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TRANSMISSION AND TRANSIENCE: DURABILITY OF MEDIA IN THE ELECTRONIC AGE

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Abstract: *Radio was the first electronic mass medium, and as such it dominated much of the twentieth century. Radio can be seen as a form of electronic ephemera, conveying content but leaving no lasting primary source for future historians to access. This essay examines the relationship between broadcasting, recording and the larger question of the durability of the historic record.*

In the beginning was the Word. And the Word was the spoken word. Communication by word alone predated written language by thousands of years. For hundreds of generations, non-literate cultures depended on word of mouth and of human memory to convey news and to hand down the stories of the past to their children and grandchildren (Ong, 8-21). The news of victories and defeats and the birth and death of kings was disseminated to the people by men with strong legs and equally strong memories, who could transport this ancient form of breaking news quickly, and perform it accurately. Less urgent news would depend on those who traveled for their own reasons: merchants or religious pilgrims who carried traveler’s tales with them along with their baggage, allowing them to percolate slowly through ports and along the routes of caravans (Lewis, 31).

Culturally resonant traveler’s tales were told over and over, around smoky fires on winter evenings, in taverns over a jar of beer, or in quiet rooms as children drifted toward sleep. Out of these tales came both our early history and our early literature, with little to distinguish between the two (Crowley and Heyer, 64-70).

This oral era of communication was necessarily intimate, since the sound of a human voice is limited by distance. It was also mnemonic, requiring the development of memory tools like rhythm, assonance, and rhyme. And it was an individual art: the skill of individuals to perform well varied. Talented bards and storytellers would have been in demand, ensuring that the stories they told would be carried on for at least one more generation, while the stories performed by the less talented might be forgotten, to die away into fragments and vague allusions.

Some stories, like the work of Homer, survived long enough to graduate into literary form. They were written down, and the content of the spoken form was caught and captured at that point in time. But there was much that was lost. We don’t know what the Iliad or the Odyssey sounded like. The tone, timing and timbre are gone. All that is left is the plot and one version of the words a storyteller might have used to tell the tale. Other alternate versions, perhaps superior versions, were lost.

When the word became the written word, civilization changed. As Marshall McLuhan famously wrote, the medium is the message. (McLuhan, 188) But in western civilization, the idea of writing has been central for so long, that medium and message have become engrained into our very identity. It is hard to separate literacy from Western culture. We have learned to think in sentences. We have perceived our actions through the time dependent tenses of verbs. We have standardized, defined and structured our language—and our thinking—to conform to the constraints of our written language. (Sapir, 225)

We have also learned to write upon a number of physical substances with differing communicative properties. A message written in water has no communicative duration at all. The medium rejects the message. A message written in the wet sand at the edge of the sea lasts only until the water smoothes the sand at the turn of the tide. But messages carved in stone can last for thousands of years. Even words written or printed on paper can last for centuries, depending on how well the paper was made and the conditions under which it is stored. It is this persistence of medium that allows us to touch, see, decipher and comprehend written communication from the past. An inherently fragile material places the message at risk.

The written word also began as a direct human activity. No mechanism, machine or tool was required to mediate the transmission of information. Nothing distanced the reader and the text, but the ability to read, and the sense of sight.

In the early twentieth century, this all changed. With the advent of electricity, telegraphy, radio and finally television, modern humanity shifted away from the literate written word toward a second era of oral communication. In this new verbal culture it was the technology of radio that turned humanity toward a renewed dependence on the spoken word and away from a reliance on the printed word. As the century progressed, Americans and people around the world tuned in more and more to the new electronic village square to hear the news of the day, to be amused and to be entertained. (Douglas, 29-30)

Radio was a magical medium: it defeated distance, that former limiter of verbal communication. No longer did people have to assemble physically to communicate. From humble prairie farmhouses to urban penthouses, people far removed from a radio studio could hear the voice of a speaker or singer as clearly as if they were in the same room. As microphone technology became perfected, it was possible to give a vast audience the simultaneous sensation of intimacy. (Whitehead 10-13) An actor could whisper into a microphone and each of the many people tuning in could hear the soft words as if they were a private message murmured into an ear by a lover. For the first time since ancient pre-literate oral communication however, no physical record was automatically left to document the work of communication. Radio leaves no trace unless it is recorded.

