

**After the Interview is Over:
Managing Digital Oral History Collections**

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INTRODUCTION

In the past ten years, there has been an explosion of digital technology as well as options for distributing digital content to users. This paper considers digital technology as it relates to oral histories, including a short history of the digital revolution, a discussion of research in this area, an overview of analog-to-digital conversion and research regarding preservation. This paper also includes a discussion of trends for making oral histories available to the public such as streaming media available on the World Wide Web and cutting-edge technologies such as virtual immersive environments. While providing an overview of digital oral history trends in general, a brief discussion of the oral history program at the Jet Propulsion Laboratory is included to provide use of oral history.

BACKGROUND

A Brief History

People in almost all civilizations have oral history as part of their culture in some way or another. In Western culture, written histories using documented sources have traditionally been seen as more reliable than eyewitness accounts because of concerns about the unreliability of memory. Credibility began building for oral history in the mid-20th century through such institutions as the Columbia University Oral History Research Office (Swain, 2003). Today oral history is ubiquitous not only in academic circles but also in corporations and government agencies who see oral history as a means of capturing their organizational history and, in some cases, turning oral history into marketing and outreach materials.

In his book, *Doing Oral History: A Practical Guide*, Donald Ritchie (2003) describes oral history as collecting “memories and personal commentaries of historical significance through recorded interviews.” This is in alignment with other sources on the subject such as the Online Dictionary of Library and Information Science, which includes not only the recording but also the transcript as a key component of an oral history (Reitz, 2007).

Librarians and archivists have a central role to play in the preservation of and access to oral histories. Historically, librarians and archivists have insisted that “oral history interviews were public documents that should be open and accessible to all” (Swain, 2003). As such, archivists have been at the forefront of creating best practices for digitization of all kinds of archival materials, from books to manuscripts to audio recordings. (Tibbo, 2001). In fact, Swain (2003) argues that “oral history will have an important documentary role in the twenty-first century as more and more information is disseminated over electronic media.”

The Oral History Program at the Jet Propulsion Laboratory

The first oral history interviews at the California Institute of Technology’s Jet Propulsion Laboratory (JPL) were conducted in the 1960s to capture stories of pioneers whose work laid the groundwork for JPL’s involvement with NASA. In the 1930s a group of graduate students under the leadership of professor Theodore von Kármán began researching rocket propulsion. In 1936 the first rocket motor was fired at a site five miles from the school. Soon after, the group began working for the U.S. Army on missile projects, and eventually the Jet Propulsion Laboratory was formed. In 1958 it became a NASA center, managed under contract by Caltech.

The oral history collection includes over 350 recordings with scientists, engineers, managers, and other personnel. Early recordings were done using reel-to-reel equipment, and

then replaced by cassette tapes. The majority of the reel-to-reel recordings were transferred to cassette tapes to facilitate use and ensure preservation. In the past two years, the archives staff has begun digitizing the collection and are now looking to incorporate oral history audio clips with the JPL history site and other online content.

LITERATURE REVIEW

In the past ten years, as digital technology has become both more affordable and more widespread, archivists and oral historians have begun to consider how digital technology might apply to oral histories. Whether or not the “digitization of sound and image will challenge the current dominance of transcription and return aurality to oral history” (Thomson, 2007), is still up for debate within the community. The Oral History Association invited three prominent historians to postulate on how technology might change the field in the coming years. These were captured in the article *Reflections on Oral History in the New Millennium* and include insight from Ritchie as well as Sherna Berger Gluck and Brett Eynon. (Gluck, Ritchie and Eynon, 1999) Clearly the digital component to oral history is a major factor in current practice, as witnessed by the upcoming Oral History Association’s annual meeting, whose focus is “A Convergence of Interests: Oral History in the Digital Age” (Oral History Association, 2008).

Several articles discuss library experiences converting analog recordings to digital, providing insight into best practices. Trevor Bond, a librarian at Washington State University and an instructor for courses on digital recordings through the Online Computer Library Center (OCLC), writes about his library’s experience both in converting analog to digital and as an effective means of delivering audio interviews via the Internet. (Bond, 2004) Other librarians have also shared their experiences, creating a variety of resources regarding conversion factors,

cataloging and metadata experiences, streaming audio and Internet delivery, and issues regarding access and retrieval. Archivists and catalogers alike are keen to see oral history properly catalogued so that patrons will be able to access and use these materials.

