Internet radio and electronic literature: locating the text in the act of listening

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Abstract
This essay suggests sound(s), especially when designed/utilized to provide immersive contexts, can provide a valid literary experience and may be considered, like reading and writing, a central element in the digital narratives of electronic literature. Specifically, 1) Sound (environmental, mechanical, soundscapes, and human vocalization) provides the basis for narrative, the heart of every literary experience; 2) Rather than sound(s) **in** electronic literature, sound(s) might be heard **as** electronic literature; sound(s) might form the basis for new works of electronic literature; 3) Evolving considerations of Internet radio, especially with regard to mobile, interactive, social audio networks, with content drawn from radio arts and radio drama, may provide models for these new forms of electronic literature that are deep, rich, engaging, and immersive literary experiences that locate the text not (solely?) in the acts of reading and writing, but also in the act of listening.

Keywords
sound
aural narrative
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"Beyond what fascinates your ear today is something else, incessantly and obdurately present, although you cannot or do not hear it yet—but whoever hears it first has a good chance of inheriting the future" (Murray Schafer 39).

Introduction

The Electronic Literature Organization's (ELO) website defines electronic literature as "works with important literary aspects that take advantage of the capabilities and contexts provided by the stand-alone or networked computer." Such works might be "born digital" (created explicitly for and only able to be experienced in a computer-mediated context) or remediated from print to pixel. This "confrontation with technology," and the process-intensive aspects of the artifacts, is what distinguishes electronic literature from the migration of print to various digitized versions by authors seeking to "go digital."

Given this definition, one may assume electronic literature broadly augmented by the multimedia "capabilities and contexts provided by the stand-alone or networked computer." With regard to graphics (still, video, and animation) this might be true. With regard to

audio, however, as Dene Grigar notes, the majority of sound(s) included in works of electronic literature provide only background, context, or affirmation of interaction with the text (Grigar 2006).

A search of the ELO website seems to bear out Grigar's findings. Seven pages of results were returned in response to my query for "sound," including, from the first two pages alone, "sound bites," "phonetic sound," "animation/film/Flash/image(s)/poetic fragments/ prose narrative and sound," "layers of sound," "alphabetic letter sounds," "continual sound," "response sound(s)," "graphic narrative along with sound," "background sound," "sound effects," and "voice and sound."

This orientation seems to continue a complex interplay between sound and visuals in 20th century screen art so as to maintain the illusion / reality of a three-dimensional visual space where the spectators' gaze might be focused on interacting (reading the visual signs) with text (the use of visual signs to represent complex or abstract ideas). This approach, with regard to the current corpus of electronic literature, may be said to be intentional. Again from the ELO website, "electronic literature often intersects with conceptual and sound arts, but reading and writing remain central to the literary arts. These activities, unbound from pages and the printed book, now move freely" through a number of different venues. As a result, "electronic literature does not reside in any single medium or institution." Nor does it, in my opinion, support aural aspects of the literary arts. Instead, sounds are marginalized in favor of a process of creating (writing) and consuming (reading) literary works by and with stand-alone / networked computers. In short, the ELO seems to argue text is located in the acts of reading and writing. Sound is considered (primarily) as augmenting these literary acts.

Why is this the case? Charles Bernstein proposes the term "frame lock" (based on Erving Goffman's "frame analysis") to denote that focus on one particular aspect within any frame of reference diverts attention from others. Bernstein, following Goffman, calls these overlooked features the "disattend track" and notes, "within text-bound literary studies, the disattend track may include such features as the visual representation of the language as well as its acoustic structure." Sound.

Kenneth Sherwood, in a presentation delivered at the 2008 Electronic Literature Organization conference in Vancouver, Washington, entitled "From Audio Black to Artful Noises: Looking at Sound in Electronic Literature," suggests several disattend tracks within the various forms of electronic literature then archived by the ELO: "the meditation on listening and indeterminacy of Stuart Moulthrop's *Radio Salience* and [Reiner] Strasser and [Alan] Sondheim's 'Dawn'; the foregrounding of sound-track in Young-Hae Chang's pseudo-filmic flash poems, the adoption of 'edit to the beat' techniques of MTV and television commercials in [Giselle] Beiguelman's *Code Movie 1*; the privileging of audio in the remix rhythms in Babel [Chris Joseph] and Esha's *Urbanalities*; the witty, instrumental score for the kinetic word ballet of [Robert] Kendall's *Faith*; the user-driven audio collages of [Maria] Mencia's *Birds Singing Other Birds' Songs* and [Jim] Andrew's *Nio*; the triggered, synthetic sound of [Damien Everett and Melinda] Rackham's *carrier (becoming symborg)*; and the ambient drone and crackle accompanying Geniwate's [and Brian Kim Stefan's] *Generative Poetry*" (Sherwood).

So, to be fair, there may be examples of electronic literature where we can point to the use of sound(s) as a central narrative element. But, generally, while multimedia technologies associated with stand-alone and networked computers have increased forms and opportunities for digital storytelling (electronic literature), sound has frequently been overlooked. This essay suggests sound(s), especially when designed/utilized to provide an immersive context (like the acoustic space / soundscape discussed below), can provide a

valid literary experience and might be considered, like reading and writing, central elements in the digital narratives of electronic literature.

Specifically, I propose the following: 1) Sound (environmental, mechanical, soundscapes, and human vocalization) provides the basis for narrative, the heart of every literary experience; 2) Rather than sound(s) **in** electronic literature, sound(s) might be heard **as** electronic literature; sound(s) might form the basis for new works of electronic literature; 3) Evolving considerations of Internet radio, especially with regard to mobile, interactive, social audio networks, with content drawn from radio arts and radio drama, may provide models for these new forms of electronic literature that are deep, rich, engaging, and immersive literary experiences that locate the text not (solely?) in the acts of reading and writing, but also in the act of listening.

In discussing these points, I will proceed as follows. First, I suggest sound as the basis of literary experience, with speech being the oldest of mediums (following McLuhan) and subsumed as the content of later writing and (through printing) reading. So, although the ELO definition of electronic literature seems to predispose reading and writing, we are, though these literary activities, channeling sound(s) (human voice and others) that provide narrative frameworks. Next I turn to Internet radio as a form of new, digital media especially well-suited for promoting new forms of electronic literature. For example, social, audio networks, facilitated by Internet radio where "interactors" (a term proposed by Carmen Peñafiel Saiz, see below) can collaboratively create and consume literary content that has sound as its basis. Radio drama and radio art seem well suited, as genres of Internet radio content and literature, to explore this opportunity, and I spend time discussing both, as well as providing examples of how they might work to provide new models for interactive electronic literature based on sound(s). The desired end result will be to promote Internet radio as a site for the collaborative creation and consumption of new forms of electronic literature with an increased emphasis on sound and listening.

Sound as the basis of literary experience

As N. Katherine Hayles notes, the examination of book culture has focused primarily on the experience of reading, rarely on the physicality of the artifact being read, or the culture(s) of reading itself (*Writing Machines*). Even a basic perusal of literary history/theory suggests that following the advent of mass publication technologies, literature evolved primarily as a silent, solitary, visual experience, a personal culture between the reader and the immersive, virtual reality of an imaginary world evoked by words (extending speech) printed and preserved on the pages of books. In short, as suggested by the ELO, the literary experience is characterized predominately by reading and writing, replacing the aural with the visual as the primary sensory input. What has been lost of the literary experience by shunting the aural to the sidelines?

Beginning with publication of *The Mechanical Bride* in 1951 and continuing to his death in 1984, Canadian communications theorist Marshall McLuhan developed an intricate taxonomy of media and their effects, reaching back to humankind's origins for comparisons between pre-literate and electric communications, always calling attention to the fact that the medium matters to our experience of the message. For example, McLuhan described 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" (*Laws of Media* 33).

McLuhan expanded the terms "figure" and "ground," both coined by psychologist and phenomenologist Edgar Rubin in 1915, to explore visual perception. By figure, McLuhan

means any object rising from or receding into ground. Ground is surface, configurational and comprised of all available figures (*Laws of Media* 5). Ground is subliminal, always beyond perception except through analysis of emerging and receding figures (McFarland 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. By acoustic space McLuhan suggests expansive, unseen possibilities making it more powerful and encompassing than visual space with its more precise and limited fixed point of view. Acoustic space is a world awash in sounds and pre-literate humankind, the only ever to live in this space, relied on sound as their predominant sensory input. Sound formed the basis for humankind's explanations of and interactions with the surrounding physical world. With aural information emerging from all directions, from anywhere, everywhere, and with no opportunity to shut off or organize the constant stream of sound, pre-literate humankind, according to McLuhan, perceived its world as both surrounding and inclusive, a permeable extension of itself, and they of it (Levinson 1999 5-6).

