
THE SOCIETY FOR THE STUDY OF THE INDIGENOUS LANGUAGES OF THE AMERICAS

*** SSILA BULLETIN ***

An Information Service for SSILA Members

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-->> --Correspondence should be directed to the Editor-- <<--

Number 124: October 24, 2000

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124.1 CORRESPONDENCE

We all love you

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>From Wayne Leman (wleman@mcn.net) 9 Oct 2000:

Regarding the query posted by John Man in Bulletin #123, requesting translations of the sentence "I love you" in Native American languages. This phrase (or single verb, as it will be in many NA languages) is _nemehotatse_ in Cheyenne, the language I research. The Cheyenne word (slightly misspelled) and the word(s) in many other languages (including NA languages) can be found at the following Internet address, which has been active for several years:

<http://www.geocities.com/Athens/6554/love.htm>

areas of Athabaskanist inquiry. Organized sessions will focus on: Language and Pedagogy, Language and Theory, New Data, and Community-Academy Relations. A special workshop on the instrumental analysis of voice quality is planned for Sunday, May 20.

This conference brings together researchers, teachers and members of Athabaskan-speaking communities to stimulate each other toward continual improvement in linguistic research, Athabaskan language pedagogy, and language retention methods.

A formal call for papers will follow in January. However, for the highly organized: The deadline for submissions is Friday, March 2, 2001. Please send a one-page abstract via e-mail to <stuttle@ucla.edu> or by mail on paper to: Athabaskan Languages Conference 2001, c/o Siri Tuttle, UCLA Department of Linguistics, 3125 Campbell Hall, Box 951543, Los Angeles, CA 90095-1543.

124.3 A DISCUSSION THREAD ON AUDIO-VISUAL ARCHIVING

Brian Levy, an SSILA member who works on a cultural preservation project with the Caddo Tribe, posted a request for information on audio-visual archiving on ARCHLIST last week. Levy re-posted his query, together with the replies it has received, on the Endangered Languages List (ELL), and we further re-post most of the thread below for the benefit of Bulletin readers. The issues raised affect nearly all of us, in one way or another.

>From Brian Levy (xernaut@yahoo.com) 16 Oct 2000:

I would like to introduce myself. My name is Brian Levy, and I work with the Caddo Indian Tribe of Oklahoma as a Cultural Preservation Activist (for want of a better title to describe my job). Basically I am helping the tribe create a permanent archive of songs, dances, oral history in English, and, quite importantly, since the tribe is down to only about twenty fluent speakers of the language now, we are recording to DAT all manner of Caddo language, including stories, monologues, prayers, conversation, etc. We are creating a master archive of Caddo audio materials, recording older analog recordings on reel to reel and analog cassette, to CD directly, and copying all DAT tapes made since we began using DAT two years ago, also to CD. We make on blue dye copy on Mitsui media (home audio type, not CDR computer type, using a Harmon Kardon CDR2 machine, we also make one

gold dye Kodak CD home audio copy for a second copy of our archive housed at an archive in Oklahoma. A third copy is also made on the same Mitsui blue dye (silver) CD's. We may soon switch to just using computer CDR's instead of the home audio type, since Tascam makes a machine for under 100 dollars which is high quality and recommended. I consult with others doing similar work to this, and I am on this and other lists. I am trying to determine the archivability of this strategy. We have 110 CD's so far, and no stop in sight, as we have tons of analog recordings to migrate, and are constantly making new DAT recording.

We have a huge quantity of old Beta, VHS, Hi8, Super8, and now we use Sony TCR-320 Digital 8 cams for all videoing of elders and dances. We are waiting to know what is best for permanent archivability for these. I am guessing DVD-Rom burners, as opposed to DVD-Ram or such. But listening to some of your pros on these list servers, I am wondering. We do not have the budget to buy equipment costing 50k now, we are very limited on budget, though we might could get a grant to use better equipment.

