Recording Interviews: Guidelines and Resources

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Recording Interviews as Literature and Data

As a listener, reader, social researcher, and citizen I'm a great fan of good audio recordings, interviews and field recordings in particular. There's something about listening to what people have to say, recorded cleanly and fairly in their own voices, that I find stimulating, entertaining and enlightening. I don't think of audio interviews as short stories, poems or novels, but as documents that are akin to literature and, as such, worthy objects of cultural appreciation and critique. Audio recordings can also provide valuable data for social and cultural analysis, either on their own or when converted to a written transcript, which itself can be annotated, indexed and coded. That makes them well worth attending to as a medium and method of social research.

As both documentary literature and data, audio recordings provide a distinctive way of depicting the interplay of voice, meaning and situation. Audio recordings allow us to feel that we're listening to another person, for example, not just "encountering a text." And in some sense we are, just not at the same time and place in which that person spoke. Audio recordings enable us to discern deliberation, word choices and self-consciousness (or the lack thereof) in how someone speaks. These are reminders that talk is dynamic, flowing and performed, that one word does not follow another until someone uses her or his voice to make that happen. Audio recordings can also offer a leg up on understanding what people mean by what they say. That's important to social researchers who want to understand what people think and do, not just the words they use, and it's also important when we want to document forms of narrative and story telling that both illustrate and rely on subtleties of the spoken word.

Realizing the special virtues of audio recordings for both literary-documentary and social scientific purposes depends in part on the technical quality of the recording itself. When recording quality is so poor that there's no audible difference between one voice and another, for example, we can lose the sense the words are coming from someone in particular. When a conversation is submerged by unwelcome ambient sounds, phrases become unintelligible and we can lose track of ideas and meaning. When an otherwise clear recording is fractured by bursts of static, or precipitous volume swings, we're distracted from the flow and cadence of what a person says.

Problematics such as these frame three key challenges in making "good audio recordings": First is the challenge of **fidelity**, or the level of acoustic detail and accuracy provided by the audio recording and how well this corresponds to the original sound source. Second is the challenge of **integrity**, ensuring that no additional or unwanted sounds are introduced by the recording equipment itself. A third challenge is **selectivity,** or the degree to which recorded sounds are inclusive of what we are interested in and exclusive of everything else.

Thoughtful efforts to address these challenges depend on an appropriate alignment of ideas and purposes with techniques and equipment. If the purpose is to create a set of personal voice memos or a written transcript, for example, trying to achieve broadcast quality standards of fidelity will be wasted effort. On the other hand, for the scientific analysis of audio signals and spectra–a routine practice among ornithologists–even broadcasting equipment can fall short of what's required.

As these last comments suggest, there's no such thing as a perfect audio recording, and there are different ideas about what's good enough. These ideas reflect personal preferences for different kinds of equipment or effects, but they also reflect the fact that people make audio recordings for quite different reasons. Rarely are these reasons teased apart in audio recording accounts and guides in precisely the way someone would like to inform their next project (or understand shortcomings of their last). As described below, however, some general principles do apply in matching purposes to equipment, equipment to method, and method to methodology.

Purposes and Equipment

Among the varied purposes of documentary or social scientific fieldwork, three audio recording purposes stand out:

Note taking: Recording notes and memos in your own voice that you might want to listen to privately or transcribe.

Recording to support audio transcription to text: Recording interviews, conversations and meetings to listen to later, log or transcribe, annotate or code. This can be done with equipment and methods that generate (a) low fidelity recordings, in which timber and dynamics of individual voices are compressed to the mean, making it difficult to distinguish voices of different people, but still possible to transcribe. It can also be done with higher fidelity equipment and methods that preserve timber and dynamics in great detail, providing a quasi-life-like sound, improving data detail and enhancing the listening experience.

Recording for audio reproduction: Recording interviews, conversations and ambient sounds to listen to, transcribe, broadcast or publish as stand alone audio documents and programming.

The recording challenges noted above apply to all of three purposes, but what it takes to address them varies from one to the next. As a starting point for examining these challenges and strategies further, Table 1 lists some analog and digital audio recording equipment that is suitable for each purpose. In general, specifications follow the principle of recommending equipment that is no more expensive or complicated than necessary. As a result, the cost and complexity of recording equipment increases from top to bottom, in response to higher standards of technical audio quality. Costs and complexity also increase from left to right within the analog and digital bands in recognition of equipment that is "possible" on the left and "good" on the right.