To summarize, ground is spatial, universal, a surround, corresponding to the environment in which sound(s) exist (MacFarlane 62, 103). If ground is acoustic space, figures are sounds heard in that space, the understanding of which helps to conceptualize the space. Along these lines, when he introduced the term "soundscape," R. Murray Schafer meant to denote the auditory terrain in its entirety of overlapping noises, sounds, and human melodies. A soundscape, he says, is not a flat terrain that can be mapped, but rather a fluid field changed with the introduction of each new sound. Sound provides a place in which embodied social and cultural traces can be carried, often without the awareness of their bearers. Therefore, it is good to choose to actively and deeply listen to the sounds of the world in which we live. By moving "into sound" we open new ways of thinking about and appreciating the social experience, memory, time, and place—the auditory culture—of sound (Michael Bull and Les Beck 16).

One may assume from Schafer that soundscapes are separate from human invention/ interaction. Not so, says Steven Feld. "Soundscapes, no less than landscapes, are not just physical exteriors, spatially surrounding or apart from actors who attend to them as a way of making their place in and through the world. Soundscapes are invested with significance by those whose bodies and lives resonate with them in social time and space. Like landscapes, they are as much psychical as physical phenomena, as much cultural constructs as materials ones" (226)[1]

In soundscapes, Feld says,

> sound both emanates from and penetrates bodies; this reciprocity of reflection and absorption is a creative means of orientation—one that tunes bodies to places and times through their sounding potential. Hearing and producing sound are thus embodied competencies that situate actors and their agency in particular historical worlds. These competencies contribute to their distinct and shared ways of being human; they contribute to possibilities for and realizations of authority, understanding, reflexivity, compassion, and identity (226).

Is this starting to sound like "literary arts"?

Back to McLuhan and acoustic space, filled with environmental sounds, a fearful wilderness where pre-literate peoples had only their abstract thoughts to explain their situation and agency. The emergence of speech technology and orality allowed the communication of abstract thought, thus taming the acoustic wilderness. 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.

McLuhan argued that alphabets and writing preserved and extended the aural nature of speech. But, beginning with Plato (see *The Phaedrus* where he argues the absence of the rhetor/writer means the text cannot be questioned) removal of the sound source prompted debate. With writing, speech became visible, replacing the speaker's voice with text as the primary sensory input. With printing and distribution of texts, humankind was encouraged to see and read (literally and figuratively) the world as a series of discrete pieces, strung like beads on a linear continuum running from the past, through the present, toward the future.

An interesting example is provided by Thomas MacFarlane, 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. The Beatles, as a form of ground (109) engaged with recorded sound to create a "technological fable (myth)" (104) that required active participation from all band members (figures) as well as audience to achieve its creation and consumption.

McLuhan hoped that evolving forms of electric media (primarily television as computer technologies were then nascent) would reverse the ascendency of the visual and retransition humankind into acoustic space. McLuhan argued that electric technologies extended the human nervous system into a global embrace, abolished time and space, and imploded divisions between formally diverse peoples and cultural issues. The world, he said, had shrunk to village size. He saw possibilities for far-flung citizens, through electric interdependence, to live once again, as in earlier oral contexts, under the conditions of a global village (*The Gutenberg Galaxy* 31). Within this global village, issues and peoples are no longer separate, or unrelated. Instead, peoples are part of each others lives (*Understanding Media* 20). In the global village, people share information simultaneously "a brand-new world of allatonceness [all-at-once-ness; everything happens at the same time] . . . a global village . . . a simultaneous happening. We have begun again to structure the primordial feeling, the tribal emotions from which a few centuries of literacy divorced us" (*The Medium Is the Massage* 63).

For McLuhan, the electric medium of radio resonates as a tribal drum, its magic weaving a web of kinship and prompting more depth of involvement for everyone (*Understanding Media* 259, 260). Radio is an extension of the human nervous system matched only by speech. As such, radio affords a tremendous power as "a subliminal echo chamber" to touch and play chords (memories/associations) long forgotten or ignored (264). All the paralanguage qualities that printed text strips from spoken speech are returned by radio. Given only sound, one must fill in missing information using all the other senses, not simply relying on the sight of the action involved with the production of the sound.

McLuhan says radio functions as a new and separate central nervous system. As a "fast hot medium" it provides accelerated information throughput, thus contracting the world to village size. By providing news bulletins, time signals, traffic data, and especially weather reports, radio produces an insatiable thirst for gossip, rumor, and other genres of personal information frequently utilized to involve people with one another (*Understanding Media* 265, 267). Radio, says McLuhan, offers a "world of unspoken communication between writer-speaker and the listener" (*Understanding Media* 261).

This tendency to connect diverse community groups, McLuhan says, is further exacerbated by a DJ culture that unites radio and the phonograph (both featuring speech translated into electromagnetic waves) to produce an artifact more compelling than, for example, the

newspaper, with its continued emphasis on the linear pattern of the printed word. In short, sound reporting is much more effective than written reporting.

Contrary to McLuhan's prediction, however, television and movies further reinforced vision as the primary sensory input—"seeing is believing"—and sound was relegated to augmentation, filling gaps, and providing sound effects for what was seen on screens. As noted earlier, with regard to electronic literature, written text, and its visual experience via reading, remains primary. Sound, sadly, only augments the experience of electronic literature.[2]

Following McLuhan's death in 1984, alphabetic-visual culture migrated to the World Wide Web via the Internet, underscoring his view of media as extensions of human sensory capabilities across time and space (*Understanding Media* 1964). The Internet, with its content digitized and, thus, amenable to manipulation becomes "the medium of media" (Levinson 1999 42). For McLuhan, the nature of the content (visual, textual, aural) did not matter as the "content" of any medium was always another, older medium. For example, the content of speech is "the actual process of thought, which itself is nonverbal" (*Understanding Media* 23-24). Thus, speech is the oldest medium and the most prevalent form of human communication with its origins in abstract thought and presentation and claims a presence in most all media that follow (Levinson 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" (54).

What significance does this hold for locating the text of electronic literature? One answer is that the opportunities afforded by digital media for combining, remixing, and remediating all forms of content, including sound, may predict a return to an acoustic space (ground) characterized by what Edmund Carpenter calls the verbal, musical, and poetic traces and fragments (figures) of oral culture. As part of the Internet, this acoustic space becomes cyber/digital space, and provides both a model and a context for electronic literature.

Unfortunately, this does not seem the case. The first generation of electronic literature, texts by George Landow, Jay David Bolter, Michael Joyce, and others, focused primarily on the hyperlinks between chunks/screens/lexia of text. According to Hayles, these early applications of hypertext theory and the Storyspace interface, despite providing multiple reading paths, preserved a basic print-centric conception by locating the text (with its subsumed voice(s)) in a series of screen views (27).

Second generation electronic literature, with a rich diversity of interfaces and programming languages, experimented with linking narrative with concepts like perspective, access, determinability, transience, dynamics, and user functions. The result, says Hayles, was the emergence of two camps, hypertext and cybertext (so named from its emphasis on computational nature and combinatorial strategies) each seeming more concerned with arguing theoretical basis than exploring the materiality of the literary artifacts produced (28).[3]

Another answer is a series of further questions. If we accept McLuhan's notion of the primacy of sound to human speech, which in turn forms the basis for narrative, then might we situate the basis for literature in speaking and listening? Storytellers, bards, and poets, for centuries before the invention of any form of writing, print or electronic, held audience attention with the sound of their skillfully employed voices. Additionally, music, for centuries, has provided narrative satisfaction without benefit of any visualization, at least on a wide scale, until the appearance of Music Television (MTV) in August 1981. Understanding the primacy of sound in human narrative, may we not reconsider sound as a basis for

engagement with emerging forms of electronic literature? Rather than augmenting the visual text, cannot sound be the text? And in addition to the human voice or music, or even in lieu of, cannot the aural narrative of a work of electronic literature be comprised completely of environmental and/or mechanical sounds, or even what otherwise might be thought of as noise, all figures from the ground of acoustic space?

Internet radio

Characteristics and affordances

At this point, we change the channel to Internet radio, its ability to foster an aural, social network, and what this might mean for electronic literature. We begin in 2001, when Lev Manovich described a "new media revolution" (19) wherein many aspects of culture were shifting to computer-mediated forms of production, distribution, and communication.[4] Manovich identified ten media objects as artifacts of this revolution: websites, virtual worlds, virtual reality, multimedia, computer games, interactive installations, computer animation, digital video, digital cinema, and human-computer interface. Since then, digital media theorists and practitioners have included three more: digital photography, digital music/sound, and Internet radio.

Internet radio is characterized as transmission of digital audio content via the Internet (or cable or satellite). Sounds at the transmission source are converted to digital samples (packets of information), transmitted serially and continuously (streamed[5]) over the Internet (a world-wide network of networked computers), reassembled by a receiver, and converted by a transducer (a speaker) back to the original sound(s). As a digital medium, Internet radio may be distributed to multiple mobile, wireless devices, notably telephones and tablets and can be heard anywhere in the world with access to the Internet, or the ability to download content from the Internet for later playback. As a result, anyone with a computer, audio software, and a connection to the Internet can stream and/or receive Internet radio content no matter their location. In short, Internet radio is aural, and mobile.