Although many physical objects were involved in radio, the programming - the sound of the actual broadcast - is a form of electronic ephemera. Most radio broadcasts were never preserved in an audio format. For example, radio carried the news of Lindberg's heroic flight across the Atlantic in 1927, and radio carried the repeal of Prohibition in December of 1933. But as was the case with a thousand other newscasts, at best we have typed transcripts of all the broadcasts that were aired during those momentous times. Of most of the voices in the air, we have nothing (Douglas, ix).

It was also on the radio that listeners heard the account of the Hindenburg disaster in 1937. This historic broadcast has survived in recorded form today, but only because of a technical coincidence. Announcer Herbert Morrison and his audio engineer had been covering the arrival of the Hindenburg Airship as an experiment in recording news for delayed broadcast. Morrison's description began as a routine description of the docking operation, but became galvanized by emotion as the giant dirigible exploded before him: The sound of his voice cracking under the emotional stress of the moment conveys far more than any static reading of a transcript ever could. (Morrison, 1937)

The important point to abstract from this narrative is that the preservation of this bit of history was an accident of technology. Had the event not been chosen for an experiment in recording no one would ever have heard Morrison's words and the explosion of the Hindenburg would have remained an image surrounded by silence.

The recordings we now have of many major shows from early radio also exist as a kind of technical side-effect. National network broadcasting relied on recordings to distribute popular shows to listeners far removed from large broadcasting centers, so recordings were made on metal or lacquer discs,

which would be transported to smaller stations for delayed broadcast. These audio disks remain as a valuable and durable source of archival audio material. (Biel).

Even so, it is impossible to experience this material as it would have been heard by the American listener of the past. These recordings stress the exceptionality of each program as if it were a discrete piece of entertainment. In context, the recording would have been surrounded by interstitial elements, creating a seamless radio experience. This connective material was hardly ever recorded, so at best, we have an incomplete record of the radio experience.

Shortly before World War II, advances in plastics and coatings technology made the production of magnetic audio tape practical, and tape recording quickly replaced recording to disk for most broadcast operations. Tape had many positive aspects: the length of uninterrupted recording time was increased; recording tape could be cut and spliced back together, allowing for audio editing; it could even be erased and used again and again- something not possible with the earlier recording discs (Darling). So, although it was theoretically feasible to record a greater number of radio programs for posterity using audio tape, in actuality, most programs were erased and taped over as a way to save money.¹ As the numbers of radio stations soared in the 1950s and 60s, more radio was being produced and aired, but with each year, proportionately less was preserved in audio form. Of course it would have been impossible to record everything being broadcast. A single station taping every moment of its 24 hour broadcast day, would fill 166.8 linear meters of shelf space in a single year, a wall of floor-to-ceiling shelves stretching more than 20 meters.² For every decade of complete audio documentation, a station would have had to set aside a large room just for archival storage. Additional expense would have been incurred by the necessity of hiring an audio archivist. This scenario would have been unlikely even during the relatively profitable early days of radio. After the advent of television, decreased profits due to competition for advertisers and audiences would have made such an expenditure entirely out of the question (Sterling, 336-343.)

Since it was impossible to record everything broadcast on radio, some criteria must have been in place to decide what to keep and what to discard. Much radio was never recorded in the first place, and other decisions were driven by technological or economic limitations. But some recordings were not preserved because the broadcaster or the performance failed to meet commonly accepted standards of significance. These judgments of inferiority and relative worthlessness were not all externally imposed, but rather internalized ideas on the part of the producer about the lack of importance of his or her effort in comparison to the output of a large and more professional station (Dudman). This situation is similar to the fate of slave journals or women's letters from the nineteenth century. Rare to begin with, and created with an apparent humility not usually associated with the journals of white male elites, few documents from these subjugated classes exist, so that it is difficult for the modern historian to find a healthy number

¹ In many stations, such as WCPN-ideastream in Cleveland, Ohio, a routine practice was to record the entire broadcast day from sign-on to sign-off on a series of long reel to reel tapes called "Logger Tapes." These tapes were for internal use by management to assess the sound qualities and performance of on-air staff. They also functioned as legal evidence of actual broadcast content in case of litigation or alleged FCC violation. After a certain number of days, a logger tape would be erased and re-used to tape another day of broadcasting. At MPBN Radio in Bangor, Maine whole days of interstitial material, that is, the connective material between programs, were routinely recorded not only so that management could critique the skills of on-air staff, but also to participate in the annual Program Director's FLO awards given to the station with the smoothest flow of announcements, promotional spots and other material. These tapes were also recycled. (Helen York observed the preceding as an employee: York worked for WCPN from May of 2002 to October of 2002. She worked for MPBN from 1986 to 2001.)

