

ETHNOGRAPHER'S TOOLKIT

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The Ethnographer's Toolkit is designed with you, the novice fieldworker, in mind. In a series of seven brief books, the editors and authors of the Toolkit take you through the multiple, complex steps of doing ethnographic research in simple, reader-friendly language. Case studies, checklists, key points to remember, and additional resources to consult are all included to help the reader fully understand the ethnographic process. Eschewing a step-by-step formula approach, the authors are able to explain the complicated tasks and relationships that occur in the field in clear, helpful ways. Research designs, data collection techniques, analytical strategies, research collaborations, and an array of uses for ethnographic work in policy, programming, and practice are described in the volumes. The Toolkit is the perfect starting point for professionals in diverse professional fields including social welfare, education, health, economic development, and the arts, as well as for advanced students and experienced researchers unfamiliar with the demands of conducting good ethnography.

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ENHANCED ETHNOGRAPHIC METHODS

Audiovisual
Techniques,
Focused Group
Interviews,
and Elicitation
Techniques

JEAN J. SCHENSUL
MARGARET D. Lecompte
BONNIE K. NASTASI
STEPHEN P. BORGATTI

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TOOLKIT



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Jean J. Schensul and Margaret D. LeCompte

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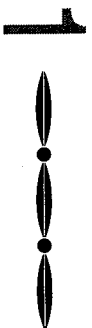
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AUDIOVISUAL METHODS IN ETHNOGRAPHY

Bonnie K. Nastasi

INTRODUCTION

I like to do things that boys do. I would like to be a boy sometimes. If you climb a tree you cannot because you cannot do that and be ladylike. I cannot eat a lot. It is not ladylike. I don't shout. Girls are brought up to be polite. Boys are more free. You cannot go to a friend's house like to spend a day or a night. Boys can. They can come home late and they won't get scolded or beaten. Parents have old ideas. Parents say, "We were brought up like this, so you will do this." If we go higher in education, they say a woman should stay at home and cook. We don't agree with that. (Comments from adolescent girls in a developing country during a group interview; Nastasi, Varjas, Sarkar & Jayasena, 1998)

 Through interviews such as this one, ethnographers are able to capture people's thoughts and feelings in their own language. Such data provide important insights into individual experiences and cultural practices. Traditionally, ethnographers have relied on the written record to capture informants' responses or to note their observations in natural contexts. Audiovisual techniques—consisting of audiotaping and videotaping—provide an alternative or supplement to the extensive written record that is the hallmark of traditional ethnography.

<i>Introduction</i>
• <i>Conceptual Considerations</i>
• <i>Logistics</i>
• <i>Transcription</i>
• <i>Coding</i>
• <i>Interpretation</i>
• <i>Use of Audiovisual Data</i>

The focus of this chapter is the use of audiovisual techniques to study human development or behavior in natural settings, such as classrooms or communities, in contrast to the traditional application of these techniques in controlled clinical or laboratory research settings. Audiovisual technology is particularly advantageous for collecting certain types of observational and interview data, such as observing human interaction or conducting group interviews. One primary advantage is the permanent and complete record of observations or dialogue, which can be used for analysis and interpretation of data. Although not completely free of researcher bias, audiovisual recording provides a record of events that can be readily subjected to interpretation by different researchers and from multiple perspectives.

The chapter provides you the opportunity to consider several critical issues related to the use of audiovisual technology in ethnographic research: What is the focus of your research? How can audiovisual technology be used to answer your research question(s)? What logistical decisions need to be made about the use of audiovisual technology? How should you approach transcribing, coding, and interpretation of recorded data? How can the audiovisual record be used to enhance data interpretation and facilitate the integration of research and practice? We examine each of these issues, drawing from research in psychology, education, and anthropology that has been conducted by Nastasi and her colleagues.

CONCEPTUAL CONSIDERATIONS

The first consideration in any research project involves conceptual issues related to the focus of your research (i.e., your research questions) and the philosophical or theoretical basis of your research questions. As we explore later in the chapter, your questions and the underlying perspectives influence how you approach the process of data collection,

transcribing, coding, and interpretation. For example, whether you begin with specific research questions (derived from existing theory, research, and/or your own applied experiences) or prefer to investigate in an inductive manner (allowing theory to evolve from your data) has critical implications for the entire research process.

Research Questions to Focus Audiovisual Data Collection

- What is the subject matter?
- Where can it be found?
- What behaviors or interactions do you want to record?
- When should you record?
- What period of time is sufficient (i.e., how frequently should you record)?
- How long should each session last?
- Should recording be continuous or intermittent?
- Whom should you record?

Before you begin to record, you must answer several questions about the focus of your research: *What is the subject matter* (e.g., students' interactions during cooperative learning, as they work in dyads/pairs or small groups)? *Where can it be found* (in a classroom in which the teacher uses cooperative learning)? *What behaviors or interactions do you want to record* (student-student interactions, teacher-student interactions, or both)? *When should you record* (e.g., only when students are interacting in groups, or for the entire class period)? *What period of time is sufficient? That is, how frequently should you record* (daily or weekly; for one semester or the entire school year)? *How long should each session last* (30 minutes or the full class period)? *Should recording be continuous* (for the duration of the 55-minute class session) *or intermittent* (at random 10-minute intervals)? *Whom should you record* (all students

within the classroom or selected pairs or groups of students; one classroom or several; one grade level or several)? The experiences of one group of researchers illustrates how these questions are considered in a classroom context.

EXAMPLE 1.1**CONCEPTUAL AND LOGISTICAL CONSIDERATIONS IN A CLASSROOM CONTEXT**

In a study of fifth graders' interactions during cooperative learning, the researchers (reports are found in Nastasi, Johnson, & Owens, 1995; Nastasi & Young, 1994; Young, Nastasi, & Braunhardt, 1996) considered several conceptual and logistical issues: Is our focus or conceptual attention on the interaction between individual students as they work in pairs/dyads within the classroom? If so, we do not need to videotape whole-class instructional activities unless we are interested in how whole-class instruction is related to the dyad work (e.g., Does the teacher provide instructions on how to work together?). Also, are we interested in what else is occurring in the classroom as we focus on a specific dyad? If so, we need multiple recorders to capture the simultaneous occurrences. However, there is the issue of equipment resources. Do we have or can we purchase multiple cameras and microphones? And would multiple cameras be more disruptive to the classroom? Other critical conceptual questions included the following: Are we more interested in an in-depth study of a few select students, or do we want a wider sample across all students within the classroom? Do we want to examine continuous interactions over time, or are periodic samples of interactions sufficient? Alternatively, if we want a record of ongoing classroom interactions and do not want to make decisions about sampling of the interactions beforehand, we could simply do continuous recording of the natural sequence of events and then sample after recording is finished. The answers to these questions, of course, depend in part on our resources. For example, do we have enough recording equipment and personnel to do continuous recording and/or simultaneous recording of different dyads? And could we use audiotape recorders for some dyads and videotapes for others? What is most important to capture—students' discussion or actions or both?

Key point

As the preceding example demonstrates, *the researchers' decisions are influenced by multiple considerations*. It is

advisable to start with the conceptual issues, determining what kind of data are essential to answer your research questions, and then consider what is feasible given available resources. The following description provides an example of how the combination of conceptual and logistical considerations influenced decisions about audiovisual recording in an applied research project.

EXAMPLE 1.2**CONCEPTUAL AND LOGISTICAL CONSIDERATIONS IN A COMMUNITY CONTEXT**

The purpose of the research project was to develop, implement, and evaluate an intervention for adolescent girls and their mothers to reduce the risk of substance abuse. The intervention was conducted in small groups in three formats: girls only, mothers only, and girls and mothers mixed. The intervention program required that group facilitators or leaders (i.e., staff members who were responsible for implementing the intervention) use certain facilitation strategies (e.g., questioning, prompting, modeling) for presenting information, encouraging group discussion, and engaging the group members in solving real-life dilemmas collaboratively (e.g., How do I respond to peer pressure to drink alcohol?). Data collection was necessary to document the use of facilitation strategies by group leaders in order to ensure program integrity (i.e., Is the program being carried out as specified?) and identify needs for additional staff training. Furthermore, researchers were interested in examining the extent to which the facilitation strategies promoted certain participant behaviors (e.g., considering different approaches to solving dilemmas).

Continuous recording of all sessions during a pilot study permitted in-depth study of the intervention process. There were sufficient personnel, cameras, and videotapes to record all sessions. However, human resources were insufficient for transcription and coding all of the tapes. Thus, the decision was to videotape all sessions so that a full documentation was available as archival data. This permitted the use of tapes for multiple purposes: documenting implementation, assessing facilitators' skills, and examining the relationships between facilitator strategies and participant behaviors. Furthermore, comprehensive recording during the pilot phase could help researchers make informed decisions about recording during the subsequent intervention project (Schensul, Berg, & Romero, 1997).

Once conceptual questions are answered, researchers face a series of methodological decisions related to recording, transcribing, coding, and interpretation and use of data. Some of the decisions that researchers must make apply to collection and analysis of ethnographic data in general (e.g., coding), but others (e.g., taping) are specific to the use of audiovisual techniques. Additionally, issues may vary depending on which type of recording—audio or video—the researchers choose to use. We begin with logistical considerations.