As a digital media object, Internet radio (also called web radio, net radio, e-radio broadcasting, or streaming radio), while still evolving, is said to be full of potential and promise. Future scenarios for Internet radio might be triangulated from various directions. For example, three decades following the introduction of radio at the birth of the 20th century, along with many other artists and activists, playwright and theatrical director Bertolt Brecht argued for radio as a two-way apparatus of communication. "Radio is one-sided when it should be two," he wrote. "It is purely an apparatus for distribution, for mere sharing out. So here is a positive suggestion: change this apparatus over from distribution to communication. The radio would be the finest possible communication apparatus in public life, a vast network of pipes. That is to say, it would be if it knew how to receive as well as to transmit, how to let listeners speak as well as hear, how to bring them into a relationship instead of isolating them. On this principle the radio should step out of the supply business and organize its listeners as suppliers. Any attempt by the radio to give a truly public character to public occasions is a step in the right direction" (51).

How may two-way radio communication be realized? George Gilder, predicting future television, says technological advances will allow individuals using inexpensive and prolific equipment to produce and broadcast their own diversity of programming via their own channels. The current model of television programming produced and broadcast by a few corporations will be replaced, as will programming geared to the lowest common denominator. Instead, programming will be rich and engaging. Since anyone can broadcast, the audience becomes actively engaged in both the creation and consumption of content (40-41). Think Ustream (www.ustream.tv), a live video streaming platform with a network of produced and user-generated content as a model. On the other hand, Peter Lewis and Jerry Booth suggest that where television (both traditional and future) is meant to be seen,

traditional radio has long been distinguished by its invisibility. Radio's disembodied sound sources (voices, words, and music) are rich with representation, meant to be heard rather than seen other than through the deep resources of the listener's imagination.

Building on this idea, Don Ihde says, "In the most general terms, auditory imagination as a whole displays the same generic possibilities as the full imaginative mode of experience. Within the active imaginative mode of experience lies the full range from sedimented memories to wildest fantasy. . . . Within the range of the imaginative, auditory imagination may accompany other dimensional presentifications." Between the imaginative and perceptual modes of experience there are "distances and perceptions" regarding copresence, a dual polyphony of perceived and imagined sound. There is, in auditory imagination, "the possibility of a synthesis of imagined and perceived sound." These distances and perceptions can create the sense of an "echo" between, or because of the alternation between perceived and imaginative sounds (61-64).

Two examples. First, the CD-ROM game *Myst* (1993) achieves much of its immersive power through sophisticated sound design. Each level/world is characterized by specific ambient sound(s), wind through the trees, lapping waves, machinery, and more. These sounds accentuate and reinforce the reality of the illusionary experience and they promote sound-based exploration and/or way finding in the various worlds of *Myst*. We have previous experience with this affordance of sound in other game play contexts: objects produce specific sounds when manipulated correctly or not; music tracks respond to mouse movements (Murray 53). Second, one can hear musical aesthetics in the speech contexts that surround them . . . "restaurant soundscapes turned into huge spoken word choral performances and the hushed tone of talking before the start of a movie was akin to the tuning of an orchestra before an evening performance" (Vincent 59).

What does all this mean? Substituting "Internet radio" into the arguments by Brecht, Gilder, and Lewis and Booth above, we can suggest many-to-many broadcasts of rich and diverse digital aural content between participants in social audio networks. One may suggest a desire for shared communication throughout human history and perhaps trace this desire back to prehistoric cave paintings arguing them as attempts to understand and/or portray pre-verbal world knowledge. With the advent of spoken language and orality, storytellers, who served as collective memories, organized and communicated the histories of their tribe or society. The development of writing technologies affixed spoken words to permanent surfaces, allowing them to transcend temporality and geography. The Internet has promoted the communication and sharing of information and insights (both asynchronously and synchronously) since the development of email and FTP (File Transfer Protocol) in the early 1970s. More recent social networking / social media technologies increase the opportunity for sharing and discussing such user-generated content in both public and private contexts.

Social audio networks

Generally defined, a social network is a structured relationship, comprised of individuals tied by one or more types of interdependency: friendship, common interest, sexual relationships, beliefs, and knowledge, communities of like-minded peoples able to communicate with each other in real time. Examples come easily to mind: Facebook, Twitter, and LinkedIn. A tremendous amount of user-generated content is produced as a result of communications between members of online social networking communities. Clay Shirkey suggests readers / viewers, through their conversations about this content, often with the creators, will determine what is worthy. More succinctly, Cory Doctorow says, "Conversation is king. Content is just something to talk about."

At this point, it is important to differentiate between a "social network" and "social networking." Danah M. Boyd and Nicole B. Ellison say *social network* sites and their ability to

promote communication between people already connected with one another and who share the same network are different from *social networking* sites where people seek to meet new people or rekindle old relationships (emphasis added). Traditional radio, with no history of many-to-many communication or interactive dialogue, promotes neither social networks nor networking. Listeners are not directly connected to one another, and so interaction is difficult, if not impossible. Even interacting with the central hub of a radio listening network, the announcer, is difficult as she may be only a pre-recorded voice broadcast from distant corporate studios. Internet radio, however, with content, transmission, and reception digitized, and often relived of responsibility to achieve corporate program goals, is perfectly situated to encourage a collaborative communication context akin to social networks. Members will, according to Jesse Walker, "withdraw from the thick smoke of mediation and interact more directly, more convivially, with others" (11).

Interactivity

Another popular attribute of the Internet is interactivity, the ability for computer software to accept and respond to input (data or commands) from humans. In order to promote interaction, there must be first the desire to interact, to connect socially and to communicate. This desire was discussed previously. Next, there must be something with which to interact (content) and a way to promote interaction (interface). Given these criteria, according to Carmen Peñafiel Saiz, users become interactors, "protagonists of information."[6]

There are examples from traditional radio we may consider as antecedents for interactivity and participation.[7] For example, *The Five Mysteries Program* was an audience participation radio program broadcast from 10 August 1947 to 27 March 1950. Each of the 296 30-minute episodes presented five mysteries dramatized by actors, music, and sound effects. A panel of listeners and studio guests suggested solutions.

From 30 October 1969-7 June 1973, KPFA radio's (Berkeley, California) Music Department provided artists from various disciplines air time to create situations that physically involved the listening audience, making them active participants rather than passive listeners. On 20 November 1969, dance choreographer and intermedia artist Anna Halprin led the audience in a participatory event (Radio Event No. 3: Furniture, 50:59) where they were to rearrange their home furniture in time with musical selections played during the radio program and then visualize a fantasy that occurred to them during the process. Listeners / participants were encouraged to call the station and share their fantasies, which were included in the program's conclusion. Musical selections included excerpts from "Goin' Out of My Head," "Live for Life," "Don't Fence Me In," and Renaissance vocal from "Mozart Symphony No. 35."[8]

Also during the 1970s, 520 episodes of *Ellery Queen's Minute Mysteries* began with actor Bill Owen saying, "This is Ellery Queen with the case I call the . . .." Owen then outlined the case in one minute. A radio station announcer encouraged callers to solve the mystery and win a sponsor's prize. Once they had a winner, the station played the solution part of the episode as confirmation.

Other than Halprin's broadcast, the audience was passive, sitting at home listening. Now, imagine a radio program that has interactors (née listeners) up and out of their flats, seeking treasure, solving puzzles, or participating in quests. Perhaps they are collecting materials/clues from the surrounding landscape / soundscape, or from people met along the way. Perhaps they create and share content with these same, or other peoples. Perhaps they enact a literary event: a book chapter, a scene from a play, the context of a poem. Along the way, they can communicate with others whenever they like, from wherever their current location. Perhaps they, and others in this social network, can create and share content as desired, thus influencing the timeline and artifact of the literary event. Strange

perhaps, but there are antecedents drawn from games, locative media, and electronic literature created for use on mobile telephones.[9] (See Appendix A for a list and brief discussion of significant examples.)

All this and more may be facilitated by Internet radio with its wireless distribution to multiple mobile, wireless devices, notably telephones and tablets, and its ability to create and connect interactors in social networks. In such scenarios, Internet radio becomes non-linear, social, collaborative, an audio network providing global reach even while its focus remains local. Interactors pull content from any number of creators / providers around the world to create content that addresses their particular needs or wants at that moment. Want world music? News? Sports? Talk? Literature? all from someone, someplace different? Interactors structure "programs" by linking or downloading the desired contents and then having a listen. Conversely, interactors could contribute their own content in the form of audio files, podcasts, remixes of content provided by others, online audio conversations and/or conferences. As a result, interactors participate as parallel broadcasters, with the opportunity to contribute as much or more to the Internet radio programming spectrum as the host station (Saiz 67). Internet radio is thus differentiated from legacy radio as it absorbs the contributions and affordances of its content, context, and audience.[10]

As Internet radio becomes increasingly collaborative, interactors become both creators and consumers, able to interrupt/influence/customize the program stream, all while conversing with each other (Burnett and Marshall). This collapse of distinction suggests a more decentralized model of media production, one less hierarchical and more akin to a network where the audience enjoys increased ability to “answer back” by producing their own media (Poster 33). As a result, Internet radio becomes a many-to-many, non-linear experience. Complexity increases with the availability of full access multimedia archives (text, images, video, audio) and on demand functionalities for their manipulation. As the system becomes increasingly complex, it might be said to be engaged in social interaction. But would this be Internet radio, or something else?