² This figure was arrived at by multiplying the width of a boxed reel to reel tape (0.75 inches) by the number of hours in a year.

of primary sources. And although it is almost certain that a large number of these materials were simply thrown away because they were incorrectly deemed to hold little significance, their scarcity tempts the modern historian to apply a kind of survival of the fittest thinking to the dilemma: certainly if there had been any real value in these diaries, these letters, or these tapes, they would have survived, wouldn't they? The answer to that rhetorical question is "No."

What has survived in radio history is the radio. Not the verb, "radio" or the science of radio, or the art of radio, but the material artifact called a radio. This durable facet of radio is well preserved in institutions like The Museum of Radio and Technology in Huntington West Virginia, which houses one of the largest collections of antique radio receivers and other equipment in the United States. There, one can find everything from humble and home-made radio sets crafted from Quaker oatmeal boxes to extravagant pieces of electronic furniture that once graced the houses of the rich and powerful.

Compared to radio equipment, audiotapes of radio programming are more difficult to collect, categorize and preserve. First, the tape must be played to identify and index its contents, while a copy is dubbed to a more modern recording format. Tapes stored in improper conditions require special conservation to permit even one playback before the complete disintegration of the oxide matrix. Heat, humidity and mold can all imprison the encoded data, leaving the would-be listener feeling locked out without a key. Improper playback could destroy the tape, but never playing it back negates its purpose as a vehicle for communication. Providing proper storage conditions and knowledgeable conservators for damaged tapes can be an expensive undertaking.

The widely popular nationally syndicated programs that were recorded to disk or tape, have been preserved in relative abundance at museums like The Paley Center for Media, formerly the Museum of Television and Radio, in New York City. Guests at the museum can listen to old radio shows for hours, a time-consuming process not likely to appeal to the casual visitor. However, no clips from any of the material housed there can be copied, even for academic use, since the shows, voices and music are protected by overlapping and sometimes contradictory copyrights. (Museum of Television and Radio FAQ) This combination of time-intensive interaction and academic inconvenience seems to ensure the museum will be popular with neither tourist nor researcher.

The mainstream audio material in the collections of the big museums has been preserved and is likely to be preserved (Gomery, xiii). But when it comes to local, rural, offbeat, low-budget and ideologically unpopular broadcasting, the kind of programming not housed in national museums, there is an actual archival gap. Listed below are just a few of the kinds of radio, rarely recorded and rarely preserved, that flew under the radar and into that archival gap.

Pirate Radio: Illegal and unlicensed, radio pirates took advantage of available spots in the radio band to broadcast for a few hours or a few minutes using clandestine homemade radio transmitters. The content of their programming ranged from the silly to the seriously revolutionary. Although some pirates like the notorious Alan Weiner have gone to great lengths to preserve recordings of their broadcasts, most material from this genre is lost or inaccessible. (Weiner) Webcasting, currently not under FCC jurisdiction, has made Pirate Broadcasting nearly obsolete.

Partisan Radio: Included in this category were labor and socialist radio stations, hate broadcasting, and low-budget religious programs. (Godfried)

Borderlands Radio: This type of broadcasting often featured broadcasts in either French or Spanish and was intended to serve the population along one of the United States' borders. Examples of French broadcasting in the Northeastern United States are especially rare³

³ Evidence for programming of this type is so scarce as to be almost anecdotal. Yet there are recurring references to small-time bi-lingual broadcasters in upstate New York and Vermont. The author is currently researching Franco-

Local Radio: These small stations once existed in every state. Local newscasts and locally produced advertising, weather reports, community announcements and low budget attempts at radio drama or other programming filled the interstices between shows featuring recorded music. Production values were lower than the station budget, and on-air announcers were either young and inexperienced, or old and washed-up. Although the standard American accent was a requisite for employment at large national stations, small stations like these would hire announcers with distinctive regional accents, as well as odd vocal quirks of all kind (Bissett).