LOGISTICS

Logistical Considerations

- Videotape versus audiotape
- Should fieldnotes be used?
- Research staff needed and/or available?
- Acquiring and using audiovisual equipment and supplies
- The influence of recording on the natural setting
- Resources necessary in the setting to ensure that the equipment will function
- Recorders
- Confidentiality

Traditionally, the ethnographer need only equip himself or herself with a notebook to record fieldnotes, observations, dialogue, and so on. When using audiovisual techniques, however, the ethnographer is faced with a number of decisions: Should you audiotape or videotape? Should you also collect fieldnotes? What are the staff requirements? What needs to be considered as you purchase and use equipment and supplies? In addition, using audiovisual recording technology in natural settings requires certain considerations not relevant to contrived or laboratory set-

tings, where these techniques traditionally have been used. For example, to what extent does the recording equipment (particularly video cameras) alter the natural setting? What resources are necessary within the natural context (i.e., is electricity necessary)? Who will do the recording? How can confidentiality or anonymity be preserved when using recording devices? How do you effectively capture specific interactions in uncontrolled settings, for example, where background noise is a potential problem (e.g., how do you record a conversation between two individuals in a room full of people)? We address these and other questions as we explore the major logistical issues.

Audiotaping Versus Videotaping

One critical decision is whether to do audiotaping or videotaping. When one has a choice, videotaping usually is preferable because it provides a broader array of behavioral data. Specifically, videotapes permit the consideration of nonverbal behaviors in interpretation of individual or interactive responses. Nonverbal behaviors can facilitate interpretation of interview as well as observational data. For example, in individual interviews, the addition of nonverbal cues permits one to better interpret the respondents' responses (e.g., through facial cues or eye contact with the interviewer). In dyadic (pairs) or group interviews, videotapes can facilitate the identification of individual speakers and examination of group dynamics. Additionally, videotapes provide data on physical contextual variables, such as spatial arrangement, lighting, objects, and artifacts. Finally, *the continuous videotaped record can foster understanding of the complexity of a situation or the sequence of actions or events.*

Key point



Videotaping, however, does have disadvantages. Equipment is more expensive. Greater attention to the recording equipment is necessary (e.g., to ensure that the camera stays

in focus). The equipment is more visible and thus can be more intrusive; that is, people tend to be more aware of being filmed than of being audiotaped. Additionally, maintaining anonymity of respondents is more difficult with videotapes because they are visually identifiable. This is particularly important when informants are minors; are physically, mentally, or culturally vulnerable; are in some type of custody arrangement; or are providing sensitive information. These situations do not prevent the use of videotapes, but researchers must take extra precautions to protect access to the tapes. Perhaps most importantly, *the videotape transcription process is much more complex and time consuming than it is for audiotapes, particularly if you are interested in analyzing nonverbal behaviors and physical environment features.*

Key point

Notetaking

Another consideration is whether some form of notetaking is necessary in addition to audiovisual recording. As a general rule, audio/videotaping does not replace fieldnotes as a method of recording the ethnographer's impressions and capturing more global aspects of the context. It is possible to record notes and impressions on audio/video-tape at the beginning and end of a taping session, but it also is necessary to take written notes during a session. The need to accompany audio/videotapes with fieldnotes also depends on the context. For example, the researcher may find the tapes sufficient when the entire context is easily captured on videotape, the session is of relatively short duration, and comments and impressions can be recorded easily on tape at the end of the session. [There are, of course, situations when notetaking during a session is not feasible; for example, when your attention is directed toward conducting an interview or focus group. In such cases, addi-



Cross

Reference:

See Chapter 2 on recording and notetaking in focus groups

tional staff might be necessary to gather written notes.] The following example illustrates the use of fieldnotes to supplement videotape data.

EXAMPLE 1.3

USING FIELDNOTES TO SUPPLEMENT VIDEOTAPE DATA

In one study conducted in a fifth-grade classroom, researchers used videotaping to record whole-class, dyadic (pairs of students), and small-group activities. The purpose of the study was to examine the nature of students' interactions with each other as they engaged in cooperative learning over several months. However, researchers found it necessary to take fieldnotes in addition to taping in order to capture the more global aspects of the classroom context. For example, ethnographers took written notes about (a) global physical features such as arrangement of desks (drawing a map of the classroom), bulletin boards, rules posted in the classroom; (b) activities outside of the camera's range, for example, as students left their desks to seek help from the teacher or use reference materials (e.g., a central computer); and (c) the global instructional context, such as teachers' instructions to the whole class and the activities of students outside of the target dyad or small group. The ethnographers' record of informal conversations with teachers provided critical data about the teachers' perspective. Furthermore, the ethnographers recorded their impressions garnered from observations; these impressions were invaluable to subsequent data analysis and interpretation (Nastasi et al., 1995; Nastasi & Young, 1994; Young et al., 1996).

As suggested in the preceding example, the complexity of natural contexts such as classrooms or community settings present challenges for researchers who are using audiovisual recording. Without multiple cameras, it is impossible to capture permanent records of the multiple activities and events occurring simultaneously. In such situations, fieldnotes are essential to understanding contextual factors. In addition, the ethnographers' fieldnotes provide

invaluable data about their own impressions during observations.

Audiovisual technology also can be used to supplement written records or fieldnotes. That is, audio/videotaping can be conducted to provide a backup or archival record to the ethnographer's written records. The following description illustrates such use and further exemplifies the complementary nature of fieldnotes and tapes as permanent records.

EXAMPLE 1.4

USING AUDIOVISUAL TECHNOLOGY TO SUPPLEMENT FIELDNOTES

In one study, researchers conducted focus groups with adolescents attending schools in a community in Sri Lanka. The purpose of the study was to understand mental health issues among Sri Lankan youth in order to inform the development of culturally specific, school-based mental health programs. The groups were conducted by American and Sri Lankan co-researchers. The Sri Lankan researcher also served as interpreter. Two research assistants, one Sri Lankan and one American, were present to record verbalizations in the primary native language (Sinhala) and English, respectively. The translation process and the timing of interchanges permitted the research assistants to document all dialogue in both languages. In addition, discussions were audiotaped. The written transcripts in English served as the database for coding. The notes taken in Sinhala were used to supplement the English notes, provide another perspective on interpretation of Sinhala responses, and provide culturally specific terminology for key constructs. The research assistants also recorded contextual features and nonverbal behaviors. The on-site notetaking permitted identification of different speakers, which would have been difficult with audiotapes alone, given the group structure and language differences. The tapes were used to verify written notes when ambiguities arose, and they provided an archive of the interviews in two languages (Nastasi, Varjas, Sarkar, & Jayasena, 1998).

Research Staff

Given the multiple tasks required in conducting audiovisual recording, another critical consideration involves staff. Who will perform the multiple tasks necessary for recording? As noted in the previous section, it may not be feasible for one person to conduct a session (e.g., interviewer), monitor the recording equipment, and take written notes. Alternatively, you might consider hiring a research team, consisting of one or more interviewers, technicians to handle the audiovisual equipment, and notetakers. In the applied research study described earlier, Schensul and her colleagues hired different staff members for the multiple tasks. During a session, one person facilitated the intervention (group facilitator), another monitored the videocamera (filmer), and a third took fieldnotes (notetaker). Such division of labor facilitated accurate and comprehensive recording (Schensul et al., 1997).

Acquiring and Using Audiovisual Equipment and Supplies

A critical set of decisions involve the selection, purchase, and use of audiovisual equipment and supplies. Following are listed recommendations to assist you in making these decisions. These suggestions are based on extensive experience with audiovisual recording for research purposes. Given that your database is the audio or video record, careful selection and use of equipment and supplies are essential. Costs of equipment and supplies should be considered as you plan your study. In this section, we discuss each of the recommendations.

*Tips for Selecting, Purchasing, and Using
Audiovisual Equipment and Supplies*

- Acquire professional audiotaping or videotaping equipment designed for commercial use.
- Purchase good quality microphones that meet your specific needs.
- Purchase good quality audiotapes or videotapes.
- Purchase a good tripod for positioning the camera.
- Test and monitor your equipment regularly.
- Use appropriately trained personnel for recording.
- Mark all tapes clearly.
- Make backup copies of all tapes and store originals in a safe, secure place.



Key point

Acquire high-quality professional audiotaping or videotaping equipment designed for commercial use. Researchers should purchase the best equipment possible, preferably of professional production quality. Personal (retail) recording and playback equipment, although less expensive, provides fewer options (e.g., less control over viewing speed and playback capabilities). Consider your needs with regard to research purposes, context, and logistics. In selecting equipment, portability is likely to be an issue. For example, can the camera remain stationary in the research site, or do you need something that is easily moved about? Consider whether battery-operated recording equipment (camera, microphone, audio-recorder) is needed, and inquire about the cost and feasibility of extended use of battery-operated equipment. Consider whether videocameras permit recording of date and time directly on the tape.