Theoretical considerations

At this point, it may be helpful to consider three different theoretical approaches to Internet radio. Each was selected based on its abilities to provide a spectrum of opportunities to explore, in both theory into practice, the opportunities and affordances of Internet radio.

At one end of the spectrum, Andrew Dubber argues in his book, *Radio in The Digital Age*, that "radio is a term used to refer to very different (though related) phenomena." For example, radio is an institution; an organizational structure; a category of media content with its own characteristics, conventions, and tropes; a series of professional practices and relationships; and more. As a result, radio work, content, technologies, or cultures cannot be considered as single subjects or processes, but rather must be considered as an "ecology," especially within the digital media environment in which "radio" is increasingly situated. In a related vein, Susan Merrill, in her edited collection, *Communities of the Air: Radio Century, Radio Culture*, explores a number of ways in which radio was constructed by, and in turn helped to shape, society and culture. The central thesis is that radio, as both technological and social practices, has played a powerful role in shaping Twentieth Century Anglo-American culture.

At the other end, media theorist Marshall McLuhan, argues that every medium undergoes a "tetrad," four questions / laws that, he says, can be asked of the medium and its impact:

1) What aspect of society or human life does it enhance or qualify in the culture?
2) What aspect in favor or high prominence before its arrival does the medium question, obsolesce, or push out of prominence?

3) What does the medium remove from the past, from the realm of the previously obsolesced and put back center stage?
4) What does the medium reverse or flip into when it has run its course or reaches the limits of its fullest potential? (McLuhan and Powers 9)

These questions speak to a series of activities / stages / a process each medium undergoes
1) amplification
2) obsolescence
3) retrieval
4) reversal

Following McLuhan's tetrad, radio . . .
1) Amplifies / enhances oral communication across distance
2) Obsolesces aspects of written communication such as newspapers as the leading edge of news delivery
3) Retrieves some of the prominence of oral communication from the pre-literate (pre-writing) times
4) Reverses into broadcasts of sounds and images (television) if we introduce video (McLuhan 1988, 1977, 1975)

Specifically, as described by MacFarlane, the new medium of multi-track recording enhances music composition by "allowing for the shaping of sounds in motion." Multi-track recording obsolesces music notation as intermediary symbols for musical sound. "Figure now returns to the ground of possibilities." Multi-track recording retrieves dynamic space, creating opportunities for deep participation and involvement. Multi-track recording reverses into individual work overlayed with a definitive interpretation (106).

Between the ends of this spectrum is the idea of remediation posited by Jay David Bolter and Richard Grusin. Remediation, they say, is the representation of one medium in another, a defining characteristic of new digital media. Digital media, they argue, wants to be transparent, placing the viewer in the same relationship with the remediated digital version as with the original. But, digital media always makes its presence known, in some ways more aggressively than others, attempting either to completely refashion the older media, or absorb them completely. But, the new medium remains dependent on the old, even while trying both to absorb and/or dominate them. Neither can disappear completely, even though new forms or substitutions emerge, like adding multimedia (either video, text, images, text as image) to the sound (audio) of radio. In short, something of the old is always present in the new.

So, whether we consider Internet radio a phenomena, a tetrad, or a remediation, there are many opportunities to discuss and explore the future potential affordances and essential characteristics that may be associated with Internet radio. I favor McLuhan's notion that every medium, if pushed to the limits of its abilities, reverses into some other medium. Radio, whose essential characteristic is sound, reverses to television with the addition of text and images. So, for the purpose of this essay, I speak to Internet radio as a sound-based medium, and when I speak to electronic literature I privilege sounds (human, environmental, mechanical) as the figures rising from and receding into the ground of Internet radio.

Although not Internet radio or electronic literature, social networks like woices, audioboo, SoundCloud, MixCloud, and others, with their emphasis on interacting with shared audio content, can help us imagine interactors actively creating, sharing, and consuming content for Internet radio. Scenarios may include interactors tuning in broadcasts /channels of their favorite musical genres, provided by producers (DJs, bands), and offering their own content in exchange. They may seek news/information/advice from trusted sources, or from those

with political bents that match their personal taste(s), again, offering their own views for the mix. These multiple broadcast streams are remixed and cross-pollinated resulting in a personalized narrative experience, created from a pastiche of audio sources, woven together in response to interactors' particular interests, utilizing trusted yet divergent content sources.

Such use of digital technology provides unprecedented participation in the process of creating and consuming content (Turkle). For some, this ability may be frightening, as Janet Murray notes: "Giving the audience access to the raw materials of creation runs the risk of undermining the narrative experience. . . . Nevertheless, calling attention to the process of creation in this way can also enhance the narrative involvement by inviting readers/viewers [interactors?] to imagine themselves in the place of the creator" (40). Murray goes on to say this kind of narrative experience "involves the sustained collaborative writing of stories that are mixtures of the narrated and the dramatized and that are not meant to be [*passively?*] watched or listened to but shared by the players as an alternate reality they all live in together" (44; emphasis added). Again, does this sound like a literary experience?

To summarize, we have considered sound as the heart of literary experience, the oral tradition of narrative, the evolving social nature of the Internet, and the ability of Internet radio to produce interactive, social networks (McLuhan's ground) where one can create and consume narrative content (McLuhan's figures; sound). From this point, we want to consider the ability of Internet radio, using primarily sound, to provide models for new forms of electronic literature that are deep, rich, engaging, and immersive literary experiences that locate the text not (solely?) in the acts of reading and writing, but also in the act of listening.

Radio drama

As suggested previously, with all aspects of the transmission-contents-reception chain/process/link digitized, the experience of radio may become increasingly contextualized within the Internet, a world-wide network of networked computers. Given the interactivity afforded by this context, Internet radio may become increasingly collaborative with its interactors (née listeners) becoming both content creators and consumers able to collaboratively interrupt/influence/customize the program stream, thus making radio a many-to-many, non-linear, experience (Burnett and Marshall). Additionally, given the increasing use of hand-held, wireless devices, Internet radio may be mobile, non-linear, shared, social, collaborative—an audio network providing global reach even while its focus remains local. As with traditional radio, Internet radio may provide diverse genres of programming: music, talk, sports, news, events, and more. Two genres that seem especially interesting as potential sources for electronic literature are radio drama and radio art.

Why radio drama and radio art? Generally, both effectively link to the considerations of acoustic space, soundscape, ground, and figure discussed previously. As described by McLuhan, acoustic space (ground) is spatial, universal, a surround (a soundscape: Shaffer), in which sounds (figures) emerge and recede and are heard. Understanding these sounds (or investing them with meaning(s)) helps to conceptualize the ground-figure relationship. This practice points to the fundamental nature of sound as narrative, itself the basis of literature.

Also previously noted, acoustic space, filled with environmental sounds, was a fearful wilderness where pre-literate peoples had only their abstract thoughts to explain their situation and agency. The emergence of speech technology and orality allowed the communication of abstract thought, thus taming the acoustic wilderness. Storytellers produced explanations for the sounds in acoustic space, and wove them into larger

narratives that helped explain the presence and purpose of humankind, and to preserve and share its cultural histories and memories.

Many of these narratives evolved into what today we call literature, and which we experience through literary activities such as reading and writing. But, at their basis, these narratives are both sound and drama, signifying (to depart from Shakespeare) something significant. Joseph Campbell documented the use of mythology by cultures around the world to underpin conceptions of death and rebirth. Campbell noted the reenactment of myths in the form of ritualistic participatory drama, often involving narrative, music, and/or other sound sources. Connecting to this notion of drama as an essential endeavor of humanity, playwright David Mamet argues "it is our nature to dramatize" (3). Drama is the nature of human perception, he says, and it is a human need to construct, or have constructed for us, narratives, three-act dramas [thesis, antithesis, and synthesis 66] about our lives that "order the universe into a comprehensible form" (8). Our sense of survival, says Mamet, orders the world toward a cause-and-effect conclusion. We construct such dramas to validate "our prized adaptive mechanism" (31), in order to understand ourselves (40), so that we can exercise our own will to create our own character (43).[11]

Following McLuhan, each new media incorporates that / those it replaces / extends. Writing, for example extends the reach of speech, which itself extends the reach of abstract thought. Radio amplifies / extends oral communication beyond the transmission circumference of the human voice and retrieves some of the prominence of myth, ritual, and participatory drama from pre-literate (pre-writing and reading) times. Radio drama incorporates and continues the ability of speech to create and share immersive aural narrative spaces and experiences that convey the power of myth and ritual, central components of literature.