There is still some debate in the community about the quality and permanence of digital preservation. While some archivists are pushing to convert reel-to-reel or cassette recording to WAV files, other argue that digital technology does not necessarily have any better lifespan given changing technology patterns than analog technology. As Helen Tibbo points out in her article titled *Archival Perspectives on the Emerging Digital Library*, it is critical to determine what should be saved and what should or should not be digitized (Tibbo, 2001). After all, both digitization and maintenance of large quantities of data cost money, and as in other fields, archivists must do some type of return on investment analysis. This is an area that also dips into records management, and concepts from that field often make their way into the literature. Kevin Bradley, a renowned expert in digital preservation, argues for digital sustainability, which includes considering changing technology and “the resources necessary to undertake” a sustainable approach (Bradley, 2007).

Case studies and practical experience play a large part in the literature. Authors from various types of organizations, both academic and nonprofit, have contributed their experiences with video oral histories, creating repositories that facilitate searching and browsing and cataloging and metadata methodologies. As Graham and Ross point out in their article on metadata at the University of Southern Mississippi, “the commitment to quality within the challenge of resource limitations” is a major factor in creating systems to support digital collections (Graham, 2003). As more organizations develop digital collections, the literature will continue to grow with case studies and instructive papers.

Some, though not many, authors have written on the topic of oral history preservation. Most literature on preservation is generic and not specific to oral history, instead covering digital collections in general. These collections include digitized letters, formal papers, images, multimedia files, etc. Nancy MacKay recently authored a book specific to preserving oral history, covering archival practices that should be applied to oral history transcripts and recordings, whether analog or digital, though she does include a special section on digital preservation (MacKay, 2006). There is clearly a gap in this area, however, and more studies on oral history preservation would benefit the community of practitioners.

When considering oral history, it is wise to include some discussion of how oral history might be used now and in the future. Many journal articles describe experiences by summarizing oral history programs, including such topics as African-American history, gay/lesbian/bisexual experiences, holocaust experiences, and settlement issues in the past. Archaeologist Hamish Forbes (2000) wrote an insightful article about how oral history was critical to uncovering settlement patterns in Greece in the 18th and 19th century. Forbes argues that oral histories play a critical function in any anthropological or archaeological study because although academics prefer written records, they “tend to be produced by individuals who belong at best tangentially, and often not at all, to the communities being described.” Oral histories may have more credibility in some cases, according to Forbes. It is impossible to ignore literature that incorporates and validates oral history as part of the broader analysis of oral history literature.

A major authoritative source of information regarding digital audio files in general is the Colorado Digital Program’s *Digital Audio Best Practices* (2006). Its best practices consider analog-to-digital conversion as well as born digital files.

DIGITAL CONVERSION, ACCESS AND PRESERVATION

Sound recordings have changed dramatically in the last 150 years. At the turn of the 20th century, wax cylinders were commonly used to record up to four minutes of content. They were used by the U.S. Bureau of Ethnography in the 1890s to record Native American stories and songs (Ritchie, 2003). In the mid-1940s, open reel recorders were used and later replaced by compact cassettes. Both of these formats required special storage due to the fragility of the magnetic tape but their portability made them popular among oral historians. Around 2000 the digital recorder gained popularity, and has quickly become the means of recording oral history interviews (Colorado Digitization Program, 2006).

Each change in technology has required some consideration by an archivist as to whether to convert to the latest format. In addition, in light of the past, the likelihood that technology will further evolve in the coming years is high and as such, “we must provide a secure infrastructure to ensure the enduring viability of digital content” (Horrell, 2007).

Archivists must decide how to ensure the longevity of oral history interviews, both the audio component as well as the text transcript. The advent of digital technology represents not just a change in how recordings are stored, but also a change of focus from the transcript to the recording itself. Scholars traditionally have relied upon the transcript for study, but digital technology is providing new means of scanning recordings so that a scholar can go right to the content they are interested in (Christel, Richardson, and Wactlar, 2006). “The digitized audio files are not solely a replacement for full-text transcripts but do serve as accoutrements to the text while providing entrée for younger researchers who increasingly insist on digital access” (Weig, Kopana, and Lybarger, 2007).

Converting Analog to Digital

Many institutions are converting analog recordings to digital, not just for preservation purposes but also to allow more access to recordings. Some have found that analog collections have two major barriers that prevent widespread use. The first issue is that analog audio recordings are not easy to scan for content. A user has to review the transcript, then navigate the analog recording to try to find the clip he or she is most interested in. The second issue is physical access. Scholars do not always have the financial means to travel to a library or archive site to access analog recordings (Bainbridge and Cunningham, 1998).