Another critical consideration is the degree to which the equipment allows flexibility for reviewing tapes. Transcription equipment is available for facilitating the review of audiotapes by providing greater control of the rewinding

and pausing functions than is possible with typical audiotaping machines (e.g., the transcription machine has foot-pedal control so that your hands can remain on the keyboard). Make sure that playback equipment (audio or video) permits ease of repeated playback and pausing (e.g., you are returned to the exact location after a pause), multiple speeds for reviewing tapes, a counter that provides a time record, and minimal slippage (e.g., you want to be able to return to the exact spot on a tape as indicated by the counter—for repeated viewing and for intercoder agreement purposes). Headsets also are available to permit private review of audiotapes or audio portions of videotapes. Software programs are available that permit connections between video playback equipment and computer, so that the computer controls the playback equipment (e.g., Video-Toolkit™, 1992). Such software facilitates the coordination of viewing and transcribing. It is important to inquire about the feasibility of connections between your computer and the video playback equipment as you purchase equipment; and to consider the availability, cost, and ease of use of the software as well as the compatibility of the software requirements with your existing computer.

Purchase good quality microphones that meet your specific needs. There are a variety of microphones from which to choose, and they vary in utility, convenience, and price. It is very important to know whether the microphones built into cameras and audio-recorders are sufficient for your purposes. The built-in microphones are frequently inadequate for capturing vocalizations of specific individuals in group settings (e.g., focus groups or group interventions) or for recording target conversations in settings with background noise (e.g., recording a student-teacher conversation in classroom) or when target individuals are moving about (e.g., teacher in a classroom). In these situations,

Key point



alternatives are necessary that permit focused recording and minimize recording of background noise (when using either audio or video equipment). For both audio and video recording, PZM (flat) microphones, which can be placed on a flat surface (e.g., table around which a group is seated), are ideal for capturing target conversations while minimizing background noise. PZM microphones are relatively inexpensive. Clip-on microphones are the best alternative for capturing vocalizations of target individuals (e.g., the teacher in the classroom or individuals within a group). Wireless clip-on microphones are particularly useful in situations in which the target individual is moving about (e.g., a teacher who moves about the classroom). The cost of wireless clip-on microphones, however, may be prohibitive. It is important to investigate such costs as you plan the project budget.



Key point

Purchase good quality audiotapes or videotapes. Generally, tapes of shorter duration are better. For repeated reviewing, tapes of 60 to 90 minutes are preferable to those of longer length because the tape quality is more likely to be maintained. Also, it is easier to find segments efficiently. Particularly when doing continuous recording, 90-minute tapes are preferable to 60-minute tapes because you need to change the tape less often.



Key point

Purchase a good tripod and position the camera securely. If you intend to place the camera in a stationary position for video recording, it is important that you purchase a good tripod. Particularly in high-activity situations, the camera must be secure. In all situations, it is critical to designate someone to be responsible for monitoring the recording equipment to ensure accurate focus of the camera and continual recording.

Test and monitor your equipment regularly. Before every session, make sure both video and audio functions work. If you are using battery-operated equipment, make sure batteries are still operative. Always carry additional batteries. Between sessions, recharge batteries if applicable. Monitor taping throughout the session. Although more convenient, letting the recorder or camera run unattended is risky. Valuable data can be lost if your equipment fails, the tape runs out, or the target activity or people move out of video or audio range.

Key point



Use appropriately trained personnel for recording. This is particularly critical when doing videotaping. Make sure camera personnel know how to operate equipment. If the camera will not remain in a stationary position, make sure the person responsible for the camera can record effectively while moving about. Limit the number of people who are responsible for taping. When multiple recorders must be used, make sure the guidelines for taping are clearly articulated and consistently implemented. Otherwise, the quality of recordings may vary widely, and you may lose critical data. The best recorders are familiar with the use of the tape recorder or camera, and they are well informed about the study, the scientific or other reasons for recording, and what they should be recording.

Key point



Mark all tapes clearly. Record dates and identifying information about participants and situation on each tape, either on labels or directly on the audio or video record. Record critical identifying information about participants and situation on the audio and/or visual portions of your tape. Properly label all tapes. Trying to discern the context of an unmarked taped session can be frustrating and result in loss of data, particularly as time passes.

Key point



**Key point**

Make backup copies of all tapes, and store the originals in a safe and secure place. You should make backup copies of tapes to prevent the loss of original data. Repeated viewing can lessen the quality of the recording. Tapes can be misplaced. It is impossible to recover data if tapes are damaged or lost. If several individuals will be viewing or coding tapes, make multiple backups. Store the original tapes in a safe and secure place (e.g., locked cabinet in your office). Make sure tapes are properly labeled. Protect tapes from extremes of temperature, dust, and magnetic sources. Use appropriate precautions for protecting the confidentiality and anonymity of taped respondents.

**Key point**

In summary, *research questions and logistical considerations (e.g., the number of cameras or tape recorders, the number of data collectors, the extent of resources for transcribing and coding of tapes) influence decisions about procedures for data collection.* As a general rule, more extensive recording (audioaping or videotaping) provides the greatest flexibility for data analysis and interpretation; that is, researchers have the luxury of reviewing and reanalyzing archival records. An extensive sample of recorded observations permits subsequent return to the original data to explore other interpretations and, most importantly, to understand the phenomena under study within the real-life context. Finally, the use of audio/videotaping does not preclude the need for fieldnotes about one's impressions, informal interactions, and global features of the environment.

**Definition:**

Transcription is the process of transforming audio portions of tapes to written form and adding written descriptions of interaction and setting.

TRANSCRIPTION

Transcription is critical in accessing data for analysis because much analysis is conducted on textual data. However, coding or analysis also can be conducted directly from the taped record. Although this section is focused on approaches to transcribing data into textual format, we ad-

dress the issue of direct coding from audio- or videotapes as well.

Transcription can be approached in a number of ways. It varies along a continuum from full transcription of all verbal and nonverbal behaviors and contextual factors to a summary of critical incidents. The approach you choose depends on the nature of the data you need as well as feasibility of transcription in terms of time and cost. For example, full transcription provides a thorough description of all verbalizations and, in the case of videotapes, nonverbal behaviors and physical context. However, it is time consuming and tedious. In this section, we examine the use of full transcription and transcribing of selected segments. We conclude with consideration of alternatives to transcribing, such as coding directly from tapes.

Full Transcription

Transcribing entire audiotapes or videotapes is a labor-intensive and time-intensive endeavor, but it yields a level of detail that permits close and repeated analysis of the data. In using this approach, it is necessary to review sections of the tape repeatedly in order to capture both verbal and nonverbal behaviors, as well as physical contextual features. This transcription technique precedes any attempts to code data. With such a thorough documentation, it is possible to code directly from the transcripts and to use the transcripts repeatedly to address alternative questions. To ensure accuracy, it is necessary to have a second transcriber review the tapes and fill in gaps that might have been left by the first transcriber. Even though transcribing is straightforward, some level of interpretation is needed. Thus, a second transcriber can also provide a reliability check. Alternatively, once tapes have been transcribed and are ready for coding, the coder can serve as a second transcriber, filling in the gaps or raising questions about differences in interpretation of

actions or vocalizations. It is much more difficult to do a full transcription of videotapes than of audiotapes. Whereas full transcription of audiotapes requires only detailed recording of all verbalizations, full transcription of videotapes requires description of both verbal and nonverbal behaviors (e.g., vocalizations, body language, facial expressions). The following excerpts exemplify the level of detail required in transcribing audio and video representations.

Video examples. The following transcribed segments are from a videotaped session in which two third-grade girls are working collaboratively at a computer (Nastasi & Clements, 1992). The excerpts depict both verbal and nonverbal behavior (nonverbal behavior is noted in parentheses) as the students create a computer graphics program. At this point, they are trying to create letters for a display. Student 1 is typing, and Student 2 is seated beside her. FD20 is a command that moves the pointer on the screen “forward 20 spaces.” Students use the protractor to assist them in creating angles. In the first segment, the level of detail helps to create a picture of the student’s actions and reactions to the products of her work.

EXAMPLE 1.5
FULL TRANSCRIPTION OF ONE STUDENT'S
BEHAVIOR AS SHE WORKS AT A COMPUTER

Student 1: (types, looks at the screen) Okay (typing) FD20. (looking at the screen) Wait a minute. (taking the protractor and measuring the design on the screen) Oh, deary me, deary me, deary me. (types, looks at the screen, types, looks at the screen) Oh god, this is difficult (types, looks at the screen, types, looks at the screen) Now what do I do? (clapping her hands and leaning back in her chair) I know what, no I don't (looking at the screen, then at Student 2). What are you writing?

EXAMPLE 1.6
FULL VIDEO TRANSCRIPTION OF TWO STUDENTS' INTERACTIONS
AS THEY WORK TOGETHER AT ONE COMPUTER

This excerpt is from the same session as in Example 1.5.