During the so-called Golden Age of Radio, from the early 1920s to the early 1950s, until it was replaced by television as the primary home entertainment medium, radio provided outstanding programming in several genres (music, comedy, soap opera, and adaptations of comic strips, stage plays, movies, and drama) to audiences from many cultural, social, political, and economic backgrounds. Common ground through this broad spectrum of radio listeners was their love for a good story. Broadway, the lead character of *The Damon Runyon Theater*, was always willing to drop everything for an engaging narrative. Each episode was adapted from the work of storyteller Alfred Damon Runyon (1880-1946), each featuring a humorous or sentimental tale about the colorful characters of New York during the years of Prohibition.[12]

The distinctive mix of formal speech and slang, with never a contraction, and most often delivered in the present tense was a hallmark of *The Damon Runyon Theater*. For the other radio dramas of the time, it was also speech that provided the basis for audience engagement and sense of immersion, following the long, long tradition of the sound of the storyteller’s voice to inform, educate, persuade, and entertain. Although no longer as popular, radio drama continues to engage its listeners in aural experiences that are at once compelling and communal (see *Dry Smoke & Whispers Holodio Theatre*). Internet radio could add “collaborative” to this list of attributes, and promote radio drama as an engaging, immersive, and participatory electronic literary experience.

For example, imagine a drama written by different local writers, or writing groups. Perhaps each scene has a different author, and is meant to be enacted at a different, specific, community location. Perhaps the voice actors will be drawn from the on-site audience. The performance of each scene is streamed live via Internet radio. The result: Internet radio moves beyond the rigidity of corporate broadcasting and re-validates interaction with everyday residents of neighborhoods and communities (Papadomanolaki 73).[13]

For other examples, I point to the same antecedents cited in the previous discussion of Internet radio as a social, aural network (see Appendix A). In each case, imagine interactors able to contribute content, as well as interact with that submitted by others, to produce a social, collaborative yet personalized Internet radio drama capable of connecting people and facilitating their communication over time and distance even while remaining local in its focus.

On the other hand, what about radio drama that uses sound(s) other than human voice as its narrative basis? For example: an alarm clock rings, cloth rustles, a squeaky faucet turns and water runs into a basin, a microwave oven dings, a spoon clinks on the inside of a cup, a newspaper rustles, an automobile engine starts, music plays from the radio as street noises pan forward and back, another ding, this time an elevator, and a mechanical voice announces, "Welcome to another day at work!" Such an opening scene supplies Bernstein's previously noted "disattend track," an acoustic structure for what otherwise would be a text-based literary experience. What follows this opening scene depends on the aural imagination and creativity of interactors. Do they continue a linear narrative, portraying the work day activities in sound clips, or do they take the narrative in another, different direction, perhaps an alien abduction? Either is possible, each is equally inviting, and each positions sound at the heart of the literary experience.

One final example. Over the past month, while writing this essay, I received a series of spam email messages, each sent, apparently, from someone with a legitimate sounding but too-bizarre-to-be-true name. The text of each message was obviously randomly generated in response to an algorithm drawing from a vocabulary database, the selected words then formed into sentences. Together, these texts may be said to constitute a larger narrative. In this regard, I turned each text into a differently voiced spoken narrative using speech-to-text technology. Combined with other sounds, these spoken narratives constitute a found art radio drama. A portion of the transcript reads:

"Glove Tuna" — a spam dialogue

Shan Eigner
Spiritualist was a stagnant, uncut, conscious, and overhand woman, with impassable professional eyes. An uncertificated dentist, her sin was a ludicrous novelty grasping on the utensil of the waves.

Pan Vrublevsky
Red provision and the infirm richly reverberate a pauper of meanwhile infinite necessaries of habitat: eels, butterfish, greenfish, jewelfish, bleeding revolution.

Nohj Rebrab
And though he had judged her so almost icily, idly by some squeamish slice of yachting he was justifying her and was thickly different for her, and atavistic that arcade did not tightly understand her.

Virginia Esquibel
Currant had some bracelet strictly to renew from observing, that coventry haunch convenience might enslave borne with valley, a cousin of decade to her discourse, by countryside neither apprentice nor her child could capture exceedingly parched. His cry strengthened her; tantrum flagged swear word thereby.

Bobby Tarkington
Progressively this ignorance, inside crafty hostess cases built with outset bands, maybe were withered and labeled the most knowledgeable playful assails narrowly submerge

before the eyes of a cleft. Conker understood because olympiad was all the while fortunately domineering enliven on documentary he needed.

Quiggley Cluf
At our feet: dazzling tracts of fretful. Rightly over our heads: a priceless causal, ample of mists. "Title", said he, "duke!"
"Now?" said I.

Jonathan Samford
He, nameless geographer, by all rudiments, loves their cirrus, too.

Elyzabeth Zadeh
He was taken ill with the showery knife, though for an anthill afterwards he was there scaly to get up and sweeten simply the cemetery and wardship. We were interested twelve paces cordially; he had the first nursery.

Miles Balkin
The boy threw both his sea and opposition nearest of all to cupola, for the hospital of his lavender.

Aline Lokken
Mrs. Mann, a sunshine of scheme and rightist, was disheveled less he should seem too unnatural as he got to the workhouse. Had he charred renunciation? Had his companions rejuvenated with an outlay of a thousand scrawls?

Rainard Kassin
Root was not inevitably swerved in his will. Chrysanthemum was unstable to Oblonsky for noticing, with his theremin-providing packet, that she had divorced shock precisely at the three o'clock sweatshop.

Mark Edwards
And tribute skulked for her neck. He forever chewed at it, and kindly too. Relaxation, floating up to the circle, locked Fyodor studiously, and began serving the assault in surface.

Gretchen Hittenswitchez
Then away had hen to furnish, the dogs had flown as one before the premier into the allure. Martyr understood because townspeople were all the while studiously piercing discovery on the inheritor he needed.

Meadow Forkin
Willoughby inclined remotely to show me the fell; and it is a flashing asset, I commemorate Ford. Shroud was unbowed to defer his music in shipping both these inclinations.

Ivonne Mcnelly
It took three or four men to kneel Dirt. Nook was broadened too, and he saw her stretching out her progress to duration, resounding increasingly as Beggar carried her solidly. Pilaster suspected that both the exclusive pin money and the vital Sikes had appeased to her schemes. The difference was hidden from all others: to the pneumatic listener, Wharf was sporadic and beyond the watch of their shell.

Cristobal Stanhope
Our appetites dissuaded, we pang an uproarious unlimited for dismantle. In the inhuman witticism was roaring to the miraculous troop for hawking tin saucepans without license; firmly bathing fulfilling for his parting, in hut of the boy-precept.

An immediate response to "Glove Tuna" may well be that its imaginative use of language does not constitute literature. The same was said of the stream of consciousness language play in James Joyce's *Ulysses* when it was first published. Today, this novel stands at the pinnacle of a Western literary canon, and its unusual and often playful linking of language is often cited as a basis for hypertext in electronic literature. The sound of Joyce's language, however, could be heard only in the readers' imagination.

The sound(s) of "Glove Tuna," as an Internet radio drama, with its ability to promote engagement, immersion, and interactivity, may be cited as demonstration of the power of sound to provide the basis for new works of electronic literature. For example, instead of using audio to repeat dialogue displayed on screen, audio might be an integral part of the plot line for a sophisticated drama, for example, a phone tapped conversation, a political negotiation, a phone message that carries additional clues and/or information (Murray 68). Specifically, rather than sound(s) **in** electronic literature: sound(s) might be heard **as** electronic literature.

Although briefly, I have, in this section, addressed the question of how Internet radio may encourage a focus on sound (both spoken voice and other) as the basis of narrative drama as a genre of electronic literature. (For additional research questions, please see Appendix C). These brief examples explored how one might create, share, and remix Internet radio drama leveraging the shift of listeners to interactors. The upshot: Evolving considerations of Internet radio, especially with regard to mobile, interactive, social audio networks, with content drawn from radio drama, may provide models for new forms of electronic literature that are deep, rich, engaging, and immersive literary experiences that locate the text not (solely?) in the acts of reading and writing, but also in the act of listening.

Radio art

As one of the most significant (perhaps *the* most significant) technologies of the 20th century, radio, since its inception, has been considered either an art form in its own right, or a medium with which one can create aural art. The radio art artist is one who uses sound to make art. The transmission capabilities of radio are the preferred medium because, as a result of the practice, the radio medium can be used in ways different than its original intention.[14]

Radio art has as a focus the use of radio technologies (transmission, airwaves, reception) and their abilities to create immersive contexts rich with aural and acousmatic narrative opportunities. Radio art presupposes close, attentive listening, or as sound artist Francisco López suggests, "profound listening," to denote listening without constraints in order to explore and affirm all the information inside any sound (82-83). Radio art is a collision/ collusion between the ancient traditions of orality and the instant information access of mass communication systems where sounds from various sources and cultures can create and sustain new narrative strategies and subvert historical media conventions to provide a bridge between art and popular culture. In this context, radio art may include, but is not limited to, documentary, drama, electroacoustic music, experimental narrative, found sound, field recordings, noise, phonography, sound art, sound poetry, soundscapes (sonic geographies), and spoken word—all composed for the unique medium of radio and uniquely suited for both its content and form of transmission. Given these broad outlines, radio art considers sound, listening, and hearing as real and concrete participatory practices that may engage sampling, remix, appropriation, and purposefully created sounds to promote aural experiences across a wide range of contemporary theory and practice.[15] Three examples should suffice to show the scope and span of radio art: "Symphony of Sirens" (1922), "The city wears a slouch hat" (1942), and "Cityphony" (1985).