The data in Table I suggest equipment in each row and column that is capable of meeting the challenges of fidelity–or audio recording detail and accuracy–for different the three purposes noted above. In addressing challenges of selectivity and integrity, however, recording set ups and techniques are more important than equipment per se.

Recording Kits, Audio Source Materials and Recording Purposes

	Creating Analog Tape Recordings		Creating Digital Audio Files	
Purposes	Possible / OK	Good / Great	Possible / OK	Good / Great
Record your own voice memos and notes–to listen to privately or transcribe	Micro cassette recorder with built-in microphone ($30-60)	Micro cassette recorder with built-in microphone ($30-60)	Entry level digital voice recorders, iPod w/ iTalk or MP3 player/recorder with built in microphone ($40-300)	Entry level digital voice recorders, iPod w/ iTalk or MP3 player/recorder with built in microphone ($40-300)
Record interviews, conversations and meetings–to listen to or transcribe	Micro cassette or full size cassette recorder with built-in microphone ($30-60)	Micro cassette or full size cassette recorder ($35-75) with external microphone ($25-90)	Entry level digital voice recorders, iPod w/ iTalk or MP3 player/recorder with built in microphone ($40-300)	Higher quality digital voice Recorders (e.g. Olympus 330, 660, or DM10, DM20, DS2 =$80-200) or Minidisk recorder ($150) –all with external microphone ($25-90)*
Record interviews and conversations that preserve the quality of individual voices, ambient sound and music–to listen to, transcribe or share informally with others	Medium quality full size cassette recorder ($50-90) with external microphone ($25-90)	Good quality full size cassette recorder ($75-300) with good quality external microphone ($75-300)	Higher quality digital voice Recorders (e.g. Olympus 330, 660, or DM10, DM20, DS2 =$80-200) or Minidisk recorder ($150)-all with external microphone ($25-90)*	Hi-Fi voice recorders (e.g. Olympus DM10, DM20, DS2 = $120-200), Mini-Disk recorder (HD or non-HD=$150-300), or digital video camera ($350-600)—all with good external microphone ($75-200)*
Record interviews and conversations that preserve the life-like quality of individual voices, ambient sound and music–to listen to, transcribe, broadcast or publish	Good quality full size cassette recorder ($75-300) with good quality external microphone ($75-300)	Pro quality full size cassette recorder (Marantz, Sony = $300-600) with good quality microphone ($75-300)	Hi-Fi voice recorders (e.g. Olympus DM10, DM20, DS2 = $120-200), Mini-Disk recorder (HD or non-HD=$150-300), or digital video camera ($350-600)—all with good external microphone ($75-200)*	HD Mini Disk recorder ($200-400), DAT recorder ($500-800), CDR recorder ($800-1200), hard disk (computer) or flash memory recorder ($400-1200)—all with good quality external microphone ($75-300)*

*PLEASE NOTE: Brands and models are noted only to identify a category or class of equipment, not to recommend one brand over another. However, as of July 2005, the only office function digital voice recorders I found that also supported quasi hi-fi field recording were the Olympus DM10, DM20 (44.1 khz sampling // 300-8,000hz frequency response) and the DS-2 (44.1 khz sampling // 128 bps // 100-17,000hz frequency response).

ALSO: Digital audio recordings from pre-HD model minidisc recorders can be transferred to a computer only by through a digital-analog interface.

Choosing between Analog and Digital Recorders

Audio tape recorders have been used by journalists, folklorists, documentarians and social researchers for several decades, and for some people, that's all they need to know. Over the last 10 years or so, however, new options have become available for making digital audio recordings in field settings. These options involve a wide array of recording media, including, minidiscs (MD), digital audiotape (DAT), digital videotape (DVR), CD's, computer hard drives, and flash memory cards.

Either analog tape recording or one of the digital audio formats will work fine for many purposes, but for editing, coding, indexing and annotating audio recordings, digital files have some special advantages:

-In most cases, you can copy digital audio files easily to your computer (and from there to a CDR or other digital audio media) with no loss of quality–and do so across platforms and programs

-Once on your computer, you can use a software programs to catalog, duplicate, adjust, edit, code, annotate, listen to and transcribe your audio recording

-You can organize and index files so that it is easy to go back and listen to the source recording at any point in your data analysis, or even to find and incorporate audio recordings in a research presentation.