Before any conversion process can begin, a few things should be verified. First, “librarians have to consider whether or not the digitized materials will violate copyright and intellectual property laws” (Liu, 2004). Second, the quality of the original recording must be assessed so that the sound is good enough and will be worth the resources spent on conversion and to be sure the original medium will not be damaged during the transfer process (Colorado Digitization Program, 2006). In some cases, the quality of the original may not have been good and would not be worth resources spent to convert the file. This type of decision must be made with consideration for the content of the file as well. In some cases, the recording may be rare and unique and therefore conversion to digital is worthwhile despite poorer quality.

There are two options for converting analog to digital. An organization might choose to convert the audio recordings on their own. The decision to do this is based largely upon the size of the collection and a long-term return on investment analysis about whether conversion equipment will be used in the future (Colorado Digitization Program, 2006). The other option is to hire a company experienced in this area to convert the files. A 30 minute interview requires about 19.8 megabytes of disk storage (Bainbridge and Cunningham, 1998).

Project Jukebox at the University of Alaska was one of the first organizations to successfully convert analog to digital. They created a database to store the files and distributed them via CD-ROM. They found that oral history collection requests have increased since digitizing the recordings (Smith, 1991). “As electronic records stored in different outdated formats continue to be lost, archivists again must step into the active role of...migrating old formats to new” (Swain, 2003).

The University of Kentucky Libraries in 2005 undertook an analog-to-digital conversion process of their oral histories. They had 6,500 interviews on a variety of topics that they wanted to convert. To undertake this task, they purchased a high-quality analog cassette tape player, an analog-to-digital converter with a high gain preamplifier, a mixing board to enhance the signal, a high-quality sound card, and file storage. Due to the size of the collection, this proved to be the most cost-effective means of converting their collection (Weig et al 2007).

Born Digital Recordings

Now that digital recording equipment is widely available and at affordable prices, it is most effective to record directly onto a digital device. Known as “born digital” recordings, these files have the benefit of having good sound quality and the files can be made accessible almost immediately (Colorado Digitization Project, 2006).

The quality and resolution of digital recordings is determined by the number of times the sound’s amplitude wave is measured (described in kilohertz) and the range of numbers used to record each measurement (also known as bit depth). It is widely accepted that audio recordings should be captured in WAV format at a sample frequency rate of 44.1 kHz with a bit rate of at least 16, but preferably 24 (Colorado Digitization Project, 2006). Although humans hear at

about 22.05 kHz, most experts agree that double that frequency is the best bet for getting the highest quality recording. “In short, the higher the bit depth and sampling rate, the higher the capacity to capture more information from the audio source” (Weig et al 2007). WAV files, however, tend to be quite large so a collection manager has to consider how to store the WAV files for long-term preservation and whether a compressed format such as MP3 should be the standard for the distribution.

Preservation

Preservation is a central issue to archivists, and that is no different when considering preservation of oral history collections. One of the principles of the Oral History Association is that sponsoring and archival institutions must work to “to preserve easily usable records; to keep abreast of rapidly developing technology for preservation and dissemination” (Oral History Association, 2000). Preservation includes multiple components when it comes to oral history. Most collections include at least one if not more audio files as well as a transcript and release forms whereby both interviewer and interviewee have approved of the distribution of the files. These release forms may also include restrictions for access. Most collections will include a master copy of the recording as well as a distribution copy. “Whatever the storage decision, easy access to the copy tape collection is vital to ensuring its continuing well being” (Gregg, 2000).

Many libraries are facing the analog-to-digital conversion issue in part because the longevity of cassette tapes, which was the prevalent medium in the 1960s-1990s, have a life of approximately ten years. In addition, preservation practices for magnetic tapes require active management to ensure the tapes do not bleed. Therefore the conversion to digital is not only

smart from a sustainability standpoint but also because of immediate need to save cassettes that may be at the end of their life cycle. (Weig et al 2007).

Preservation is complex when technology is involved. As Donald Ritchie stated in his article with Sheryl Gluck, “The preservation of electronic data will be further complicated by fast-changing technology that will confront archives with periodic choices of converting older electronic records into new formats or preserving relics on which they were originally recorded” (Gluck et al, 1999). In the past few years, many archivists have considered this issue as a central one in preservation. “In the digital archives, preservation is increasingly defined as sustainable access” (Bradley, 2007). For analog oral history, this means maintaining not only the recordings but also the equipment on which the recording can be played. For digital files, this means maintaining them in formats that are not software-specific.

Accessibility

While preservation is important, accessibility also has a key role in any oral history collection. Institutions must validate the resources spent on maintaining oral history collections based on use. “No matter how passionately one argues that it is important to keep a record for future generations, a collection needs to attract attention and new users.” (Gregg, 2000) This is one reason why many institutions are making their oral histories available on the Internet.