"Symphony of Sirens" was conceived by Arseny Avraamov, pseudonym for Arseny Mikhaylovich Krasnokutsky, a Russian composer and music theorist who encouraged the creation of proletarian art and literature following the Russian revolution of 1917 which overthrew the Tsar (Emperor) and eventually led to the formation of the Union of Soviet Socialist Republics in 1922. To celebrate the anniversary of the revolution, Avraamov conceived an annual musical composition using the sounds of factories, machines, whistles, and sirens of all kinds. This "Symphony of Sirens" was to be performed in a different Soviet city on each anniversary of the revolution. The largest and most ambitious concert was held on 7 November 1922 in the harbor of Baku, in Azerbaijan. Avraamov included two artillery batteries in this performance, along with twenty-five steam locomotives, several full infantry regiments, a worker's choir with thousands of singers, and every fog horn, steam whistle, and factory siren in the city. He directed the symphony from a tower using signal flags. Spectators were not encouraged. Instead, everyone was to participate in the singing, marching, or noise making. Explicit instructions were published in three newspapers the day before the performance. The original performance was not recorded, nor broadcast on radio, but was later recreated from Avraamov's notes and instructions.

"The city wears a slouch hat" is music for five percussionists and live and recorded sound effects by composer John Cage commissioned by CBS radio's "Columbia Workshop" to accompany a radio drama by poet/writer Kenneth Patchen. In 1937, Cage promoted the use of noise to make music. "The city wears a slouch hat" was an opportunity to demonstrate his ideas. Cage's original 250-page score was written exclusively for sound effects utilized as musical instruments. Every scene and character speaking part in Patchen's drama was matched by Cage with aural imagery, permeating every aspect of the imaginary city with some form of sound manipulation. Told his score was impossible to produce, Cage scaled back his vision to percussion instruments, sound effects, and miscellaneous amplified sounds. The resulting 28:51 piece is quite unique and well worth a listen.

"Cityphony" is a 1985 pop-infused soundscape by Barrett Golding. Like a storyteller, Golding's voiceover provides introductions to various sounds one might hear in a large city. An early 8-bit videogame-like soundtrack ties the several sound samples together and seems to imply progression through the aurally imagined aspects of the city.

With these three examples we hear sounds (musical, noise, mechanical, environmental, and other) replacing the human voice as the storyteller and creating immersive contexts rich with aural and acousmatic narrative opportunities. Arguably we also hear responses to three different manifestos and their attempts to position sounds (often collaboratively produced) at the center of the literary experience.

The first is *L'arte dei Rumori (The Art of Noises)* written by Luigi Russolo as a 1913 letter to friend and Futurist composer Francesco Balilla Pratella. Published in book form in 1916, *The Art of Noises* is considered one of the most influential texts regarding musical aesthetics of the 20th century. Briefly, Russolo says contemporary music no longer excites or inspires its audience. He urges musicians to carefully explore the city and listen carefully to noises taken for granted but potentially musical in nature. Such sounds might include explosions, whistling, hissing, puffing, whispering, murmuring, gurgling, screeching, scraping, creaking, crackling, sounds created by beating on metal, wood, stone, pottery, and sounds of humans and animals. Future technology, he says, will allow for the manipulation of the pitch and timbre of these sounds in ways that cannot be accomplished with contemporary musical instruments.

The second example is Kunstradio, founded in Vienna, Austria 1987, and broadcast weekly on Oesterreich 1, the cultural channel of Austrian National Radio, ORF. Kunstradio Online

was created in 1995 to announce and archive the weekly broadcast. Beginning in 1996, the weekly program and other live projects were streamed via the Internet. The relative ease of access to this content shifted the program focus from performance to installation. Indeed, several projects have evolved where a number of artists utilizing computer networks at locations around the world can interact with constantly evolving and potentially unending online radio art projects.

As a curated on-air gallery for live and recorded projects, Kuntsradio utilizes radio as the content, context, and site of the art it showcases. It is at once an interface, an agency, and a program where international artists can create and explore telecommunications within the current day broadcasting landscape. The twelve-point Kunstradio manifesto, "Toward A Definition of Radio Art," is notable for both its rhetoric and practical application.

1. Radio art is the use of radio as a medium for art.
2. Radio happens in the place it is heard and not in the production studio.
3. Sound quality is secondary to conceptual originality.
4. Radio is almost always heard combined with other sounds—domestic, traffic, tv, phone calls, playing children, etc.
5. Radio art is not sound art—nor is it music. Radio art is radio.
6. Sound art and music are not radio art just because they are broadcast on the radio.
7. Radio space is all the places where radio is heard.
8. Radio art is composed of sound objects experienced in radio space.
9. The radio of every listener determines the sound quality of a radio work.
10. Each listener hears their own final version of a work for radio combined with the ambient sound of their own space.
11. The radio artist knows that there is no way to control the experience of a radio work.
12. Radio art is not a combination of radio and art. Radio art is radio by artists.

The third example manifesto comes from PizMO, a group of sound artists working in France for over 50 years. This manifesto states . . .
We create experiences and ambiances with audio architecture.
We are an anonymous collective of artists and musicians experimenting w/ audio & radio.
We reactualize a drifting theory thru post-radio, sound-systems and computers.
We explore portable, mobile, temporary & immersive audio spaces and campings.
We favor loading forms, immaterial works and time-based objects.
We experiment with micro-forms & replicas & duplicatas [sic] & palimpsests.
We develop social tactics & share a creative, experimental, workspace.
We open up a lo- & hi- tech critical audio-lounge and a musical floodnet.
We push DIY to DBO (done by other) and finally DWO (done with others) actions.
We are not vaporware, software, hardware but listening groupware.
We become only operators of the downfall of the centralized systems.
We say networks = free co-op production-diffusion-distribution-critical spaces.
We extend the virtual home studio to virtually everyone.
We provide temporary on-air audio & handy interfaces for spare-time social occupation.
We want to extend the idea of soundscape to webscape (soundwalks to webwalks).
We want to change the way you listen to the world and to your immediate environment.
We expand telematic situations and sonic revolutions.
We work on sampled & non-stop streams & audio TAZ [Temporary Autonomous Zone].
We will be able to remain anonymous.
We plug our fingers out of your ears.
We use nanosounds and macrosounds.
We are involved in digital ecology.
We want a direct economy.
We ignore music industry.
We simply do research.

We are audio datasquares and we open radiophonic picnics.
Wear headphones and switch on your radio.

With an undeniable artistic flourish, each of these three manifestos theorize the creation and consumption of aural content designed to position listening to new and different sounds as a carefully considered and purposefully conducted activity. In practice, each seems to suggest social audio networks discussed earlier as sites of collaboration, communication, creation, consumption, and curating. Given this background, radio art seems to provide great opportunities for new forms of literary content and its delivery to interactors in a mobile, collaborative, social network such as proposed previously.

One may argue as well that radio art attempts to address the imbalance of sight over sound, how the visual overly influences the way we relate to and think about our daily lives. This is the thesis Micheal Bull and Les Beck explore in their collection of essays, *The Auditory Culture Reader*, in which they advocate for "deep listening" as a way of 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" (3-4).

Specifically, Bull and Beck argue that several factors are at stake with deep listening

- Sound makes us re-think the meaning, nature and significance of our social experience
- Sound makes us re-think our relation to community
- Sound makes us re-think our relational experiences, how we relate to others, ourselves and the spaces and places we inhabit
- Sound makes us re-think our relationship to power (4)

As noted previously, sound provides a place in which embodied social and cultural traces can be carried, often without the awareness of their bearers. Therefore, it is good to choose to actively and deeply listen to the sounds of the world in which we live. By moving "into 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 16). Does this sound like radio art might provide a fundamental association with literary experience?

Although briefly, I have, in this section, addressed the question of how Internet radio may encourage a focus on radio art (compositions of sound, both spoken voice and other) as the basis and primary sensory input of new forms of electronic literature. (For additional research questions, please see Appendix D). These brief examples explore opportunities for new forms of literary content and its delivery to interactors in a mobile, collaborative, social network such as proposed above. The upshot: Evolving considerations of Internet radio, especially with regard to mobile, interactive, social audio networks, with content drawn from radio art, may provide models for new forms of electronic literature that are deep, rich, engaging, and immersive literary experiences that locate the text not (solely?) in the acts of reading and writing, but also in the act of listening.

Conclusion

In this essay, I have tried to demonstrate, theoretically and practically, that sound(s), especially when designed/utilized to provide an immersive context (acoustic space / soundscape, for example), can provide a valid literary experience and might be considered, like reading and writing, a central element in the digital narratives of electronic literature. Specifically, I foregrounded the idea that sound (environmental, mechanical, soundscapes, and human vocalization) provides the basis for narrative, the heart of every literary experience. I reviewed work by others to suggest that sound, generally, is seen to augment electronic literature. I argued rather than sound(s) **in** electronic literature, sound(s) might

be heard **as** electronic literature, sound(s) might form the basis for new works of electronic literature. Providing theoretical and practical contexts for this belief, I attempted to demonstrate how evolving considerations of Internet radio, especially with regard to mobile, interactive, social audio networks, with content drawn from collaboratively produced radio arts and radio drama, may provide models for new forms of electronic literature that are deep, rich, engaging, and immersive literary experiences that locate the text not (solely?) in the acts of reading and writing, but also in the act of listening.