I am just wondering what any of your folks also concerned with permanent archivability of precious materials, both audio and video, would have to say on our situation. I would appreciate some advice.

Some have suggested computer hard drive storage. Some have said (such as the Getty Museum in LA, and the Library of Congress, that no current digital medium can be considered archival. Only old reel to reel tapes quarter inch, are considered time safe. Since who knows, they argue, if any CD players will even be available in 500 years, whereas due to the wide use of reel to reel all during twentieth century by broadcast media etc, it will still be playable. Plus when audio tapes deteriorate on analog reel to reel they gradually degrade in quality at playback, whereas, once digital degrades too far, the machines can no longer decipher the one's and zero's and play the CD back at all.

I know this is a long posting, but I wanted to introduce myself and the work we are doing at the Caddo tribe, and hopefully get some guidance from some more technically savvy folk...

--Brian Levy
Kiwat Hasinai Foundation: Preserving Caddo Heritage
211 W. Colorado Ave., Anadarko, OK 73005 USA
(405/247-5840; xernaut@yahoo.com)

>From Claire Bower (bowern@fas.harvard.edu) 18 Oct 2000:

A couple of comments on the various media.

Firstly, I'm surprised that anyone is recommending reel-to-reel. There is a big problem with older archival materials in this format that the tape becomes brittle over time; it's probably less of a problem with tapes made now than it is with reels over 50 years old but it's still a major drawback and a reason why many institutions (such as the National Film and Sound Archive in Australia) are converting reels to other media

Anything magnetic (like conventional audio tapes) will get demagnetised over time and is not a good 'permanent' medium.

Re digital deterioration: The most common cause of CD deterioration is the CD getting scratches. Computer hard drives build up errors because of the constant read-write that's going on during processing. This doesn't happen when a CD-ROM is played because it's read-only; the only equivalent of the 'write' that happens to a hard drive is if the grooves get dirty or scratched. There's also physical deterioration of the metal, but I think after the scare of corroding CDs in Germany in the early 90s the manufacturers have fixed that problem, at least for the time being.

Another point to consider is retrieving items off the tape/cd/reel. It's easy to tag the beginning of a segment on a CD (it's just a new track) and so it's very easy to retrieve individual stories, whereas for tapes and reels it's necessary to cue the tape and have a detailed audition sheet and so on.

I'd go with DAT and minidisks, with a paper copy (acid-free paper) of transcriptions as another backup. It's easy to transfer these between other media (eg DAT to magnetic audio cassette).

If all else fails, there's charcoal ink and papyrus buried in sand in a warm and dry climate, but it makes information retrieval a bit hard...

--Claire Bower
Department of Linguistics, Harvard University
(bowern@fas.harvard.edu)

>From (Kittenkilldare@aol.com) 19 Oct 2000:

As a professional in the recording industry, I cannot urge you strongly

enough to make analog tape and film backups (this refers to motion picture film, NOT videotape!) There is no storage medium that is truly permanent. But as was said earlier, the real danger of digital is not technological obsolescence, but unexpected, spontaneous, and TOTAL file corruption. Film and reel tapes do degrade over time, but barring any physical damage, at a fairly predictable rate. Also, a LOT more is known today about archiving and preservation than when the technology was first created. Most of the first films and tape recordings ever made have been lost simply to improper storage conditions. CD's and digital video are perfect for current use, distribution, etc. But this project is far too important to risk losing it to a bad batch of discs.

--KK

(Kittenkilldare@aol.com)

>From Peter Copeland (peter.copeland@bl.uk) 18 Oct 2000:

My name is Peter Copeland, and I am the "Conservation Manager" at the British Library National Sound Archive. I'm slightly puzzled why no-one has jumped in before me; but you have of course opened a very big issue!