-You can listen to your audio data files in your car-IF your car is new enough to have a CD player.

In choosing between digital and analog formats, these advantages can be offset somewhat, by the following considerations:

-Some people (many people, actually) are already very familiar with audiotape recorders and transcription machines and have neither the time nor inclination to learn and experiment with new and different formats.

-Audio tape recorders create material, audio recordings that can actually "see," a great resource to some people in organizing and keeping track of their work (thought this is also true for digital audio and minidisk recordings).

-Audio tape recording technologies and materials have a longer track record than their digital counterparts; that's no guarantee that analog tape materials are more durable or stable, but their frailties and vulnerabilities are somewhat better known.

-You can listen to your audio data files in your car-IF your car is old enough to have a cassette tape deck.

If you're having a hard time choosing one format over the other because of one or more of these concerns, don't agonize, even for a moment because . . .

If you like having physical objects you can see as back-ups to your digital files, you can always start with a digital file and back-up to a CDR or an audiotape.

If you like using a traditional tape recorder in the field, but also want to take advantage of digital editing and data analysis, you can always start with a cassette or micro cassette tape recording, then convert the audio to a digital file.

Converting digital files to analog audio tape

To convert digital audio to analog audio is very straightforward: You play the digital audio on whatever device you have at hand–i.e., your digital recorder, a computer, CD player, etc.–and you record the audio signal this generates on an analog recorder (e.g., a cassette tape recorder). The reason it's easy to go in this direction is that the only audio we can actually hear is analog audio; that's how our ears work. When we listen to a digital audio recording, we're actually listening to an analog translation of a digital audio file. Digital recorders and playback machines have some mechanism for making that translation before the audio information gets to our ears, something that turns digitized information into an audio signal.

Converting analog tape recordings to digital audio files

Translating in the other direction is a bit more complicated, but not a lot (and less and less so as well). If you start with an analog recording from an audiocassette or micro cassette recorder, you can convert that into a digital file in several different ways. All involve translating the analog audio signal into a digital audio file. The simplest way to think about this is as the inverse of going from digital to analog. In that case you "play" the digital and record with an analog/tape device. To go in the other direction, you "play" the analog tape and record with a digital audio device.

There are two primary set ups for making this kind of analog to digital translation:

Using a digital audio recording device: You can connect your analog/tape recorder to a digital audio recorder, play the tape and record onto the digital recording device. You make this connection by using a patch cable from the "headphone" jack of your tape recorder to the "microphone" or "audio in" jack of your digital audio recorder. By playing and re-recording your original tape, you'll convert it into a digital audio file (and you'll still have the tape, as a back up, if you need it). You can then transfer the digital file from the digital audio recorder to a computer or another digital audio device.

Using your computer: You can connect a patch cable from the "headphone" jack of your cassette recorder to the "audio in" jack of your computer, then "play" the tape and have your computer record it with an audio recording software program. In this set up, you are using your computer as a digital audio recorder. The analog signal that normally goes to your headphones will go to the computer where audio recording software can record it as a digital file. This is a pretty straightforward process, but does vary a bit from computer to computer.

To figure out how to convert from an analog audiotape to a digital file on your computer, you'll need to answer the following three questions:

Does your computer have an "audio-in" jack? Most PC's come with an "audio in" jack, but most late model Macs do not. If you have a Mac, you'll need to use a little converter that links the patch cable from your tape recorder to one of the Mac's USB ports (USB is how the Mac gets "audio in"). Both Edirol and Griffin make devices of this sort. I've had very good luck with the Griffin iMic ($35).

Does your computer come with audio recording software? Both Mac and Windows computers now come with software that you can use to make audio recordings on the computer itself. If you have a model that does not include this kind of software, there are several free-ware and share-ware programs you can download that will work just fine. You can use several of these programs for transcribing as well as recording. Among these are:

*What file formats does your audio recording software support, and which of these will best suit your purpose**?*** Audio files come in several different formats. Some of these formats "compress" the audio to create smaller file sizes (e.g. MP3's, ATRAC 3, 4, QuickTime, WMA, etc.), others do not. Among formats that compress the audio, some allow you to set different levels of file compression. The more the file is compressed, the smaller your files, and the less space they'll take up. Whenever you compress files, however, you lose data, some of which you won't notice and some of which you might. To avoid any loss of quality at all, you can record or save in an "uncompressed" file format, such as AIFF or WAV.