Student 1: (pointing to the folder) Write FD20 down.
Student 2: How come you make me do all the work? (reaching for the pencil)
Student 1: Yeah, 'cause I have to do this (typing). 10. Where's the protractor? (looking at Student 2)
Student 2: You have your own. (getting out of her seat)
Student 1: No I don't, I only have my folder (looked toward the camera, then looks toward the door, holding on to the cabinet with her left hand, balancing the chair on the two left legs) Au-uh-uh! (looks at Student 2, takes the protractor from Student 2 and puts it on the screen, making noises with her mouth)
Student 2: (out of view) There, now I'm erasing.
Student 1: (types, looks at the screen, types, looks at the screen) Yes! Ooh! (sitting back, then forward, types, looks at the screen, types, then looks at the screen, then reaches for the protractor, making noises with her mouth while measuring the design on the screen, types, looks at the screen) Ooh ma-na, ooh ma-na. (dancing in her seat, making silly noise, then looking at Student 2) [Name], what are you doing?
Student 2: I'm writing a procedure.
Student 1: Oh, okay, while I do this? (looks at the screens, then types)
Student 2: That way I'll have the procedure done.
Student 1: (types, looks at the screen, types, looks at the screen) I got the “M” done. (jumping back, looks at Student 2, hands on keyboard, positioned to type) Wait a minute. Go ask [the teacher] if I want to do an “E,” how do I get to an “E”? (looking at Student 2, tapping her feet on the floor)

Audio example. The following excerpt is from an interview with two fifth-grade girls about their understanding of cooperative learning (Nastasi et al., 1995; Nastasi & Young, 1994; Young et al., 1996). The two students have been working daily for several weeks as partners (a dyad) on a problem-solving project in mathematics class. These students had agreed to be interviewed on a weekly basis about their work in mathematics class.

EXAMPLE 1.7

FULL AUDIO TRANSCRIPTION OF INTERVIEW WITH TWO STUDENTS

- Interviewer: What do you think are the qualities of a good problem-solving dyad or team?
- Student 1: Umm.
- Student 2: Cooperation.
- Interviewer: Okay.
- Student 1: Well, understanding each other's point, like trying to see the other person's point and not just staying with your idea.
- Interviewer: Mm-hmm.
- Student 1: Like, be flexible. Don't always have to go with, like...
- Student 2: Whatever you came up with and you stay there, and you never know.
- Interviewer: Mm-hmm.
- Student 1: Yeah.
- Interviewer: Okay. Anything else you can think of?
- Student 1: Getting along.
- Interviewer: Okay. What, what do you mean by that? In terms of, like, cooperating and getting along?
- Student 1: Getting along. Like, um, sort of trying to work together.
- Interviewer: Okay.
- Student 1: Like, staying together and working together. Don't go off and do something yourself.
- Interviewer: Mm-hmm.
- Student 1: Like, you know, think sort of positively, like, you know, we're partners. We're supposed to be together.
- Interviewer: Mm-hmm.
- Student 1: And even if we don't, like, if our teacher matched us up, and like, um, I got with my worst friend, and [Student 2] got with her worst friend, and we didn't all, we wa-. Like, say we wanted to be partners really bad, and we didn't get each other as partners, and you know, we would still have to work cooperatively and try to understand other people's, and you know, not be a brat to the other person.
- Interviewer: Mm-hmm. W-what do you mean by being a brat?
- Student 1: Like, you know, always saying the wrong, like, um, telling them, arguing over stuff, like who's gonna get to write, who's gonna get to use the computer.
- Interviewer: Mm-hmm.
- Student 1: And, you know, just arguing over stupid things that don't really matter.
- Student 2: I know.
- Student 1: Like, you know, "you took my pencil," and things like that.

Whether transcribing audiotapes or videotapes, it is critical to select an experienced transcriber who is familiar with the focus of your work. For example, the transcriber must be familiar with the nature of the research and the level of detail that is necessary. It is likely that the first time you work with a transcriber, you will need to review the transcriptions to ensure that the transcription is accurate and the level of detail of nonverbal behaviors and/or vocalizations is sufficient. If you do not have time and resources for a full transcription, you may opt to use more economical alternatives, such as transcribing selected segments of tapes.

Key point



Transcribing Selected Segments


Approaches to Selecting Segments for Transcription

- Sample the tapes
- Select relevant segments
- Identify and fully transcribe critical incidents; summarize rest of content

In lieu of transcribing entire tapes, you may choose to transcribe segments of the audio/videotapes. There are three possible approaches to selecting segments.

Sample the tapes. The first approach is to purposefully or randomly select segments of the tapes to yield a sample of data across time, contexts, and participants. Thus, you might identify critical variables (e.g., level of expertise in problem solving) and then purposefully select within those constraints (e.g., choose a novice and an expert problem solver). Or, to obtain a representative sample of variations across key variables (e.g., problem solvers with different skill levels), you might randomly select segments across all videotaped sessions.

Select *relevant segments*. The second approach is to transcribe only segments of the tape that are relevant to the research question. For example, if you are studying cooperative learning and are interested primarily in the quality of exchanges between students as they work together, transcription could be restricted to cooperative interactions between students. The remainder of the tapes could be summarized to provide an indication of the larger context; for example, the transcriber could summarize other activities of the class session (e.g., whole-class instruction, individual seatwork) during which the cooperative student interactions (e.g., students working in small groups) occur. This second approach requires that the transcriber be knowledgeable enough of the focus of the research to identify tape segments that need full transcription versus summarizing.

 **Definition:** Critical incidents are recorded events that exemplify a code

Identify critical incidents. The third approach is to identify critical incidents that exemplify the codes, and transcribe fully the critical incidents while also summarizing the context. That is, the transcriber must first identify the incident (e.g., disagreement between individuals) that exemplifies the code (e.g., idea conflict) and then transcribe it fully.

EXAMPLE 1.8**TRANSCRIPTION OF A VIDEOTAPED CRITICAL INCIDENT**

In one study, Nastasi and her colleagues were interested in conflict resolution strategies within dyadic (pairwise) interactions; that is, in how fifth-grade students working collaboratively resolved their disagreements. The following excerpts depict examples of *cognitive (idea) conflict* (i.e., partners disagree about how to solve a problem) with two different types of conflict resolution: *resolution by teacher* (i.e., teacher intervenes to resolve the conflict) and *resolution by negotiation* (i.e., partners discuss the discrepant ideas and agree on mutually agreeable problem solution by compromise or acceptance of one of the proposed ideas). The rule for transcribing was that the transcription had to be detailed enough to justify the target code (e.g., idea conflict

with resolution) and distinguish it from alternative codes (e.g., distinguish the levels of resolution):

Idea Conflict With Resolution by Teacher

(Both girls then continue reading or repeating numbers from the [computer] monitor.)

Student 1: (reading from the monitor) Number of the line you wish to save . . . 1.

Student 2: No, you want to save 2.

Student 1: What?

Student 2: You want to save 2.

Student 1: (turns to the teacher) Do we want to save 2?

Teacher: No, you want to save that line you're on right there.

(Student 2 appears confused about which one, asks which line the teacher means, and the teacher says it should be line 2.)

Students 1 & 2: (simultaneously) Oh!

Idea Conflict With Resolution by Negotiation

(Both girls then read the next question, "How long are the barges?")

Student 1: Uh oh.

Student 2: 200.

Student 1: Okay, 200 feet each. . . .

Student 2: No, 200 feet altogether.

Student 1: No, but . . . there was three barges, and they were 200 feet each, remember?

Student 2: Oh yeah!

Student 1: Let's put 200 feet.

SOURCES: Nastasi et al., 1995; Nastasi & Young, 1994; Young et al., 1996.

The critical incident approach to transcribing requires the skills of a transcriber-coder, because the coding and transcribing processes are closely linked. That is, transcribers must be well-trained, experienced coders who are experts in the use of the specific coding scheme. In addition, effective use of this method requires the use of unambiguous guidelines for application of the coding scheme. Thus, extensive practice in use of the scheme with the specific data set is necessary before transcribing can proceed.

Alternatives to Transcribing



Key point

Transcription is not always necessary. For example, when using event-recording (e.g., how frequently did the event occur) or time-sampling (e.g., for what time period did the behaviors occur) procedures, coding can be done directly from videotapes or audiotapes without first transcribing. (Coding is addressed in a subsequent section.) In such instances, the coder views (or listens to) the tape and records either the occurrence or time engaged in target behaviors or events. This technique is useful if the researcher is interested only in representing the data in terms of frequency or time and is unconcerned with the degree to which incidents of the behavior or activity vary qualitatively. Additionally, the target constructs must be easily defined as discrete, observable behaviors (or discrete verbalizations). As the following example illustrates, nonverbal conflict is more easily documented by a frequency count than is verbal conflict.

EXAMPLE 1.9

FEASIBILITY OF FREQUENCY COUNT OF VERBAL VERSUS NONVERBAL CONFLICT

In a study of students' interactions during partner work at a computer, researchers Bonnie Nastasi and Doug Clements were interested in both nonverbal and verbal conflicts between students. An example of *nonverbal conflict* is one student grabbing the keyboard while the other is typing. An example of *verbal conflict* is disagreement about how students should share resources and responsibilities (e.g., discussing what should be typed and who should type). "Grabbing the keyboard" from one's partner is a discrete behavior that is easily distinguished and counted. In this study, researchers were not interested in how students "grab" materials from their partners; they were interested only in occurrences of such behaviors. "Disagreements," in contrast, could involve a brief interchange about sharing the keyboard, as follows:

Student 1: I want to type now.