In principle, I support the strategy that analogue media should be converted to a digital medium with error-correction, so that as errors build up over time, it is possible to monitor the state of the degradation and invoke a "cloning" operation before the failures become catastrophic. My policy is also to digitise analogue audio *in duplicate*, using two different types of carrier and storing them at opposite ends of the country, to spread the burdens of self-destroying media and World War III. I also make my staff and contractors use media with greater "power-bandwidth product" so we do not lose anything, and to use their ears (in the case of sound, of course!) to check the digitised version sounds exactly the same as the original. This is besides objective measurements of frequency-response, speeds, noise, etc.

However, there are two "lateral" issues against which I must warn you.

One is the problem of "software." As I'm sure you know, the computer industry is bedevilled with software incompatibilities, and no matter how well the digital data is stored, if you cannot get the recording into a state which human beings can appreciate, you have failed as an archive. Unfortunately, computer software can be copyrighted, and (in Britain) it lasts 70 years after the death of the person who wrote it. Therefore you cannot copy the software to enable an archival recovery

programme to be monitored (let alone used). For this reason, we currently honour patent law (which covers *hard*ware) and lasts only eighteen years, and use formats covered by patents rather than software.

My employer, the British Library, is currently planning to circumvent this difficulty by storing the digitised artefacts indefinitely. This involves a really massive digital store. The plan is to store all our books, photographs, manuscripts, etc. in the digital domain, using an IBM computer system with enough intelligence capable of monitoring itself, doing its own cloning as required, and storing the results in two separate locations. I don't think this is feasible for an archive such as yours. Either prices will have to come down or cooperative agreements will have to be invoked to make everything work. Then, a century from now (when software copyright has expired), one can get a representation back without breaking the law. The other issue is getting analogue originals digitised in a way which conserves all their properties. For audio this is comparatively simple, we are only digitising a representation of two analogue sound-pressures. (Anyone who thinks I'm oversimplifying, please shut up for the moment). But for moving pictures, the problem is much more complex. Different individuals have different tolerances to different defects. I had to leave the television industry because my eyes were predicted to fail, so I know I'm not normal; but I can see many defects on DVD, for example, which other people evidently cannot. So the digitisation of moving pictures is currently at a very primitive state compared with audio.

On basic "information theory" arguments, I consider the format known as DVC (with its extensions DVC-Pro or DVC-50, and DVC-HD or DVC-100, all of which use the same chipsets - hardware) offers a route to the future. It is not specific to a particular frame-rate (like film or video), and the (by now) conventional metal-particle tape has been proven to last a decade at least (unlike metal-evaporated, used by Super8). However, I do not think there is yet enough hardware in the world for this format to be easily readable in decades from now. But it is the nearest thing to an archival format for video which has yet appeared.

Returning to audio: I am playing "devil's advocate" now. I respect the strategy of the Library of Congress that analogue is more likely to be playable in future. The trouble is that the power-bandwidth product of analogue media always degrades with time, and this affects engineering test tapes just as much as tapes of audio subject-matter. So you can never know where you are as the sound degrades (at least, if you don't have access to new and properly-made test tapes)! It is at least sensible to consider digital alternatives, even if they may affect the analogue sound (or image), on the principle "don't put all your eggs

into one basket". For audio, we use CD-Rs ourselves. Besides anything else, I support the idea that the more CD players there are in the World Out There, the more likely it is that we shall be able to play CDs in future years. (There are now more than a billion, which is unprecedented).

You can see I am a very conservative philosopher, so I will end with a very practical suggestion. Whilst I approve of Philips Red-Book Standard CD-R media for storing most analogue audio (only high-end audio and long running-times defeat it), I must urge you not to use "silver" CD-Rs. Assuming you mean CD-Rs with the *metal* silver, these have been tested to give longevity in a laboratory "standard atmosphere." But this ignores the fact there is sulphur in the atmosphere of most areas of the world, which can leach into the disc and form silver sulphate, so the disc goes brown. The very earliest CDs made by Philips Dupont Optical here in Britain suffered this fault, and we've been living with it ever since. (I must, in all fairness, say that Philips have replaced all their affected CDs honourably). But we conservative nutters do not use CD-Rs which are silver *in colour*, to be certain! We only use ones with a gold (metal, not colour) reflective layer.