Most entry-level digital audio recorders use highly compressed audio formats and low fidelity settings to minimize the size of audio files. This allows you to record hours and hours of audio. Some of these formats are proprietary (i.e., they can be managed only on equipment and software offered by the same manufacturer), but most can be converted to audio formats that you can then use with other devices and programs. Most high-level digital audio recorders allow you to record in uncompressed formats at high fidelity settings. These formats and settings dramatically increase the size of audio files and reduce recording time but generate very high quality recordings.

If you are working towards broadcast quality recordings, you will want to maintain as much audio quality in your files as possible and select an uncompressed format

and hi-fidelity settings. However, if you are working primarily towards a written transcript, it will be a lot easier to work with compressed files that you record or save as an MP3, WMA or QuickTime file. Whether high or low fidelity settings will best suit your purposes depends in part on the kind of transcription (and transcribing experience) you are aiming for.

Analog Tape Recorders (Cassette and Micro cassette)

Those of you who are using analog tape recorders might find some of the following comments useful. on a few features of these devices, as follows:

Cassette and Micro Cassette Recorders: Palm-size portable cassette recorders work just fine. You can also use micro-cassette recorders or other dictation devices. However, our transcribing machines are designed for standard sized or micro audiocassettes. If you use another format to record your interview, you'll need to make a copy from the other format to the transcriber cassette size prior to using the transcription machine.

If you are buying a tape recorder for conducting interviews or recording dictation get one designed for that purpose. You don't need a stereo microphone or playback, Mega-Bass, all-weather protection, digital ready recording, etc. And you don't need a full-size boom box. Sony, Panasonic and other companies make some decent small recorders for $30-50. Sony has a series called the "Pressman" that includes several models, ranging from $35-$100. Unfortunately -- or fortunately -- the $100 models will not necessarily last longer than the $35 models.

Good Features: Look for a tape recorder than has an input jack for an external microphone, an output jack for headphones or an external speaker, and an "auto shut-off." None of these features is essential. However, if you want the option of using an external microphone, you'll need a tape recorder that has an external microphone jack. The headphone jack–almost every cassette recorder has one of these–is useful to check your system out, listen privately AND for making copies of your tape (i.e. you can use the headphone jack as an "output" and connect your tape recorder to another tape recorder's "input jack," etc.). This is VERY useful if you want to use a micro-cassette recorder for your recording and then copy from that to a standard-sized cassette using another recorder, or if you want to make a copy of your tape to a digital audio format. The auto-shut off is VERY useful in letting you know when the tape has run out and you need to flip it over.

A Very Bad Feature: Don't pay more for "voice activation" and don't use this feature if it is available on the recorder you are using. This is a setting that will turn the tape recorder on AFTER someone begins talking. If you want transcribe an interview in which the recorder missed the first half of every sentence, go for it. However, assuming that you want to the whole sentence, and not just the second half, keep VOICE ACTIVATION TURNED OFF.

Kinds of Tape: Use any decent quality audio recording tape. I have had very good luck with TDK, Maxell and Sony audiotape designed for "normal" bias. This is not hi-fi recording tape, or digital ready recording tape, etc. Just plain, good quality tape. I usually use 60-minute tapes, not 90-minute tapes. 60 min tapes have a slightly thicker base and are packed less tightly on the reel. As a result, they may be less likely to jam or to "bleed" through after they are recorded on. Remember that a 60-minute tape will stop at 30 minutes and need to be turned over. A tape recorder that has "auto shut off" is useful because it will "click" off when the first side of the tape is done, alerting you to flip it over so you can record on the other side.

More information about recording interviews with analog audio tape recorders can be found at: http://www.library.ucla.edu/libraries/special/ohp/ohpmag.htm

Digital Audio Recorders (Hard Drives, Flash Memory, Minidisc, etc.)

I recommend using digital audio recording whenever feasible or converting analog recordings (e.g. tape recordings, audio or video) to digital audio recordings so that they can be imported into a computer. Having digital audio files saved to a computer hard drive provides options for editing, organizing, transcribing, and analyzing data that are simply not possible with analog recordings. However, sorting through the range of digital audio recording formats currently available can be overwhelming.