Student 2: You have already typed for most of the class [session].

Student 1: Okay, you can type for the rest of today.

Alternatively, "disagreements" could involve lengthy discussions about how to complete an assignment, as follows:

Student 1: The teacher says we need to decide on the steps [for a computer program] and then enter them onto the computer [type in the commands]. So, let's decide how we want to do this.

Student 2: Well, I think we should start by choosing all the steps and writing them down. Then we can take turns typing in the commands.

Student 1: No, I think we should just decide and type as we go. You tell me what to do and I'll type.

Student 2: But that is not what the teacher told us to do. And besides, I want to type first. [The discussion continued.]

Verbal conflicts (disagreements) were less easily represented as discrete events than were nonverbal conflicts (grabbing). Furthermore, the researchers were interested in the nature of the disagreements; that is, what kind of arguments were posed and how the disagreements were resolved. As reflected in the preceding interchanges, the students approached resolution of the disagreement differently. Thus, transcriptions of verbal disagreements were critical. Recording frequency or duration (how many times disagreements occurred, or how long discussions over disagreements lasted) was insufficient for understanding how students worked together (Nastasi & Clements, 1992).

CODING


The coding process involves (a) the selection/development of a coding scheme, (b) training coders and providing practice in applying the coding scheme, and (c) implementing procedures to ensure consistent application and interpretation of the scheme by establishing and maintaining inter-coder agreement.

Selecting/Developing a Coding Scheme

The selection and/or development of a coding scheme can range from the adoption of a preexisting scheme to the inductive development of a unique scheme. We examine three variations along this continuum.

Adopting a preexisting coding scheme. At one extreme, the researcher selects a scheme that has been developed by other researchers investigating similar phenomena or is based on the researcher's earlier work. This most likely occurs when extensive theoretical and empirical work has been conducted on the phenomenon under study in the same or similar contexts, as the following case example illustrates.

Coding Scheme

 **Case Study:** Researchers Nastasi and Clements developed a coding scheme to study patterns of collaboration as individuals work in pairs (dyads) or small groups to solve mathematical or social problems. The following section addresses conflicts between or among individuals and strategies for resolving the conflicts.

Cognitive or idea conflict. Two or more individuals engage in a conflict of ideas or disagreement about task conceptualization or solution. Partners present different ideas and make explicit their recognition of a disagreement. For example, students present differing ideas about how to solve an assigned problem and acknowledge that their ideas are different.

Social conflict. Verbal or nonverbal behavior of individuals indicates a discrepancy in expectations about the social aspect of the interaction. For example, partners state that their expectations about sharing resources differ (“I thought I could use the calculator first”), or they engage in behavior such as criticizing others, name calling, or hitting.

Conflict Resolution Strategies

No resolution. Conflict remains unresolved.

Teacher resolution. Teacher intervenes and resolves the conflict.

Social dominance. The solution is socially imposed by one partner and/or the other partners acquiesce.

Social negotiation. Partners resolve the conflict through mutual negotiation on a purely social basis (e.g., “We used your idea last time, so this time we use my idea”).

Idea dominance. Resolution is imposed by one partner but with consideration of the quality of the ideas that were proposed. That is, one or more partners provide a logical rationale for the proposed solution(s) before resolution is reached. However, the selected solution is imposed by one partner and/or the other partner(s) acquiesce.

Idea negotiation. Resolution is reached through a mutual agreement of partners, typically following discussion of the merits of alternative perspectives. Agreement can reflect the decision to accept one of the proposed ideas or a compromise between opposing positions.

Idea synthesis. Resolution reflects a synthesis of opposing viewpoints. That is, the final resolution is an integration of different ideas into a qualitatively different solution.

The scheme was initially developed to study the interactions of children in preschool and kindergarten classrooms (Nastasi & Clements, 1994). The researchers used the scheme in a number of studies with school-age children ranging from Grades 1 through 6 (Clements & Nastasi, 1988; Nastasi & Clements, 1992; Nastasi, Clements, & Batista, 1990). They modified the codes and created new codes to permit more detailed examination of conflicts (e.g., distinguishing social from cognitive conflicts) and resolution strategies (delineating several strategies for conflict resolution) across a variety of populations and contexts. The process of modification of the scheme was based on research findings that linked certain interactions (resolution of cognitive conflicts through negotiation) with desired outcomes (higher-order thinking skills in intervention studies; e.g., Nastasi & Clements, 1992). Furthermore, the use of the scheme by different coders and with different collaborators forced revisions of the codes to facilitate understanding. That is, as different research partners questioned the meaning of specific codes, researchers refined definitions to ensure clarity.

This coding scheme has been used most recently to guide training and conduct process evaluation in risk prevention research with adolescents and adults. In this research, group facilitators were trained to present cognitive conflicts (dilemmas depicting risky situations) to small groups of participants (e.g., six to eight members) and to encourage group members to discuss the dilemmas and generate solutions through negotiation of different viewpoints (alternative approaches to solving the dilemma). In addition, researchers investigated the interactions among group members as they discussed dilemmas to determine how the discussion process contributed to expected outcomes (enhanced decision-making skills). Furthermore, in one study, the definitions of conflict resolution strategies were used to facilitate self-evaluation of group dynamics. That is, group members were given descriptions of the resolution strategies and asked to identify the strategies they used to resolve disagreements in their groups (Nastasi et al., in press; Schensul et al., 1997).

Modifying a preexisting scheme. An alternative to adopting a preexisting scheme is to modify the preexisting scheme to fit the phenomenon and context under study. This is likely to occur when some early theoretical and databased work has been conducted, but the scheme is not general enough to be applicable across all populations and contexts. Given both the individual and contextual variation of most human phenomena and the nature of ethnography, most preexisting schemes will require at least some modification. What is essential is that the researcher identify the appropriate definition and interpretation of codes for the specific focus of the inquiry. Usually, through the course of a research program, an individual researcher or team of researchers develops a general framework for coding with flexibility for application to specific individuals and/or contexts, as illustrated in the preceding example. As Nastasi and her colleagues applied the scheme to different contexts, the

coding scheme was modified to examine new research questions. The following provides an illustration.

EXAMPLE 1.10

MODIFYING A CODING SCHEME

In earlier versions of the scheme (Nastasi & Clements, 1992), the teacher's presence with the target pair or group was coded as "noncollaborative" activity, and "collaborative" activity was restricted to the times when students were working together without teacher assistance or intervention. As these researchers investigated the interactions of student pairs (dyads) over a period of time (e.g., the school year), they became interested in the role of the teacher in facilitating collaboration among students (e.g., when students asked the teacher for help, or when the teacher intervened with specific groups in the process of monitoring their work; Nastasi, Bingham, & Clements, 1993). At this point, the coding scheme was modified to incorporate teacher presence. Thus, instances of collaboration when the teacher was interacting with the group were distinguished from those when the teacher was not involved directly with the group. This change in coding scheme permitted in-depth study of the teacher's influence on the nature of students' collaboration (Nastasi et al., 1995).

Developing a new coding scheme. Another alternative is the inductive development of a unique coding scheme. This is most likely to occur in the theory development process, when relatively little is known about the phenomenon of interest or when the target population or context is totally unfamiliar. With an inductive or grounded theory approach, the coding categories originate or evolve from the data. In such instances, the ethnographer/researcher sets out to define the phenomenon of interest purely from the perspective of those being studied (i.e., from the "emic" perspective). In contrast, when the researcher applies a preexisting scheme without modification, the phenomenon is interpreted from the perspective of the researcher (i.e., from the "etic" perspective).

The researcher's approach to developing a new scheme may vary in terms of the influence of existing theory and

research. For example, in the early stage of theory development, the researcher may approach the data in a highly inductive manner, with a minimum of preconceived ideas.

In this situation, the researcher starts the process of scheme development by reviewing all of the recorded or transcribed data and identifying relevant categories for classifying behaviors, ideas, events, and so on. These categories then become the basis for coding the data; that is, coders apply the code to the full set of data. Subsequent refinement of the coding scheme might involve identification of subordinate or superordinate categories to most appropriately represent the data and explain the phenomenon under study. The following is an example of this process.



Cross

Reference:

See Book 5, Chapter 5, for a discussion of how codes emerge from data

EXAMPLE 1.11

INDUCTIVE DEVELOPMENT OF A CODING SCHEME

In a study of sexual risk among youth in Sri Lanka, sociologist Tudor Silva, anthropologist Stephen Schensul, and their colleagues conducted extensive, in-depth interviews with young male and female adults. These informants were questioned about sexual knowledge, attitudes, and practices (in addition to other aspects of their lives). Transcripts of the interviews were reviewed, and any reference to “sex” was identified. One particular category of interest was sexual behaviors. Little was known about sexual practices in this culture, and prior research had shown cultural variations in the sequence of sexual behaviors (e.g., ranging from holding hands to sexual intercourse).