--Peter Copeland
(peter.copeland@bl.uk)

>From Joseph J. Wrobel, 19 Oct 2000:

I consider myself technically savvy (I've been involved in the technology of optical recording since the mid-seventies), but I am not an archivist, nor am I an audio expert. I have heard many opinions expressed by archivists and have formed an opinion of my own. Here it is.

By all means, store your data digitally. No matter what format or media you choose for storage today, at some time in the future someone will be required to migrate your content to some next generation system. Having the data in digital format will make this future migration so much easier and cost effective.

Your choice of CD-R as the storage medium makes a lot of sense. The format is stable. It is defined by international standard. There is an installed (and growing) base of over 400 million data drives (and 600 million audio drives) that will keep the format alive for many years to come. DVD-ROM drives, which now represent about 9% of the installed base of CD/DVD ROM drives, are all backward compatible with CD-ROM and CD-R. Market forces will demand that this backward compatibility be maintained. (After all,

over 3 billion CD-R discs will be sold in 2000, and over 4.5 billion are expected to be sold in 2001.) The drives and media are inexpensive and available from multiple sources. The low media cost (and increasingly higher recording data rate) allows the redundant recording that you have wisely implemented.

Audio experts may have varying opinions about whether the CD audio format (44.1 kHz sampling, 16 bits/channel) is of sufficient quality for your needs. I frankly don't know. But regardless of your choice of audio digitization format, using CD-R for your "bit bucket" is the way to go. But that's just my opinion.

--Joe Wrobel
Eastman Kodak Company

>From Peter Copeland (peter.copeland@bl.uk) 20 Oct 2000:

All digital media have some form of error-correction, it is built into the "standard." It is one stage up from "error detection", in which you know a fault has occurred, but you cannot correct it. (The ISBN Book Numbering system, for example, has error detection which will sound an alarm if one digit is changed or two transposed, so you know you've typed something incorrectly; but you don't know **what** has gone wrong). MS-DOS, Compact Disc, R-DAT, etc. have error-**correction** built into them to match the kind of errors one might reasonably encounter (large ones at nearly the same place for CD, much shorter ones affecting consecutive tracks for R-DAT, etc.) Error **correction** is built into the medium and automatically invoked whenever you reproduce something.

But to know **how** something is degrading, one needs to get at the digits **before** error correction. Our CD Tester does this. Audio CDs have two "layers" or error correction (CD-ROMs have three), and our tester lists **all** the errors, where they are, and whether they cross the threshold into audibility. By repeatedly putting the CD into the tester every year (or whatever), and printing-out the results, one can get a picture of how fast it is degrading, and clone the data when it is approaching audibility.

Because we haven't much money, ours is a cheap CD Tester, a Model CDA2000 CD Analyser made by CD Associates, Inc., 15A Marconi, Irvine, California 92618. email: <www.cdassociates.com>. We clone our R-DATs onto CD-R as soon as we get them home to minimise the risks; I expect R-DAT (and PCM-701) tape testers exist, but we don't use them.

language ideology, cultural and language change, discourse analysis, and sociolinguistic methodologies; field work experience in China (PRC, Taiwan, or Hong Kong), and be proficient in Chinese. The successful candidate will be required to teach four courses per academic year, including contemporary China and an intro. linguistic anthropology course. Starting date: Either August 18, 2001 or January 1, 2002. Send application letter, vitae, and three letters of recommendation to: Linguistic Anthropology Search Committee Chair, University of Kansas, Dept. of Anthropology, 1415 Jayhawk Blvd., 622 Fraser Hall, Lawrence, KS, 66045-7556. Initial review of applications will begin on January 19, 2001, and continue until position is filled. EO/AA Employer.

124.5 E-MAIL ADDRESS UPDATES

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