There's definitely lots to learn about digital recording equipment As a result, trying to select the "ideal" digital audio recording format or equipment can

For a more complete description of digital check the following web sites:

Vermont Folk Life Center:
http://www.vermontfolklifecenter.org/res_audioequip.htm

MATRIX: Michigan State University:
http://www.historicalvoices.org/oralhistory/audio-tech.html

University of Wisconsin:
http://streaming.wisconsin.edu/creation/st_audio/recording_audio.html

Transom "Tools": http://www.transom.org/

Video Cameras as Audio Recorders

If it makes sense to you and the person you are interviewing, you can use a video recorder as a substitute for an audio recorder. The microphone and audio track on

the video recorder will usually be quite good for purposes of an interview. You can even leave the lens cap on if you want and just use the audio, and not distract yourself or the other person, but make sure the camera's microphone is aimed towards the speaker or towards both of you. If you set the camera off to one side, and aim it at both you and the person you are interviewing, it should do fine. If you place it in front of you and aim it at the person you are interviewing, it might record what your interviewee says quite clearly but miss some of what you say.

Equipment Failures and Enhancements

Checking and testing equipment: Check your equipment out fully before you use it in a live interview. Don't be afraid to appear foolish to other members of your household. Turn the recorder on and talk to it from the position you expect to be in during an interview. Walk around to different positions, talking at different voice levels to see how well it picks up your voice. Listen to the recording to see what you got and refine your placement/set-up accordingly. This is the single most important thing you can do to get a decent recording.

Batteries and power cords: Use fresh batteries or an AC power adapter -- don't trust batteries that have already been used for some other purpose to carry you through the interview.

External Microphones: An external microphone can improve substantially the quality of your recording, but don't rush to get one. If you do use an external microphone, be sure to check your set up completely to make sure that it is working the way you want it to. Almost any external microphone can give you some improvement over the microphones built into the tape recorder. But external microphones very tremendously in what they are good for -- some are fine for meetings but not so hot for close up interviews; some are designed to be pinned to someone's lapel; others are designed for vocal performers; still others are designed to isolate sound coming from pretty far away, etc. Always try out a microphone before using it in a live interview. And, if you are thinking of buying a microphone, make sure that you get one that fits your purpose. If at all possible, try it out before buying -- I can also make some recommendations if you are interested.

Equipment and Methods

The equipment you use determines the maximum possible fidelity of a recording. How you use the equipment determines how far below that maximum a particular recording will fall, not only in terms of fidelity, but also in terms of integrity and selectivity. To guide your methods, consider the following observations about what these terms mean for your specific recording application.

Integrity:

Audio recording equipment can introduce a variety of sounds that degrade the usefulness of whatever recordings it makes. These sounds can come from mechanical noises made by the recording device (e.g. the sound of a tape recorder or minidisk motor), faulty external electrical connections (e.g. static from a bad microphone-recorder plug), faulty internal electrical connection (e.g. static from a deteriorated solder or chip connection inside the device itself), or problematic connections between the recording device and whatever holds it in place (e.g., someone's hand, a table top, a sweater or lapel to which a lavaliere mic has been attached, etc.).

Remedies for a lack of integrity are relatively straightforward, but that's not always the case for diagnosing the source of the problem—particularly if it involves electrical connections that may be inside or outside the recording device. For just those problems, the most effective form of trouble-shooting is some form of A-B experimentation. If the problem seems to be a cable, try a different cable (i.e. switch cable 'A' for cable 'B' and try again). If it seems to be a connection between a jack and plug, try a different plug. If that doesn't work, try a different jack. Noises on a audio recording that are generated internally by the recording device itself usually require attention by a professional technician, but external connections are more likely to misfire than internal because external cables, plugs and jacks are the ones that get moved around all the time.

The byword for protecting against mechanical threats to the integrity of audio recording is "isolation". The ideal is to completely isolate a microphone, for example, from the sounds made by a tape recorder or minidisc recorder. This can be done easily enough by using an "external microphone" connected with a cable and keeping it aimed away from the recorder. This works best, however, when the microphone is also isolated from sounds made by your hand. You can reduce those by not moving any parts of your hand that are in contact with the microphone (e.g. fingers are still, but wrist and elbows can move) and/or by using an insulating, shock-absorbing coating on the microphone itself. The same principles apply to insulating microphones placed on stands, tables or other supports from shocks and sounds that can be carried through the same support.

Using an external microphone and giving it a soft, quiet and stable support will minimize the possibility of recording equipment adding unwanted noises to a recording, regardless of the kind of device being used. Maintaining all plugs, jacks and cables in good working order will minimize the prospects of getting unwanted noised from external connectors. Taking good care of recording devices will reduce the odds that internal connections will deteriorate or fail, but when they do it's time for the repair shop or a new recorder.