The research team, through careful examination of the data, identified a series of “heterosexual” behaviors relevant to the Sri Lankan culture. Some behaviors involved several variations, thus yielding subordinate categories. In addition, the researchers, through further study of this young adult population, were able to categorize the behaviors in terms of types of sexual risks (e.g., shame, pregnancy, loss of virginity) and level of sexual risk (e.g., ranging from no or minimal risk to high risk for sexually transmitted diseases [STDs]). This categorization scheme provided an important framework for understanding sexual risk, directing further study within this and other cultures, and informing the development of risk-prevention interventions for youth (Silva et al., 1997).

Training Coders

Guidelines for Preparing Coders

- Inform coders about ethical issues
- Provide an introduction to the research
- Make sure coders understand research methods and concepts in the study

How the researcher develops a coding scheme influences the training or preparation of coders as well as the establishment of intercoder agreement (which we examine in the next section). In this section, we examine training of coders with regard to adopting or modifying a preexisting scheme or developing a new scheme.

Regardless of the approach to coding, there are a few general guidelines for preparing coders. First, researchers must inform coders about ethical issues, such as the need to maintain security of data and to protect the identity of informants. Second, they should provide an introduction to the purpose and methodology of the research. Third, they must make sure coders have an appropriate level of knowledge about research methodology and the conceptual basis of the work.

Adopting a preexisting scheme. If you select a preexisting scheme, training of coders is straightforward. The researcher provides:

- The coding scheme with predetermined categories and definitions
- Examples of earlier applications of the scheme
- Practice in applying the codes to subsets of the new data set or similar data sets
- Feedback on the accuracy of application

The sequence of instruction, demonstration, practice, and feedback continues until coders have reached an appropriate level of precision in terms of accuracy, consistency of application, and agreement with other coders on the use of the scheme. This sequence would be followed, for example, in using the Nastasi and Clements (1994) scheme presented in an earlier section.

*Steps in Modifying or
Creating a Coding System*

- Coders learn about the research, its theoretical base, and the local culture
- Researcher and coders develop and assign codes based on transcripts
- Coders work individually
- Researcher and coders compare and discuss codes
- Coding system is refined
- Coders become full partners in the coding process
- Coders teach new coders

Modifying a preexisting scheme. With modification of an existing scheme, training of coders becomes a more participatory process. The coders are provided information about the existing scheme, the assumptions underlying the scheme, and the focus of the current work. Then, coders participate collaboratively with the researcher in application and modification of the existing scheme by going through the following steps.

First, the researcher and coders together review transcripts and discuss assignment of codes to the text. In this phase, the focus of discussion is on the meaning of codes, distinctions among codes, and boundaries of categories (i.e., what meaning is central to the category, what is peripheral, what is outside of the category—what fits, what does

not). The lead researcher and coders then start to develop exemplars of the coding categories for future reference. This phase continues until there is sufficient clarity to permit coders to work independently.

Next, the coders work individually with sample transcripts and convene with the researcher to compare and discuss coding. In this phase, the same transcript segments are chosen for coding by all coders. The researcher and coders then meet and compare the application of categories across coders, identify points of agreement, and discuss discrepancies in coding. The focus, again, is on clarification of meaning and identification of category boundaries and exemplars. Researchers and coders agree on new codes, collapsing or expanding existing coding categories, and the creation of new subcategories. The purpose is to develop a coding scheme that fits the questions, population, and context of the specific study. In addition, the coding team is developing consistent application and interpretation of the coding scheme, progressing toward intercoder agreement. This process is guided initially by the researcher.

With practice, the coders become full participants in the process. If the process works well, members of the coding team develop enough expertise to work independently of the researcher. At this point, the researcher meets periodically with coders to monitor consistency of application, as well as serves as a consultant for coders to resolve discrepancies and/or discuss further modifications of the scheme. Coders should develop sufficient expertise to teach new coders.

The potential outcome of collaboration between the primary researcher and coders can be beneficial. It was in the context of discussing coding that the researchers Nastasi and Clements, and the coder-collaborator (Bingham, a doctoral student in anthropology) raised questions about the difference between dyadic (2 students) and triadic (2 stu-

dents with teacher) interactions. In particular, the active presence of the teacher could serve to disrupt or facilitate collaborative activity, depending on whether the teacher provided direct instruction or prompted students to consult with each other, respectively. In this instance, the collaborative process resulted not only in revision of the scheme, but also in the generation of new research questions (Nastasi et al., 1993).

Developing a new coding scheme. When using an inductive process to develop a coding scheme, coders again become full participants or co-researchers. The process of preparing coders and developing the scheme is similar to that just described for modification of existing schemes.

For coders to participate as collaborators in generating and applying the coding scheme, they must become familiar with the underpinnings of the work, particularly the purpose of the research, the researcher's theoretical-empirical base and related work, and the culture being studied.

The coders then familiarize themselves with the data by reviewing transcripts and related documents. The coders, in collaboration with the researcher(s), generate categories for organizing the data. For example, researcher and coders (research-coding team) individually review data, suggest organizing schemes, and then meet to compare and discuss schemes. Through a process of consensus building, the research-coding team generates a scheme to be applied to the transcripts. The process of application and refinement is similar to that described earlier. The research-coding team independently code selected transcripts, meet to discuss and clarify the meaning and boundaries of codes, and modify the scheme as needed. Eventually, the coders reach a level of expertise that permits independence, seeking consultation with the researcher as needed. The researcher continues to monitor the process for consistency among coders and across the data.



Key point

Coders as co-researchers. The following illustrates the involvement of coders as co-researchers. In this project, coders not only participated in coding interviews but also contributed to the inductive process of identifying key constructs for understanding mental health among Sri Lankan youth.



EXAMPLE 1.12 CODERS AS CORESEARCHERS

Initially, the existing theory and research about mental health in Western cultures guided the investigation of mental health needs and resources in Sri Lanka. Several key constructs (e.g., competencies, stressors, coping strategies) were used to develop interview questions for students and school staff in an urban community in Sri Lanka, and they were subsequently used to guide the initial coding of interview transcripts. The initial coding process served to segment the data into broad categories (key constructs), from which culture-specific categories/codes were inductively derived. The coders, who were doctoral students in psychology, assisted in the initial coding process as well as the process of subsequently generating a culture-specific scheme for depicting the mental health of Sri Lankan youth. To participate effectively in these processes, the students/coders needed to become familiar with both the relevant literature on mental health and Sri Lankan culture (Nastasi et al., 1998).



In summary, the preparation of coders varies as a function of one's approach to selecting and developing a coding scheme. At one extreme, coders are trained in the use of a preexisting scheme. It is the researcher's responsibility to make sure they learn to apply the scheme in a consistent and accurate manner. At the other extreme, coders are full participants in the inductive development of a coding scheme. In the latter case, they become co-researchers. How you approach the selection or development of a coding scheme and the preparation of coders depends on your approach to inquiry. In my own experience, coders who develop a deep understanding of the research focus and process generate trustworthy (reliable and valid) data and develop ownership



Key point

in the research process. Thus, preparing expert coders goes well beyond teaching them to use the coding scheme in a consistent manner. It requires educating them about the research focus and process so that they become co-researchers.

Ensuring Consistency in Coding: Intercoder Agreement



Definition: Intercoder agreement (reliability) refers to consistency of interpretation and application of codes to the data by multiple coders

Intercoder agreement (also termed interrater agreement or reliability) refers to the consistent interpretation and application of codes to the data set by multiple coders. Initially, a common understanding must be established between/among prospective coders. Subsequently, consistency checks across individual and multiple coders must be conducted throughout the process of coding. If the researcher is using an existing coding scheme, the process of establishing intercoder agreement involves teaching coders to use the scheme in a consistent manner. Although application of the scheme to different contexts and individuals or groups may require some modification of the definitions of codes or categories, it is typically expected that such changes will be minimal. Thus, the focus is on establishing a consistent interpretation and application of preexisting codes.

If the coding scheme is being developed in an inductive manner, then the process of establishing intercoder agreement involves the construction of categories and their definitions. Coders are more active in constructing the meaning of codes, and establishing intercoder agreement becomes more of a collaborative process among coders/researchers. Of course, even in an inductive approach, the primary researcher can identify and define all codes and then teach coders to interpret and apply codes consistently to the data. With either of the aforementioned options, establishing agreement is best accomplished through guided practice in

applying the scheme, followed by independent practice in coding by every coder, with checks for consistency. When inconsistencies occur, discussion regarding discrepancies in interpretation is needed. Such discussions may yield clarification of meaning of the codes or redefinition of codes. In some instances, discussions will result in development of new coding categories representing different constructs or in elaboration of existing constructs. The process of independent coding with discussion continues until an acceptable level of agreement is reached. Depending on the complexity of the coding scheme and the level of involvement of coders in modifying or developing the scheme, this process can take a considerable amount of time. For example, the application of the scheme developed by Nastasi and Clements (1994) to a new context with new coders can take several months. The process, however, typically involves modification of code definitions or creation of new codes, as has been described in an earlier section.

Traditionally, intercoder (interrater) agreement involves the computation of a quantitative index of agreement, which represents the percentage of agreement between or among coders; that is, the frequency of agreement in the application of specific codes to a particular data segment. An acceptable starting point is at 85% to 90% agreement (for more detailed discussion, see Bakeman & Gottman, 1986). Alternatively, a more subjective index may be used; that is, comparison continues until discrepancies in application are no longer apparent to the coders. Any discrepancies are minor and can be resolved easily through discussion. It is critical that agreement be established prior to final application of the coding scheme. If this is not done, when new codes or new interpretations arise halfway through the coding process, coders will need to review and recode tapes or transcripts that have already been completed. The critical issue here is consistency across coders and over the sample of data.

