraints in order to explore and affirm all the information inside any sound [López 2004, 82–83].

Ambient listening, as defined by Brian Eno, principal innovator of ambient music, is an accompaniment to life activities, often a background or secondary activity. Eno defines ambient music as "new music" whereby "compositional attention" to technological production is key [Eno 2004, 95]. The goal of ambient music is to produce music that offers "an atmosphere, or a surrounding influence: a tint" [Eno 2004, 96]. Since the music is designed to be predictable, attentive listening is not required for best experience. The desired outcome is to have the music become part of the background against which people live their lives.

On the other hand is acousmatic, defined by Pierre Schaeffer, electroacoustic musician-theoretician and pioneer of musique concrète, as "a noise that one hears without seeing what causes it" [Schaeffer 2004, 77]. With acousmatic

listening we no longer are concerned with the Cartesian split between objective and subjective reality. Instead, it is the listening itself, as a process, that becomes the phenomenon to be studied. The question "What am I hearing?" asks one to describe the perception itself, not simply the external references. The acousmatic situation generally precludes any relation with what is visible, touchable, measurable [Schaeffer 2004, 78].

The study of acousmatics is important for several reasons, according to Schaeffer. Acousmatics, he says, emphasizes the "subjectivities" involved in listening, focuses attention on the "sonorous object," what we are hearing, rather than the sound source, and strips sound back to a state beyond interpretation [Schaeffer 2004, 78, 79, 81]. When listening to sounds which are hidden from view we take interest in them for themselves. We can gain knowledge of these sounds, we can analyze and describe them, and, we hope, we can transmit this knowledge.

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Sound is, thus, relative to our listening experience. This point is considered by Brian Kane, in his scholarly study of Schaeffer's theory of acousmatics, as he argues for acousmatic listening to take a central role in sound and music aesthetics, sound studies, literature, and philosophy from a number of methodological perspectives — historical, cultural, philosophical, and musical [Kane 2014].[9]

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How to proceed?

Existing DH scholarship, as noted previously, is largely biased toward visuals [Whitney 2008]. A shift in focus to sound will increase opportunities for scholarship in the arts and humanities focused on sound [Sterne 2011] [Murray and Wiercinski 2014]. Action research, advocated by Stefano Vannotti, combines design / creative practice with critical academic research and may provide an appropriate methodology for DH work with sound. Action research involves a "systematic enquiry conducted though the medium of practical action, calculated to devise or test new, or newly imported, information, ideas, forms, or procedures and to generate communicable knowledge" and essentially "undertake[s] research through practice" [Vannotti 2008, 55]. In other words, to critique and comment on sound, DH researchers should work directly with sound — collecting, recording, archiving, curating, and listening to sounds — the premise of this course.

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Conclusion

In this essay, I have discussed a course entitled *Sound and Digital Humanities,"* taught during the 2014 Digital Humanities Summer Institute at the University of Victoria. I have discussed the context for this course, its goals and objectives, and outlined a theoretical framework for utilizing sound(s) in digital humanities (DH) research, teaching, and practice.

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My argument is that sound provides scholarly and creative opportunities for those involved with DH. Researchers and scholars may be uncertain how to proceed, however. This course was meant to fill the information gap. To summarize, there are several reasons for a focus on sound . . .

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- Sound is ephemeral, disappearing, its meaning quickly lost.
- Sound is temporal, but capable of returning, here but not here, a feeling, a sense, an experience.
- Sound was the original and remains a fundamental sensory input and communication channel for human culture.
- Sound conveys deep, rich information; is capable of providing immersive, interactive contexts for listeners. Through the act of careful listening, listeners can derive a great deal of information about the world they inhabit.
- Sound transforms space to place.
- Sound is the phoneme for speech (verbalization of abstract thought).
- Sound is the central component of narrative (the recounting of a sequence of events and their meaning) and storytelling (the addition of setting, plot, characters, logical unfolding of events, a climax).
- Sound is the basis for literature (written works considered to possess lasting artistic merit) and the various practices and cultures associated with its production and consumption (reading, writing, and listening).

In short, sound creates not only new phenomena to observe, research, interpret, and report, but more importantly, new applications for such endeavors in DH. This diversity of approaches to sound was heard by all DHSI 2014 participants during a show-and-tell session at week's end. Participants from each course shared some artifact in the DHSI central auditorium. With room lights extinguished, participants walked onto the stage where, illuminated only by glowing laptop and/or tablet screens, they added their respective aural components to a live performance of "Sounds and Digital Humanities."[10]

Notes

[1] A growing area of interest in the digital humanities is the mobile environment, especially projects that take advantage of the affordances of smart phones and tablets. This course, derived from the Mobile Tech Research Initiative of The Creative Media & Digital Culture Program at Washington State University Vancouver, was aimed at assisting participants to: 1) conceptualize the space and special features of mobile devices; 2) develop the architecture, design, and multimedia content production for a mobile project; and 3) understand the coding and programming requirements for mobile devices. By the end of the course, participants had information they needed for creating projects for the mobile environment and had completed steps toward the development of their own projects. Archival website: http://dtc-wsuv.org/wp/dhsi/2011/06/08/mobile-tech-research-initiative-mtri/