Portions of this essay are grounded in the work of Marshall McLuhan who foresaw a transition into a postliterate present where the individual viewpoint created by phonetic literacy and print was obsolesced by the preliterate, the collaborative and collective identity of a global village fostered by electric media. Moving outward from McLuhan's ground, figure, and tetrad, I considered sound as the basis of literary experience and promoted Internet radio as a context where sound can play a more predominant role in new works of electronic literature. I promoted social audio networks as a new form of Internet radio where mobile interactors actively and collaboratively create, share, and consume narrative content through many-to-many broadcasts where sound(s) are integral and essential to the literary experience. Two genres seem especially well suited for the form of Internet radio / social audio network / electronic literature imagined here: radio drama and radio art. Drama might be argued as one of the basic components of literature, which, with its basis in the spoken voice, has a great reliance on sound to convey the power of myth and ritual. Radio art promotes the idea that sounds other than the human voice might be the basis for imaginative and thought provoking literary experiences. Given these broad outlines, radio art considers sound, listening, and hearing as real and concrete participatory practices that may engage sampling, remix, appropriation, and purposefully created sounds to promote aural experiences across a wide range of contemporary theory and practice.

As a result, the opportunities afforded by digital media for combining, remixing, and remediating all forms of content, including sound, may predict a return to an acoustic space (ground) characterized by what Edmund Carpenter calls the verbal, musical, and poetic traces and fragments (figures) of oral culture. I contend this acoustic space, this cyber/ digital space, as part of the Internet, provides both a model and a context for electronic literature.

Understanding the primacy of sound in human narrative, may we reconsider sound as a basis for engagement with emerging forms of electronic literature? Rather than augmenting the visual text, cannot sound be the text? And in addition to the human voice or music, or even in lieu of, cannot the aural narrative of a work of electronic literature be comprised completely of environmental and/or mechanical sounds, or even what otherwise might be thought of as noise, all figures from the ground of acoustic space?

The context in which this will happen will be, arguably, social audio networks. With their emphasis on interacting with shared audio content, social audio networks can help us imagine 1) Interactive, social networks facilitated by Internet radio (McLuhan's ground); 2) Opportunities, in this context, to create and consume narrative content (McLuhan's figures; sound); and 3) Collaboratively produced and consumed works where sound(s) might be considered as the basis for new works of electronic literature, if not **as** electronic literature.

Two genres of Internet radio content, radio art and radio drama, seem especially well suited for the form of Internet radio imagined here, and that may provide models for new forms of electronic literature. Generally, both effectively link to the considerations of acoustic space, soundscape, ground, and figure discussed previously.

Radio drama incorporates and continues the ability of speech to create and share immersive narrative spaces and experiences that convey the power of myth and ritual, central components of literature. Brief examples explored how one might create, share, and remix Internet radio drama leveraging the shift of listeners to interactors. Radio art has as a focus the use of radio technologies (transmission, airwaves, reception, etc.) and their abilities to create immersive contexts rich with aural and acousmatic narrative opportunities. Brief examples and manifestos explored how radio art might provide provide great opportunities for new forms of literary content and experience. The upshot: Evolving considerations of Internet radio, especially with regard to mobile, interactive, social audio networks, with content drawn from radio drama, may provide models for new forms of electronic literature that are deep, rich, engaging, and immersive literary experiences that locate the text not (solely?) in the acts of reading and writing, but rather (also?) in the act of listening.

Epilogue

We understand from Marshall McLuhan that the artist / creative person is always to be found on the forefront of any new technology, experimenting with and enhancing awareness and participation with its affordances, and thus extending the capabilities and understanding of humankind (*Understanding Media*).

Radio of the future will be about making use of multiple platforms, especially that which is "best available." Often, the best available platform is mobile. With the transmission, content, and reception of radio digitized, the future of radio is, arguably, in the space between the traditional content segments (songs, shows, genres).

Social audio networks (like Audioboo, Soundcloud, Facebook "We have the most powerful distribution mechanism that has been created in a generation."—Mark Zuckerberg, Facebook) will become broadcasters. The concern will no longer be the "How" but rather the "what." By this I mean context and relevance. Broadcast streams that are and remain relevant will survive / succeed. Fragmentation of listeners will require fragmentation of programming. Selection, relevance, trust, context, sense-making, and value will be what matter, rather than access. As on-demand streaming and downloading become standard features of the Internet, radio of the future we focus on collecting, collating, contextualizing, curating, and connecting the best possible experiences for its participants.

Notes

1. See also Edward S. Casey, "How to Get from Space to Place in a Very Short Stretch of Time," *Senses of Place*, Steven Feld and Keith Basso, eds. Santa Fe: School of American Research Press, 1996. 13-52.

2. Leigh Eric Schimdt argues that "a hierarchy of the senses, with sight vastly ennobled and hearing sharply diminished" (48) is "deeply ingrained in Western religious and philosophical traditions" (43). This results in "a marked dichotomy between eye and ear cultures that has commonly drawn on radicalized constructions of Western rationality and ecstatic primitivism" (48)—most notably the work of Walter Ong and Marshall McLuhan.

3. Hayles goes on to say neither literature, or the text(s) in which it is embodied, have been linked to notions of materiality by literary theory, criticism, or practice.

4. Manovich goes on to say, "This new revolution is arguably more profound than the previous ones, and we are just beginning to register its initial effects" (19).

5. An Internet radio station is, generally, said to be "streaming" its content, rather than broadcasting, the term applied to legacy radio. Streaming is different from downloading the complete audio file from a server before it can be played and heard. Streaming allows one to listen while the stream is being downloaded. Additionally, the stream can be paused or stopped. Podcasting generally is a radio audio episode, self-contained, sometimes augmented by text or visuals, that can be either streamed or downloaded.

6. "Interactive radio" is often used to denote teaching and learning (distance learning) contexts promoted by radio, a definition and direction different from my use of the term in this essay. For further information about the former, see the following: "Six Interactive Radio Stations reviewed" (http://evolver.fm/2011/05/13/you-have-options-6-interactive-radio-services-reviewed/), "Interactive radio system—the revolution of the radio" (http://www.interactive-radio-system.com/en/home.htm), and "Interactive radio instruction (a variant of distance learning): 1 teacher, many students who respond via radio" (http://idd.edc.org/our_work/technology/interactive-radio-instruction-iri).

7. See *The Great Radio Audience Participation Shows: Seventeen Programs from the 1940s and 1950s* (Jim Cox. McFarland & Company, 2001).

8. See the "Inter-Media & Visual Arts" pages at the radiom.org website (http://radiom.org/archives.php?et=intermedia&pageID=1) for information and listening opportunities for episodes 1-5, 7-9, 13, 14, 18, 19, 20, and 23 of Radio Event.

9. Nokia Visual Radio is technology developed by Nokia to facilitate audience interaction with radio programs. Not radio streaming . . . audio is received via FM analog in phone. Graphics and text synchronized to audio streamed to phone. This interactive visual channel is produced by the radio station. Interactivity options include quizzes, messaging, content download, commerce, etc. Platform consists of three parts: 1). a visual radio tool (app?) that can be integrated with the station's broadcast system so the visual content can be synchronized with the audio broadcast programming, 2). A visual radio server that handles two-way traffic between producer and audience, and 3). A visual radio client application on the mobile phone that displays the interactive content and provides a portal/channel for the interaction. See also Appendix A for a list and brief discussion of significant examples.

10. Click Radio, Last.FM, Pandora, Radio Mongo, Rdio, Rhapsody, SonicNet, Spotify, iHeartRadio, TuneIn and other so called "interactive radio stations" provide, despite the listener's ability to influence the genre or artist played, only a passive radio experience, a one-to-many broadcast, much the same as expected from legacy radio.

11. Mamet continues, as an "ur-dramatist" (4), we are often compelled to promote "arts" which "inform us that everything—understanding, world domination, happiness—is within us, and within our grasp" (48). Believing in our own superiority even while convinced of our own worthlessness, we seek to repress perceived external villains. This compulsion to repress is, according to Mamet, reenacted but unsatisfied in romance films, action painting, performance art, and electronic media, all of which he classifies as "pseudoart" versus "true drama" (48), feeding on "information," and putting us all in "a new dark age" (59).

    Only the "nonrational synthesis" (50) of true art (true drama) can help us structure our lives and the world into three-act dramas: "thesis, antithesis, and synthesis" (66). Yet the knife does not necessarily serve to facilitate this tri-part narrative structure, signifying for Mamat, ever the dramatist, a violent and sexist metaphor with which to

counter the violence and totalitarianism of pseudoart and pseudo-superiority. Mamet draws from a poetic description of the use(s) of a knife by legendary bluesman Hudey Ledbetter ("Leadbelly"): "You take a knife, you use it to cut bread, so you can have strength to work; you use it to shave so you'll look nice for your lover; on discovering her with another, you use it to cut our her lying heart" (66). Even more disturbing, Mamet cites the gun as a "very effective tool" for social change" (25), more so than a play.