Consistency checks should be done periodically throughout the coding process to protect against “observer drift” that is, the tendency for observers/coders to change their interpretations or definitions of codes over time. The researcher must ensure that changes in application and/or interpretation of codes reflect “real” changes in the phenomenon being studied. For example, if the nature of collaborative learning among peers changes as a function of an intervention (e.g., the contributions of peers become more equal following a training session on sharing responsibilities), then the definition of the construct should reflect this change. In such a case, the “collaborative learning” code might still be applied, but the qualitative change with respect to equitability of contribution needs to be described in the interpretation of data. Or, a new subcode might be added to reflect level of contribution of peers. Alternatively, the coders might redefine their definition, independent of the natural phenomenon (e.g., after one or more coders read research on collaborative learning). Once the coding system has been finalized, this form of redefinition is unacceptable because it reflects a change in the coders’ interpretation of the “same” (similar) phenomenon.

INTERPRETATION

The researcher’s approach to data interpretation is influenced by the conceptual focus of the study and the approach to data analysis. The meaning that the researcher attributes to data is influenced by the extent to which the researcher has relied on existing theory and research to frame research questions and guide coding. If the researcher approached both data collection (e.g., interview questions) and the coding of data with a specific focus, framed within existing theory and research, it is likely that the same focus or framework will influence the interpretation of the data as well. For example, if the researcher adopts a preexisting

scheme for coding data, it is likely that the scheme also will guide data interpretation, as illustrated by the following.

EXAMPLE 1.13

DATA INTERPRETATION USING A PREEXISTING CODING SCHEME

Suppose a group of researchers decides to adopt the coding scheme developed by Nastasi and Clements (1994). They code interactions of students working in small groups for instances of cognitive or idea conflict, social conflict, and resolution strategies. The data are summarized to show the number of idea and social conflicts, as well as the proportion of conflicts (idea and social) that are resolved using each of the resolution strategies. That is, the researchers (a) describe the students’ interactions in terms of the number of idea versus social conflicts and how those conflicts were resolved, (b) compare how groups varied with regard to frequency of conflicts and resolution strategies, and (c) attempt to explain the learning of individual students in terms of their experience with conflict and resolution during group work. The researchers conclude with a discussion of the extent to which their findings confirm or disconfirm existing theory and research.

Alternatively, researchers approach data collection and coding in a more inductive manner, with the goal of building theory rather than adopting existing theory. Thus, the research questions and initial coding categories are broad in focus, and a more specific coding scheme is derived from the data. We return to the work of Silva et al. (1997) to illustrate this process.

EXAMPLE 1.14

DATA INTERPRETATION WHEN CODE CATEGORIES ARE INDUCTIVELY DERIVED

As noted earlier, Silva and his colleagues identified a unique sequence of heterosexual behaviors relevant to the sexual practices of young adults in Sri Lanka on the basis of the descriptions provided by representatives of this population. They also identified types of sexual risk that these young adults considered to be important; these risks defined sexual risk for this population (i.e., sexual risk included loss of virginity, loss

of relationships, social stigma, pregnancy, sexually transmitted diseases [STDs] and HIV/AIDS). Finally, researchers identified the respondents' perceptions about the link between specific behaviors and specific sexual risks. The researchers then used this information to create a culture-specific risk-prevention program (Nastasi et al., in press). That is, the intervention focused on promoting accurate perceptions of risk by helping participants to link culture-specific patterns of sexual behavior to various types of risk. These perceptions then guided decision making aimed at risk reduction.

USE OF AUDIOVISUAL DATA¹

Uses of Audiovisual Data

- Facilitate interpretation through
 - Researchers' repeated reviews of tapes
 - Participants' reviews of tapes to inform researchers
 - Participants' reviews for own self-reflection
 - Presentation and discussion of findings
- Foster integration of research and practice

The ethnographic data generated from audiovisual technology have multiple uses, some of which are unique to the audiovisual record. As we noted at the beginning of this chapter, ethnographers are interested in capturing behaviors, thoughts, feelings, and products that provide insights into cultural phenomena in order to better understand human behavior within the context of culture and (in the case of applied ethnography) to design interventions to effect individual and/or cultural change. Data derived through the use of audiovisual technology can be applied easily to the same interpretative and applied purposes.

Using Audiovisual Data to Facilitate Interpretation

Audiovisual data can be used to facilitate or enhance interpretation in a number of ways. As we noted earlier, the

permanent audiovisual record provides unlimited opportunities to review, reanalyze, and reinterpret data. Tapes also afford the opportunity for researchers to review the data in context. Analysis and interpretation of data transcribed from videotapes are greatly enhanced by viewing relevant segments of the tape. Even with very detailed transcripts that include verbalizations, actions, and contextual descriptions, the tapes provide a visual supplement for characterizing context, events, and so on. The videotape facilitates the creation of a "mental picture," or gestalt, of the events. In addition, review of tapes helps the viewer to put critical incidents into context so that they are not interpreted as isolated events.

Second, audiovisual records provide a unique medium for presenting data to participants to enhance the researcher's analysis and interpretation of data and ensure that the participants' perspectives are reflected accurately. Similarly, the audiovisual record can be used to foster collaboration between researchers and participants; that is, participants collaborate in data analysis and interpretation and thus become co-researchers. For example, tapes can be shown to (or in the case of audiotapes, played for) participants to get their interpretation of what was occurring and how the taped events relate to sociohistorical features of the culture, as illustrated in the following description.

VIEWING VIDEOTAPES WITH RESEARCH PARTICIPANTS TO ENHANCE DATA ANALYSIS AND INTERPRETATION

EXAMPLE 1.15

Researchers Nastasi and her colleagues were conducting an ethnographic study of a fifth-grade classroom. The classroom teacher (co-researcher, Braunhardt) requested the opportunity to view videotapes with one of the other researchers (Nastasi) in an effort to learn about the process of analyzing and interpreting observational data. As they viewed the tapes, the researcher and teacher-researcher engaged in a dialogue about the teacher's interpretation of what was happening as students worked together

on complex mathematical problem-solving tasks. During this discussion, the teacher shared valuable information about the students, her teaching philosophy and practices, and the culture of the school. For example, in one videotaped session, two students were engaged in ongoing conflict that interfered with the performance of the group (of four students) in which they were working. In the process of explaining how she intervened to end the conflict, the teacher-researcher indicated that one of these students was frequently engaged in similar conflicts in other settings within the school. Furthermore, she explained how the principal's expectations about discipline affected how she intervened. The joint viewing of the videotapes provided important insights from a key participant (teacher) and ultimately influenced both data analysis and interpretation (Nastasi et al., 1995; Nastasi & Young, 1994; Young et al., 1996).

Third, tapes provide a mechanism for promoting participants' self-reflection and learning. For example, tapes provide a permanent record that can be reviewed and discussed with participants to encourage self-evaluation and, if necessary, behavior change.

EXAMPLE 1.16
**VIEWING VIDEOTAPES WITH RESEARCH PARTICIPANTS
 TO ENCOURAGE SELF-REFLECTION AND BEHAVIOR CHANGE**

In an ethnographic study of school-age children, videotaped episodes provided the basis for identifying and discussing the collaboration strategies that students had used in the classroom. The purpose of the discussions was to gather data about the students' experiences in cooperative learning activities. Dyads (pairs of students) who had worked together were asked to reflect on what had occurred during a recorded episode, using queries such as "Describe how you worked together," "What happened?" "How did you respond to your partner?" "How did you settle that disagreement?" The students were asked to discuss the perceived effectiveness of their collaboration techniques and to consider alternative approaches to collaboration; for example, "Did the way you settled that disagreement work for you?" "Were both partners contributing to the task?" "What else could each of you have done to encourage your partner to contribute ideas?" "How else could you have resolved the

disagreement?" The discussions evolved into opportunities to promote reflection and learning. Subsequently, the ethnographer, the classroom teacher, and the students themselves reported related behavior changes (e.g., use of alternative techniques that had been generated during the discussions). Additionally, students reported increased monitoring of their collaborative interactions (Nastasi et al., 1995; Nastasi & Young, 1994; Young et al., 1996).

Fourth, tapes provide a mechanism for disseminating findings. Tapes can be used for presentation of research findings, for training staff in future projects, and for demonstrating target intervention strategies or outcomes. If you intend to use tapes for demonstration and dissemination purposes, it is critical that taping quality is optimal and that you secure permission from participants for these purposes. In preparing tape segments for presentation purposes, it is preferable to develop separate tapes of the selected segments. Professional videotape equipment is available to assist you in this process.

**Using Audiovisual Technology to Foster
 Integration of Research and Practice**

Audiovisual technology, particularly videotaping, can play an important role in promoting the integration of research and applied work (practice) in education, psychology, and anthropology. The examples presented in this chapter involved the use of audiovisual technology for the purposes of designing or studying interventions in applied (school and community) contexts. Some of the insights gained from this work suggest important future directions.