Before making any oral history recording or transcript available, copyright and intellectual property issues must be addressed. An archivist should consider whether the release signed by an interviewer and interviewee covers additional uses. Often this means drawing on legal counsel to review forms and, in some cases, revise the forms and seek an additional signature. For example, interviews conducted in the 1960s might have releases for restricted use

such as book or article publication but would not have considered use of the World Wide Web. The Oral History Association (2000) lists the responsibility of archivists to “make good faith efforts to ensure that uses of recordings and transcripts, especially those that employ new technologies, comply with both the letter and spirit of the interviewee’s agreement.” At JPL we do not list oral histories in our catalog unless a release is on file. Because many of the interviews were conducted before releases were considered necessary, we have worked to procure releases on older transcripts by finding the former employee or their heirs.

Some organizations have also made the decision to only provide short clips of interviews via their Web site. This makes for a smaller file and download time for end-users and less storage needs for Web site servers. A person pursuing an audio file for research purposes can also listen to a clip and determine if they want to request the complete file. At the Jet Propulsion Laboratory, we provide short clips not only to cut down on file size but also to diminish the time required to review the files for intellectual property and export control issues. A shorter file means a shorter turnaround time for making the recording available for users.

One other major issue regarding accessibility is appropriate information retrieval methods. At the University of Southern Mississippi, librarians undertook a project to digitize their Civil Rights interviews. In order to ensure access to the digital files, the librarians used Dublin Core metadata to properly identify the files and also provided a means of conducting full-text searching or browsing through a collection hierarchy (Graham and Ross, 2003). Although Dublin Core is one metadata standard, other libraries might choose to implement the Encoded Archival Description (EAD) metadata system, which is common among archival organizations. Choosing metadata is a decision that must be made internal to an organization, with consideration on how other records are identified and what systems are used.

Technology Trends

With the ease of making digital files available through the World Wide Web and other means, new trends have arisen around distributing oral histories. One major issue in making oral history available online is ensuring compliance with Section 508, which requires equal access to Internet content (Rehabilitation Act, 1998). For oral history, this means that any time there is streaming audio, a text transcript should accompany the audio so that a deaf person can have equal access.

The Manuscripts, Archives and Special Collections at the Washington State University Libraries undertook an effort to make their digitized oral histories available on the World Wide Web through streaming content. According to Special Collections Librarian Trevor Bond (2004), "Listening to oral histories provides a human, intimate link to the past that is much more direct than simply reading a transcript." He oversaw the analog-to-digital conversion of the library's African-American oral history that started because the original cassette tapes were breaking and there was strong concern that the library would lose these recordings. After converting them to digital files, the librarian staff created a Streaming Multimedia Integration Language (SMIL) presentation consisting of audio clips, streaming text and photographs from the collection (Bond, 2004). Use of SMIL allows audio to play at the same time that text streams. Although a simple audio file can be posted to a Web site without SMIL or Flash, users would have to manually select the audio clip and then the transcript. SMIL makes for a more elegant presentation.

Another trend in providing access to oral histories is through podcasting. Because podcasting allows a user to download content to a portable media player, archivists must

consider copyright and intellectual property issues and be aware of the possibility for content to be manipulated. One way to avoid issues in this area is to have clear release forms that both interviewer and interviewee sign (Colorado Digitization Project, 2006).

At the Jet Propulsion Laboratory, we have begun exploring means of including audio clips on the NASA island within Second Life, a popular virtual immersive environment. These activities have been coordinated with historical anniversaries such as the fiftieth anniversary of NASA and the Explorer 1 satellite. As the anniversaries approached, the Second Life development team created displays for Explorer and other early missions. We have also created a Web site with oral history clips of two to five minutes, and have connected to these audio files from Second Life. When a visitor clicks on one of the exhibits, he or she will hear an engineer or project manager talking about their experience on the mission. As stated previously, this effort has also included by necessity a review of release forms to ensure that permission exists by the interviewee and/or interviewer to distribute the interview in this new way.

CONCLUSION

Digital technology is the wave of the present and the future. In order to ensure continued access to oral histories, a key component of understanding life and culture at a given moment in time, these collections must be preserved. In many cases this means converting analog recordings to digital, or making an organizational decision to only allow born digital interviews.

These digital advancements, in addition to increasing the likelihood of sustainability for oral history, also provide new means of engaging users in the recordings. By maintaining this connection to users, whether through traditional means such as physical libraries or through new

technological forums such as virtual immersive environments, oral history will continue to be collected and used in meaningful ways.

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