Having said all this, it's worth noting that even when they work well, some recording devices will be more likely than others to color, or compromise the quality integrity of the audio recording. In the most demanding applications, for example, audio engineers would steer away completely from the kind of recording equipment

that is useful for recording in the field. We could illustrate this by adding yet another row on the bottom of Table 1 for top-line studio recording equipment. Taking that equipment into the field would definitely make for a "better" recording in some technical dimensions, but it would also be a nightmare for field workers and the people whose voices they want to record.

Selectivity:

The idea of getting a good audio recording is to do a bang-up job of recording each sound we are interested in and excluding all those we don't want to hear. This kind of selectivity has both a technical and substantive dimension.

Technically, microphones and microphone configurations can be selected to record a wider or narrower angle of sound–in much the same way that wide angle and telephoto lenses take in a wider or narrow angle of view. The most wide-angle audio recording arrangements involve "omni directional" microphones that pick up sound from all directions. More narrowly focused recordings can be made with microphones that have a "directional" pick up pattern. Many directional microphones record whatever sounds fall within a heart-shaped or "cardiod" field. Others (sometimes called "shotgun microphones") have an even more "uni-directional" pattern.

Selectivity can also be improved or degraded, technically, by where the microphone is placed relatively to the sound source. Getting the microphone close to a person talking will give a much more selective recording of their voice–i.e. a recording in which the voice is clearly in the foreground and all other sounds in the background. However, placing a microphone too close can degrade the fidelity of the recording by exaggerating sibilance (which travels less well than lower register sounds, and so seems more pronounced when ears or microphones are extremely close to a person speaking) or in capturing and exaggerating "pops" of air that come with hard-starting consonants ("p's", for example).

These technical aspects of getting a recording set up to "select" for the sounds we are most interested in extend as well to the environment in which a recording is made. However, at that point questions arise about how important it is to have acoustic aspects of that setting included on the audio recording itself. One ideal for an interview is to exclude all sounds other than the voice of the person being interviewed. That works fine for preparing a transcript of the person speaking, or even a "talking head" kind of audio recording that could be broadcast or presented to others. But if the goal is to situate the person in the context in which he or she is speaking, then ambient sound becomes data instead of noise. In just this respect, choices about microphones and microphone placement reflect implicit theories about what we think is important about a situation, even if we define that situation as an interview, or more narrowly, as one person talking.

Selective recording in field settings is shaped technically by the volume of what we want to record relative to all other sounds a microphone might pick up. With just that in mind, it's much easier to get the microphone to select for someone's voice in a relatively quiet room than in a noisy one. Because we already listen so selectively–ignoring continuous sounds that we aren't interested in and turning our attention quickly to momentary sounds that mean something to us–our own ears are not the best judge of what's quiet and what's noisy. A better bet is to make a test recording of a setting, listen to what the recording includes or excludes, and adjust the recording set up and methods accordingly.