[2] Learn more about this course. http://www.radionouspace.net/index.php/sounds-and-digital-humanities/

[3] Jentery Sayers introduces Scalar as designed for authoring and publishing multimodal books through its ability to assemble multiple media files and juxtapose them with one's writing. A Scalar book assumes digital communications frequently entails blending approaches to composition (images, sound, video, text, and databases, for example). With regard to sound, such affordances enable authors to

> represent audio [recorded sound(s)] across the material specificities of multiple media (rather than reducing audio to simply sound or text). It also allows historical evidence to be modeled and exhibited independently of the author's writing (e.g., audiences can navigate all audio files collected for the history without reading the author's interpretations). However, any given audio file in a Scalar book can be annotated through discrete, time-stamped commentary by the author, and this commentary is displayed within the medium's own temporality. While such features are now typical in visual culture (e.g., annotating lexia in Commentpress or tagging an image in Flickr), few such mechanisms exist for the scholarly treatment of sound. [Sayers 2012]

[4] As part of my Radio Nouspace project (http://www.radionouspace.net), I maintain archival and curatorial information focusing on *The War of the Worlds* radio broadcast (http://www.radionouspace.net/index.php/the-war-of-the-worlds). I provide links to sound files of the original radio broadcast, the program script, responses, and remediations, as well as to curation by re-creation projects undertaken with students in my digital storytelling class.

[5] This sound file, along with the one produced by 2015 course participants, can be heard on the "Sounds and Digital Humanities" page of my Radio Nouspace website. Learn more at http://www.radionouspace.net/index.php/sounds-and-digital-humanities

[6] I outline a theoretical framework for sound as the basis for storytelling and use it to underpin Radio Nouspace and its associated projects, like Re-Imagined Radio and my DHSI Sounds and Digital Humanities course. Discussion, resources, and additional links are available at http://radionouspace.net/index.php/theoretical-framework/

[7] Marshall McLuhan, with his son and collaborator, Eric, expanded the terms "figure" and "ground," both coined by psychologist and phenomenologist Edgar Rubin in 1915, to explore visual perception. By figure, the McLuhans mean any object rising from or receding into ground. Ground is surface, configurational and comprised of all available figures [McLuhan and McLuhan 1988, 5]. As Thomas MacFarlane explains, ground is subliminal, always beyond perception except through analysis of emerging and receding figures [MacFarlane 2013, 62]. We may connect ground and figure with McLuhan's idea of acoustic space. Acoustic space is ground, the surface from which emerge figures (sounds) and into which they recede.

MacFarlane provides an interesting example in his book, *The Beatles and McLuhan: Understanding the Electric Age*. MacFarlane discusses how The Beatles, four young men from England then and still reigning as the world's most famous and influential rock music group, used multi-track recording technologies from 1964-1970 to explore McLuhan's predicted shift from visual modes of perception to a way of knowing based increasingly on sound, a shift to a world where immersion in a global community trumps the fixed individual viewpoint. They stopped touring, concentrating their time and effort instead in the studio where they produced increasingly complex narrative recordings. The Beatles, the group, as a form of ground [MacFarlane 2013, 109], engaged with recorded sound to create a "technological fable (myth)" [MacFarlane 2013, 104] that required active participation from all band members (figures) as well as audience to achieve its creation and consumption.

[8] Marshall McLuhan argued that alphabets and writing preserved and extended the aural nature of speech. But, Plato argues in *The Phaedrus*, the first critique of writing, written circa 360 B.C.E., that the absence of the rhetor/writer means the text cannot be questioned and is therefore suspect. Plato's work might be considered a landmark in the debate over orality vs. writing. Prior to the age of Plato, speech was the repository of memory. The ear dominated the mind's eye. Writing removed the sound source, placed the source of credibility with seeing. For a long time ancient Greece was bicultural with orality and writing in uneasy coexistence. Orality slowly wound down, until it was replaced by typography and book publication.

[9] Other worthwhile resources on listening include *Acoustic Territories: Sound Culture and Everyday Life* (Brandon LaBelle. Continuum: New York 2010) — explores auditory experience as located inside cultural histories and related ideologies.

Hearing Cultures: Essays of Sound, Listening and Modernity (Veit Erlmann, ed. Continuum: New York 2004) — considers how sound offers a new lens through which to examine culture and complex social issues.

Listening (Jean-Luc Nancy. Fordham University Press: New York 2007) — examines sound in relation to the human body. How is listening different from hearing? What does listening entail? How does what is heard differ from what is seen?

[10] A recording of this composition and a similar sound composition created by participants of the 2015 class can be heard at http://radionouspace.net/index.php/dhsi-more-information/#history

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