Technical Difficulties and Irritating Radio: Not everything broadcast went as planned. Distortion, static, the inadvertent broadcast of test-tones or verbal mistakes all went out over the airwaves. CONELRAD and Emergency Broadcast Alerts also fall into this category of radio forgotten because it was annoying. While it might seem obsessive to preserve the equivalent of audio trash, important research questions as yet unasked might have their answers in tapes like these (York).

With the advent of digital formats, it has become possible of course to record nearly everything, so the specific problems pertaining to audio tape are no longer relevant. But as Science Historian Howard Segal has pointed out there is no technical utopia. Every advance in technology brings with it its own set of unforeseen problems (Tenner, 269). In the case of digital recording, durability and reliability of materials are a serious concern (Howell, 25). Early compact disks and DVD's began to suffer data recovery deterioration only ten years after their introduction. The plastics involved needed to be perfectly clear to allow the laser data reader within the device to scan the digital information. Plastic from the 1980s and early 1990s began to lose its translucency within a decade. While more recent disk technologies have a longer "shelf-life" they are not the perfect enduring medium that we had hoped for. To keep the recordings of a broadcast station audible for posterity, it would be necessary to dub or re-record all the survived material every 10 to 20 years, an enormous task requiring a permanent workforce dedicated to the task.

The major obstacles facing the preservation of extant tapes of radio especially as it existed in the era from 1950 to 1990 can be divided into two categories: technological pressure and legal hurdles. The first problem is the speed of technological change. While print media persisted over centuries, slowly incorporating new technologies that did not invalidate previously printed material, broadcast technology has been changing at an increasing rate, with each change creating incompatibility with prior formats. For example, the invention of high-speed printing presses did not make all the books in libraries obsolete and unreadable. On the other hand, the invention of the computer-based promotional spot player did make all the cartridge style tapes obsolete. Without a cart-player, the cart is an unspeaking artifact. Without a reel to reel tape player, a reel of tape is silent and undecipherable. In the last twenty years, stations have used and abandoned carts, cassettes, reel-to-reel tape-players, DAT tape and the minidisk in favor of the digital workstation. With each of these changes in technology, previous formats have become obsolete and unreadable. As the last of the reel to reel players is moved out of even the most backward stations, it becomes increasingly unlikely that any of the unplayable tapes gathering dust at the station will be preserved. And even if recordings are made and preserved, the logistics of making them available to researchers can be daunting: According to Martha Howell and Walter Prevenier, the French Television has 500,000 recorded programs but no way to make them available to researchers (25).

The other problem is the dilemma of ownership. An hour of radio might represent the intellectual property and copyright interests of the station, the announcer, guests, composers, performers and various licensing agencies. Sorting out which legal entity holds the strongest claim for ownership of the material

phone stations WFAU and WCOU that operated in the state of Maine from the 1930s until the 1960s to determine if any audio tapes exist.

has resulted in an academic impasse, in which no one is willing to relinquish ownership of these recordings, but no one will take the responsibility to protect them.

Signing Off

The loss of American broadcasting history is a quiet vanishing, a growing silence. Harvard Archeologist Alexander Marshack wrote that Prehistory was mute. It seems ironic that parts of modern history will also be mute. Although we now have the tools and the technology to record and preserve the ephemeral voice of mid to late twentieth-century American radio, we have failed. The majority of preserved audiotapes are a distorted reflection favoring middle-of-the road tastes and national popularity, while undervalued kinds of radio were rarely recorded in the first place. When programming that failed to meet conventional standards of excellence was recorded, existing tapes were likely to be neglected and scrapped. Many tapes were discarded regardless of their content, which had become inaccessible due to tape deterioration or changes in media format. Many recordings found without an accompanying playback device were discarded as a simple expedient. Even with the presence of a playback device, tapes had to be played back in something close to real time. Rather than expend the time and effort required for the investigation of material on “mystery” tapes, radio personnel tossed away many of these recordings without ever listening to them.

At some point in the future, the loss of these primary sources will become an accomplishment instead of a process. At that point, what exists will comprise the depth and breadth of all that can be known about the art and science of radio during the penultimate decades of the Twentieth Century.

But according to the Law of Conservation, energy can neither be created nor destroyed. Being energy, it is thought that radio waves go on forever, beyond the atmosphere of Earth, beyond the edges of our solar system. There, enduring at the speed of light, the lost sounds of radio rush on to what ultimate receiver it is impossible to imagine.

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