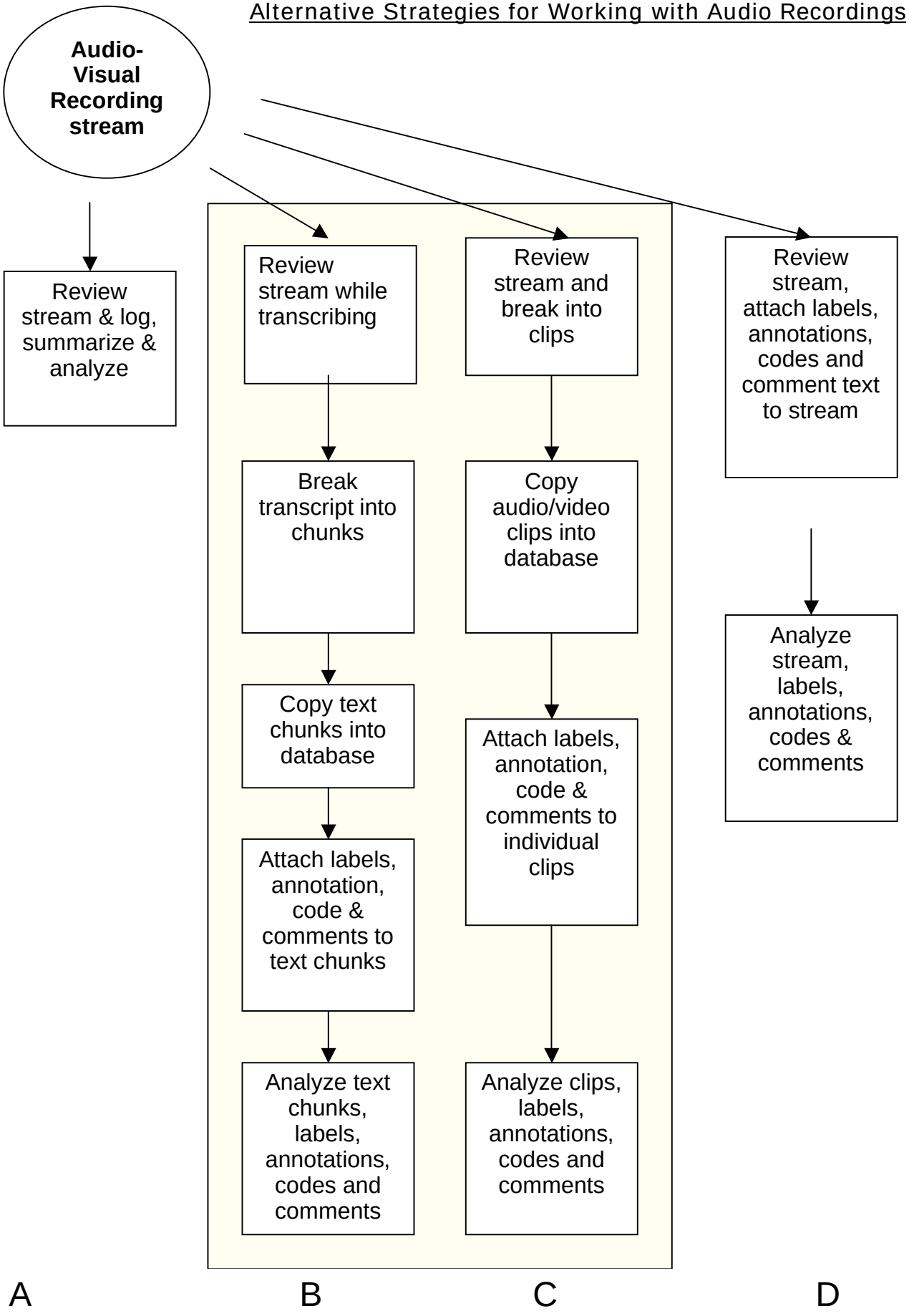
The same concerns regarding contact between the recording device and other materials apply here as well. A hard surface will transfer ambient sounds to a recorder or microphone that is set upon it. To keep that kind of sound from being recorded, put something soft between the microphone or recorder and the hard surface–e.g., a cloth, paper back book, short stack of $50 bills, etc.

Methods and Methodology

The methods outlined above for achieving the kind of fidelity, integrity and selective required for different recording purposes may seem relatively mundane, technical or matter of fact. Choices among these methods, however–and refinements within them–also reflect theoretical priorities and concerns that may be more or less important. That's also true for choices about how a recorded interview will be processed, converted, examined, analyzed or reproduced.

Traditionally, the first step in the post-recording workflow was to make a written transcript of the interview that could then be edited or analyzed. That's still a very common practice, but recent software and hardware developments make possible some intriguing alternatives. Choices between these alternative "methods" involves matters of personal preference and technical skill, but they also reflect and support different kinds of theorizing about the substance of culture and social life in general and the "content" of interviews in particular.

Alternative Strategies for Working with Audio Recordings



Some of these choices are displayed in the figure above as four different strategies for working with an audio recording of an interview. Each strategy appears as a vertical column (labeled at the bottom as A, B, C and D) that starts with the same audio recording "stream." In column 'A,' the strategy involves listening to the recording and making more or less detailed notes with a standard word processing program. The product of this method could be a log of the interview (in which a few details or themes are indexed to sequence or duration), a narrative or thematic summary of the interview, or a verbatim transcript (that might also include some features of a log or summary). When the process is complete, the researcher has in hand a text that can stand in for the audio recording in any subsequent rounds of analysis or reporting.