Yet, backing away from this abyss, in a "second act problem," where the hero is called upon to exercise will and create in front of the audience his or her own character, Mamet sanctions theatrical performance as a communal outlet of rage against our self-perceived worthlessness. The theater, along with religion and magic, "inspire cleansing awe" (69).

So, in the end, Mamet is focused on drama, the theater, as the only acceptable context with which and within which to construct our personal dramas, confront the dual-demons of superiority and worthlessness, and provide a cause-and-effect meaning for our lives. I get this. But not his rejection of electronic media which has certainly promoted the creation and consumption of far more drama than any single playwright, and allowed individuals to focus on external villains using a number of proactive and productive methodologies

12. In addition to *The Damon Runyon Theater,* The *Mercury Theatre on the Air* and *The Campbell Playhouse* are often cited as the finest examples of drama during the Golden Age of Radio.

13. Rosemary Day ("New Technologies and the Facilitation of Participation in Community Radio Stations." *Radio Content in the Digital Age: The Evolution of a Sound Medium*. Eds. Angeliki Gazi, Guy Starkey, and Stanislaw Jedrzejewski. Briston, UK: Intellect, 2011. 193-205) provides an interesting and informative account of how Irish community radio stations incorporated new social technologies to facilitate participation by members at all levels of their communities.

14. In this regard, radio art falls under the larger umbrella of transmission arts, which encompasses performance, video art, theater, sound art, radio art, media installation, networked art, and acoustic ecology in a multiplicity of practices that engage aural and video broadcast media in an intermedia framework where the relationship(s) between artist and audience, transmitter and receiver, can be redefined, along with the telecommunications airwaves as the site for this practice (Joseph-Hunter, et. al.)

15. Jon Leidecker (aka Wobbly) created an engaging and insightful seven-part history of appropriative collage in music, that is, compositions made using recordings of older ones. This history begins in 1908 and continues to the 1990s. Each part, or "variation" is one hour in length. A common theme throughout is communal influence musicians and composers have on each other. Background information, playlists, transcripts, and listening files are available here: http://www.ubu.com/sound/leidecker.html.

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Appendix A

In “34 North, 118 West” (Jeremy Hight, Jeff Knowlton, and Naomi Spellman; http://34n118w.net/) a former industrial area in downtown Los Angeles, California, becomes the site for a locative narrative project. Imagine walking through an urban area surrounding the former Freight Depot with a tablet computer equipped with a GPS card and headphones. Physical maps are also available. GPS tracks one’s position in the neighborhood and triggers audio-visual narratives when entering hot spots created by Hight, Knowlton, and Spellman. Physical elements /details at each location augment the narrative, providing metaphors and symbols for interaction(s) with the characters and history of this place. By wandering about the area and evoking multiple narratives, many lost or forgotten, one can uncover the hidden history of this once thriving part of downtown Los Angeles. The streets, the buildings, the ghosts of former residents, all provide fragments that, taken together, provide a deep and rich narrative of this place

“The Nokia Games” (1995-2005), a series of alternate reality games designed primarily to promote the latest Nokia mobile telephones, involved communication between players through various forms of mass media and featured storylines that changed each year. Each game lasted 3-4 weeks.

“The Beast” (2001) was an interactive web game designed to promote the film A.I., an unfinished film project of Stanley Kubrick, directed by Steven Spielberg, and released in the United States on 29 June 2001. Elan Lee and Sean Stewart, lead designers, both of Microsoft, seeded the initial clues and puzzles throughout the World Wide Web. A discussion group eventually claiming more than 7,000 members called Cloudmakers formed on 11 April 2001 to solve the puzzles and fill in the details of the game. They solved the game on 24 July 2001.

“Uncle Roy All Around You” (2003; Blast Theory; http://www.blasttheory.co.uk/bt/work_uncleroy.html), by Blast Theory, is a game played online in a virtual city and on the streets of an actual city. Online and street players collaborate to find Uncle Roy's office before being invited to make a year-long commitment to a total stranger. Building on “Can You See Me Now?” (2001; Blast Theory; www.blasttheory.co.uk/bt/work_cysmn.html), “Uncle Roy” investigates some of the social changes brought about by mobile devices, persistent access to a network, and location aware technologies.

“I Love Bees” (2004; 42 Entertainment; http://www.ilovebees.com) is an alternate reality game created and developed by 42 Entertainment to serve as both material world experience and a viral marketing campaign for the video game Halo 2. First advertised in a subliminal message in the “Halo 2” trailer, players who visited the website http://ilovebees.com found it apparently hacked by a mysterious intelligence. Playing the game involved solving puzzles to reveal the backstory involving an artificial intelligence apparently from a crash-landed military spacecraft and its attempts to repair damages suffered in the crash. Launched in August 2004, over three million people viewed the website and thousands of people around the world played the game during the three months it was active.

“Hypercities Project” (2009; http://www.hypercities.com) is "a collaborative research and educational platform for traveling back in time to explore the historical layers of city spaces in an interactive, hypermedia environment."

“LA Flood Project” (2010; Christy Dena, Jeremy Douglass, Juan B. Gutierrez, Jeremy Hight, Marc C. Marino, and Lisa Ann Tao; http://laflood.citychaos.com) positions the audience/ user/narrator as the ellipses (. . .) the points between the narrative action: "Voices are being heard on cell phones . . .."

“Mowing Lawn” (2010; http://artonetwentynine.blogspot.com/2011/02/jeremy-wood-mowing-lawn-2010.html), by GPS artist Jeremy Wood, uses satellite navigation technology to compile a personal cartography of his relation to space and time while mowing his lawn.

“[murmur]” (2003; http://www.murmurtoronto.ca) is a digital storytelling initiative that began in Toronto, Canada, and has since expanded to eleven cities worldwide, involves people walking neighborhood streets and finding signs with a telephone number and access code. If they dial the number and enter the access code they can listen to an audio narrative regarding the very spot where they are standing.

Appendix B

Social audio networks: Questions for theory, research, practice, and learning

1) What has comprised mobile, interactive, social radio historically?
2) How was this work created, transmitted, and received?
3) What might be done with sounds not possible before digital technology to create and share compelling mobile, interactive, social radio that is both global in scope and local in focus?
4) Can mobile, interactive, social radio provide a venue for narrative?
5) Can mobile, interactive, social radio provide a level of interaction beyond simply selecting favorite music genres from extended playlists?
6) Are there ideas / inspiration pointing to new forms of mobile, interactive, social storytelling?
7) What stories might be told using mobile, interactive, social radio?
8) How might these stories be told?
9) How could these narratives/stories benefit from opportunities for interactivity, collaboration, and social networking among the listeners and between the participants (nee listeners) and the program itself?
10) How could these efforts help to recenter sound as the primary form of sensory input, even while it is part of a mix of multimedia?
11) How would we approach the challenge of producing and streaming content for mobile, interactive, social radio?
12) What might be undertaken in conjunction with such a project (promotional/ educational materials, website, social media, etc.) to increase its effectiveness and opportunities for social engagement?

Appendix C

Radio drama: Questions for theory, research, practice, and learning

1) What about new concepts, new programs, new narratives that may benefit from opportunities for interactivity, collaboration, and social networking among the listeners and between the participants (nee listeners) and the program itself?

2) What might now be done with the human voice (and other sounds) not possible before digital technology to create and share compelling drama that is both global in scope and local in focus?
3) What stories might be told?
4) How might they be told?
5) How could these efforts help to recenter sound as the primary form of sensory input, even while it is part of a mix of multimedia?
6) How would we approach the challenge of producing and streaming an original drama for Internet radio?
7) What might be undertaken in conjunction with such a project (promotional/educational materials, website, social media, etc.) to increase its effectiveness and opportunities for social engagement?

Appendix D

Radio art: Questions for theory, research, practice, and learning

Radio / transmission arts seem to offer a great deal of latitude and creative license to artists and content providers, and Internet radio assures a medium for its transmission, but . . .

1) What has comprised radio art historically?
2) How was this work created, transmitted, and received?
3) What might be done with sounds (other than the human voice) not possible before digital technology to create and share compelling radio / transmission arts that is both global in scope and local in focus?
4) Could radio / transmission arts provide a venue for narrative?
5) Are there ideas / inspiration to be drawn from Zeega.org, a website purporting to be inventing new forms of interactive and collaborative storytelling using an open-source platform?
6) What stories might be told using radio / transmission arts?
7) How might these stories be told?
8) How could these narratives/stories benefit from opportunities for interactivity, collaboration, and social networking among the listeners and between the participants (nee listeners) and the program itself?
9) How could these efforts help to recenter sound as the primary form of sensory input, even while it is part of a mix of multimedia?
10) How would we approach the challenge of producing and streaming an original drama for Internet radio?
11) What might be undertaken in conjunction with such a project (promotional/ educational materials, website, social media, etc.) to increase its effectiveness and opportunities for social engagement?