Using audiovisual technology to facilitate the development of culture-specific interventions. For example, joint viewing of videotapes of classroom instruction with teachers and/or students can be used to (a) gain insights about sociocultural

**Cross
 Reference:**

See Books 1 and 6 for discussions of informant permissions, privacy, and confidentiality

influences on instructional practices, and (b) influence instructional practices. In an earlier example, joint viewing of videotapes with the classroom teacher led the teacher to reconsider how she handled student conflicts in her classroom (Young et al., 1996).

EXAMPLE 1.17**VIEWING VIDEOTAPES WITH RESEARCH PARTICIPANTS TO DEVELOP CULTURE-SPECIFIC INTERVENTIONS**

During the videotaped session, the teacher (Braunhardt) intervened and stopped the argument between two students, refocusing them on the assigned task. As the two students continued to interact during the remainder of the class session and into the next day's session, the ongoing conflict continued to erupt, particularly when the teacher was not present. The teacher (during viewing of the tapes) noted that her effort to stop the conflict had only a temporary impact, and that it may have been better to work with the students to help them negotiate their own resolution. The teacher, however, also noted that the expectation of the school's principal was to intervene immediately with any student conflicts in order to minimize the amount of time off-task. This teacher was so impressed by this experience that she noted in a presentation to the school board (conducted with researchers Young and Nastasi) that she had learned the importance of teaching students how to resolve their own conflicts.

Using audiovisual technology for staff development. As the preceding example suggests, videotapes of interventions (e.g., classroom instruction) can provide practitioners (e.g., teachers) with the opportunity to engage in reflection on their own practice, and subsequently influence future practices. This outcome was serendipitous. In other work cited in this chapter (Schemsul et al., 1997), videotapes of intervention sessions were used for the specific purpose of staff development of the group facilitators who implemented the community-based intervention program for adolescent girls and their mothers, as described in Example 1.18.

EXAMPLE 1.18
VIEWING VIDEOTAPES WITH RESEARCH PARTICIPANTS FOR STAFF DEVELOPMENT

Archival data (videotaped sessions) from pilot intervention sessions provided the means for verifying accurate application of intervention techniques, tracking progress of group facilitators, and determining the need for additional staff training. Staff development consultants and group facilitators first reviewed tapes independently to examine and evaluate application of specified intervention techniques. Then, the consultants and facilitators together reviewed tape segments, discussed the accuracy and effectiveness of strategies, and identified objectives for subsequent training.

Using audiovisual technology to enhance intervention programs. Videotapes of individuals in natural contexts can be used as an intervention tool. That is, taped segments can be reviewed by interventionists (e.g., group facilitators) to (a) identify targets for change (e.g., communication patterns among group members), (b) monitor participants' reactions to specific intervention techniques (e.g., how group members respond to modeling of effective communication strategies), and (c) track the progress toward program goals (e.g., whether group members improve in their conflict resolution strategies over time). Furthermore, viewing tapes with target individuals (e.g., group members) can foster self-evaluation of their behavior or skills and facilitate subsequent development of plans for behavior change or skill development. Use of videotapes to foster self-modeling (i.e., by viewing oneself exhibiting exemplary behavior on edited videotapes) is an effective tool for promoting behavior change (Kehle & Gonzales, 1991).

Using audiovisual technology for program evaluation purposes. Taped segments provide archival data that can be reviewed repeatedly for different evaluation purposes. In

the following example (Schensul et al., 1997), videotapes used for staff development purposes also provided a database for program evaluation.

EXAMPLE 1.19

USING ARCHIVAL VIDEOTAPED DATA FOR PROGRAM EVALUATION

The videotapes of intervention sessions provided the basis for evaluating the effectiveness of specific intervention strategies (e.g., modeling) in promoting target skill development (e.g., effective conflict resolution). Archival tapes could be randomly sampled, selecting a portion (e.g., 25%) of the sessions for transcribing and coding. The remaining (75%) tape sessions provided additional data, such as documentation of what occurred during the 25% of the sessions, or exploration of additional questions: What facilitator strategies were particularly effective in the girls-only compared to mother-only or mother-daughter groups? Was the content of the program curriculum appropriate for both adolescent girls and their mothers? Furthermore, tapes provided a record of the progress of program participants in developing target skills (e.g., communication and decision making).

Using audiovisual technology to facilitate communication with research participants. Audiotapes and videotapes can be used to gather additional data from research participants. For example, after listening to audiotaped segments from interviews, participants can be asked to elaborate further on their responses. Alternatively, videotaped observations could be used to gather interpretations from participants about their own behavior. Furthermore, taped segments could be used in dissemination efforts with participant groups to gain their input and garner support for intervention efforts.

With technological advances, the potential application and sophistication of audiovisual technology is unlimited. The capacity for interactive video, computer-video links, graphic displays, and computer voice recognition will likely

influence the ways in which we are able to use audiovisual technology for ethnographic research. It is likely, for example, that voice recognition technology will permit direct transcription from audiotapes. The combination of interactive video, computer-video links, graphic representation, and voice recognition may make manual transcription unnecessary and permit us to view videotapes via computer and orally enter our codes and interpretations into the dataset. These technological advances are likely to enhance the capacity for sharing data with participants and presenting findings to researchers and practitioners.

The capacity for personalized compact audiorecorders (e.g., individuals wearing individual microphones and recorders) already exists. This permits, for example, individuals to go about their routine activities and record all their verbal interactions with others as well as their personal reflections. Videocameras are becoming more compact; it is possible that we might one day equip participants with personal videocams for recording the events, sights, and sounds that they encounter. Such technological advances would revolutionize our notion of the key informant (i.e., a well-informed insider to the culture). However, the availability of these personalized recording devices also raises issues about informed consent of those individuals who are being recorded.

In spite of the potential technological advances, some issues are likely to remain unchanged. For example, the ethnographer's presence in the culture or context under study and direct interactions with participants are likely to continue to be critical to the research process. The conceptual issues, such as the role of theory, the researcher's focus, and the selection or development of a coding scheme, will remain important. The advantages of collaboration among researchers, coders, and participants are likely to remain critical for ensuring accuracy of data analysis and interpretation.

Cross

Reference:

See Books 1 and 6 for more information on researcher roles and collaboration among research team members

In conclusion, audiovisual technology is likely to become as common as fieldnotes in the tools of ethnography. The effective use of this technology requires that researchers and interventionists develop relevant technological expertise and continue to stay abreast of technological advances. At the same time, it is critical that ethnographers give serious consideration to the integration of this technology in ways that enhance research, theory development, and intervention.

NOTE

1. Although this section focuses specifically on using videotaped data, the same principles apply to audiotaped data.

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SUGGESTED RESOURCES

VideoToolkit™ user's guide. (1992). Millis, MA: Abbate Video.

Video Toolkit™ (1992) is a videotape logging and editing package made for use with Macintosh computers. The software makes it possible to perform videotape logging and editing functions from your computer, thus facilitating the coordination of transcription and tape logging/editing. Using the computer and one (source) video device, you are able to control video search and playback options via the computer. With a second (recording) video device, you are able to control the logging and assembly of video segments. This software is particularly useful for managing a video database and developing video presentations. The software is available from Abbate Video, Inc., 14 Ross Avenue, Floor 3, Millis, MA 02054.

Bakeman, R., & Gottman, J. M. (1986). *Observing interaction: An introduction to sequential analysis*. New York: Cambridge University Press.

This book is an excellent resource for conducting observations of ongoing social interactions and analyzing the sequential nature of such interactions. The authors provide valuable information on the conduct

of systematic observations, development of coding schemes, establishing interrater agreement, and sequential analysis of interactions. The text is particularly useful for those interested in the quantitative analysis of videotaped data.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.

This book is an excellent resource for conducting qualitative analysis of both audiotaped and videotaped data. The authors provide valuable information on the coding and display of such data.

2

FOCUSED GROUP INTERVIEWS

Jean J. Schensul

INTRODUCTION

This chapter will provide readers with guided instruction in conducting focused group interviews. We choose to use the term “focused group interview,” rather than the more frequently used “focus group,” because the focus group is only one form of group interview. We begin by defining what a group interview is.

WHAT IS A GROUP INTERVIEW?

A group interview is any discussion held between a researcher and more than one other individual. Group interviews can be used for many purposes: to collect information on a cultural domain, to develop listings for pilesorts, to identify the range of variation in opinions or attitudes on a set of topics, to collect simple numerical data on reported experiences, or to react to the results of previously collected data (Scrimshaw, 1992). Group interviews may be formal or informal, preorganized or occurring in natural settings, guided to a greater or lesser degree by the anthropologist/facilitator, and more or less open-ended. Group interviews

Introduction
• What Is a Group Interview?
• Informal Versus Formal Group Interviews
• Organizing and Preparing for Focused Group Interviews
• Identifying and Training Facilitators
• Conducting a Focused Group Interview
• How to Ask Questions in a Focused Group Interview
• Recording Data for Focused Group Interviews
• Validity and Reliability
• Management and Analysis of Focused Group Interview Data