The second and third columns ('B' and 'C') suggest two different ways of building computer data base functions into the analysis of the same audio recording. In the Column 'B,' a written transcript is prepared, much as it might be in column 'A', but the transcript is then broken into chunks that are imported as individual records in a data base program. Each chunk of text, or record, can be coded and annotated, retrieved, and re-assembled according to different themes. This "code and retrieve" approach enables a researcher to bring together related comments from the same or different interviews for further analysis. It entails the same kind of conversion from audio to text that takes place in strategy 'A', but the "text" product itself is enriched to include not only a sequential summary or transcript, but a database of text "chunks" drawn from it.

In strategy 'C' the same data base features appear that were part of strategy 'B,' but with an interesting twist. Rather than first converting the audio recording into a text, and then breaking up the text into meaningful chunks, the audio recording itself is broken into chunks, with each chunk then identified with particular themes, questions or issues. Once again each chunk appears as an individual data base record, but the records themselves include a section of the audio recording. In contrast to 'B,' strategy 'C' allows analysis of the interview to be based on the audio recording itself (not a text translation of the interview) and leaves open the option of selective transcription after analysis is concluded. That said, both 'B' and 'C' split the continuous coherent "stream" of the audio recording (or its text transcription) into discrete chunks, which may or may not make sense for a particular line of inquiry.

In the far right column I have suggested a fourth approach that combines features of the preceding three. Strategy 'D' starts with the same audio recording as 'A,' 'B' and 'C,' but preserves that recording intact through subsequent rounds of analysis or transcription. In contrast to the other three approaches, text transcriptions, codes and annotations are attached directly to the audio recording as another "layer" of a digital file. This transforms the audio stream into an audio-text database; text is segmented and indexed to different sections of the audio recording without fragmenting the recording. Working with strategy 'D,' a researcher could listen to the entire recording, locate audio segments by searching for code words or summaries assigned to them– within or across interviews. This strategy thus preserves all the information of the source audio recording throughout the process of analysis.

These four different approaches present somewhat different technical challenges, but they also support different kinds of interview-based studies and different kinds of theorizing about culture and social life. To understand the implications of these contrasts it's useful to consider four related distinctions: data "chunks" and "streams;" analytical "annotation" and "coding;" "audio" and "text" representations;" and the boundaries between "informants," "colleagues," and "audiences."

Shopping For Audio Equipment And Reviews

On-Line retailers: digital audio recorders
http://www.bswusa.com/main.asp
http://www.medword.com/MedwordStore/TPC/Recorders.html
http://minidisco.org.html

iPod services, add-ons, use, etc.
http://ipodder.org/
http://podcastalley.com/
Duke Univ. guidelines for students w/ ipods
http://www.duke.edu/ipod/help/index.html - record

Olympus DS-2 and ws-200s Reviews and dealers
http://www.oreillynet.com/pub/wlg/7392
http://digitalmedia.oreilly.com/2005/05/18/ds2.html
http://shopper.howstuffworks.com/products/Olympus+DS_2+Handheld+Digital+Voice+Recorder/SF-1/PID-24126467

Audio Field Recording Web Links

How to do field work:
http://www.loc.gov/folklife/fieldwork/
http://lcweb.loc.gov/folklife/other.html
http://lcweb.loc.gov/folklife/ethno.html

Field recording auido equipment & techniques:
http://www.vermontfolklifecenter.org/res_audioequip.htm
http://www.historicalvoices.org/oralhistory/audio-tech.html
http://www.transom.org/

http://www.soc.surrey.ac.uk/sru/SRU38.html
http://emusician.com/daw/emusic_going_wild/
http://emusician.com/mics/emusic_tell_truth/
http://www.radiocollege.org/readingroom/articles/gear/fieldrec.php
http://streaming.wisconsin.edu/creation/st_audio.html

Audio recording with mini disk
http://www.bbctraining.com/onlineCourse.asp?tID=5514&cat=2772
http://www.minidiscussion.com/

Audio recording with magnetic tape
http://www.library.ucla.edu/libraries/special/ohp/ohpmag.htm

Digital audio editing software:
http://audacity.sourceforge.net/

Streaming audio on the web
http://smw.internet.com/audio/tutor/
http://www.manifest-tech.com/media_web/index.html

Home recording forum
http://www.homerecordingconnection.com/forum.php?action=view_thread&id=6746&frm=1

Birders recording audio
http://www.birds.cornell.edu/MacaulayLibrary/contribute/equipmentOverview.html

Galleries/ Online Exhibits and archives with Audio artifacts
http://stories1st.org/
http://www.transom.org/