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# EFFECTS OF COGNITIVE INTERVIEWING, PRACTICE, AND INTERVIEW STYLE ON CHILDREN'S RECALL PERFORMANCE

R. Edward Geiselman

University of California, Los Angeles

Karen J. Saywitz

Harbor-UCLA Medical Center

Gail K. Bornstein

University of California, Los Angeles

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Requests for copies of this report may be sent to either: R. Edward Geiselman, Department of Psychology, University of California at Los Angeles, Los Angeles, CA 90024; or Karen J. Saywitz, Division of Child Psychiatry, Harbor-UCLA Medical Center, 1000 West Carson St., Torrance, CA 90509.

Phone inquiries may be directed to: (213)206-0349.

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ABSTRACT

In recent years, an increasing number of children have been asked to testify concerning events of legal importance. One concern for the courts is that many cases have been dismissed because of confusing testimony and accusations of inappropriate questioning. The major purpose of the present research was to assess the impact of a "practice interview" with children about one event on the completeness and accuracy of the same children's later reports about a second, unrelated target event. Third and sixth graders participated in one of three practice/target interview conditions (RS, RC, or CC), where "R" represents practice with rapport-building only, "S" represents a target interview that contained all components of the standard interview procedure, and "C" represents either a practice or target interview that contained all components of the cognitive interview procedure (Geiselman et al., 1984, 1985, 1986, 1988, 1990). The interviews concerning the target event, which were conducted by experienced law enforcement personnel, revealed significantly more correct information from (1) C interviews than S interviews, and (2) C interviews that were preceded by practice C interviews than practice R interviews. Both of these effects were obtained without an increase in errors; and the accuracy rates across all target interviews were consistently high, with an average of 87 percent correct. Few reliable age-related differences were observed; but the sixth graders recalled more correct information and they were subjected to significantly

fewer instances of "inappropriate" interview exchanges than the third graders. The tape recorded interviews were analyzed along several quantitative and qualitative dimensions to develop a taxonomy of interview styles and suggestions for developing a more effective interview format for use with children as witnesses.

# EFFECTS OF COGNITIVE INTERVIEWING, PRACTICE, AND INTERVIEW STYLE ON CHILDREN'S RECALL PERFORMANCE

Both research and debate concerning the use and credibility of children as witnesses in a court of law has been expanding not only in frequency, but also in scope. As a reflection of the growing interest in children's testimony, many scholarly volumes have been published in recent years where these important issues are discussed (Ceci, Toglia, & Ross, 1987; Ceci, Ross, & Toglia, 1989; Fivush & Hudson, in press). The issues of primary concern revolve around three domains: (1) The mismatch between the current legal system and the capabilities of children, (2) children's memory recall abilities and performance, and (3) concerns surrounding various forms of miscommunication between children and interviewers. The present report will focus on the second and third issues.

Extensive investigation into the completeness and accuracy of children's memory performance has produced a complex network of outcomes, none of which allow for a sweeping, general conclusion regarding the veracity of children's memory as witnesses. Aside from the usual individual differences observed in any population of observers, factors affecting children's recollection of experiences have included: The memory testing procedure (Goodman & Reed, 1986), wording of questions (Dale, Loftus, & Rathbun, 1978), type of information requested (Goodman, Aman, & Hirshman, 1987), children's participation in the event (Geiselman, Saywitz, & Bornstein, 1990; Rudy & Goodman, in

press), rapport development (Dent, 1982; Saywitz, 1988), suggestibility (Ceci, Ross, & Toglia, 1987; King & Yuille, 1987), and children's understand the legal process (Saywitz, 1989).

As part of the body of literature on interview techniques with children, work by the current authors and colleagues have applied, evaluated, and refined the "cognitive interview" for use with children (Geiselman & Padilla, 1988; Geiselman, Saywitz, & Bornstein, 1990). The elaboration and modification of standard interview techniques to include cognitive retrieval methods has, thus far, resulted in encouraging results, with a 21 percent improvement in correct recall of facts from a film (Geiselman & Padilla, 1988); and a 26 percent improvement in correct recall of facts from a live event (Geiselman et al., 1990). These percent improvements were obtained in comparison to standard police interview procedures without an accompanying increase in incorrect details.

Similar success with the cognitive interview procedure has been obtained with adults (Geiselman, Fisher, MacKinnon, & Holland, 1985), non-student adults (Geiselman, Fisher, MacKinnon, & Holland, 1986, Experiment 2), educable mental retardates (Brown & Geiselman, in press); and an investigation currently is underway with adult rape victims (Latts & Geiselman, 1990). Considering eight experiments conducted by Geiselman and colleagues on cognitive interviewing with a variety of subject populations and stimulus materials, the average accuracy rate for information recalled with cognitive interviewing was 87.0 percent

in comparison to 54.5 percent with standard interviewing.

The adult version of the cognitive interview was applied to a sample of 7-to-12 year olds in the Geiselman and Padilla (1988) study; and based on both quantitative and qualitative analyses of the taped interviews, modifications were made to better match the individual techniques with the capabilities and limitations of children. One purpose of the Geiselman et al. (1990) study, which focused on 7-to-11 year olds, was to perform an evaluation and further refinement of the revised procedures from Geiselman and Padilla (1988) using a live, staged event. A second purpose for the Geiselman et al. (1990) study was to derive and evaluate measures for avoiding potential miscommunication between the child and interviewer, which could lead to errors, confabulations, and misinterpretations of the child's recall. This examination of dyadic misconceptions between child and interviewer further established the importance of children's understanding of what is expected of them in an interview as witnesses or victims (Saywitz, 1987, 1989; Saywitz, Jaenicke, & Camparo, 1990). It appeared that, at a minimum, appropriate "interview etiquette" on the part of the interviewer was as important toward obtaining a complete and accurate report as was the recall ability of the child. The present study further addressed the impact of interviewer style on performance.

## The Cognitive Interview

The following general description of the cognitive interview procedure is adapted from the description provided by Geiselman

et al. (1990). A more detailed template for the practitioner is presented in the Method section of this report.

The theoretical considerations that underlie the questioning techniques developed and evaluated by Geiselman et al. (1984) and revised by Fisher, Geiselman, and Amador (1987) are based on two factors which are integrally involved in the retrieval of memories. First, a memory is composed of several features (Bower, 1967; Underwood, 1969; Wickens, 1970); and the effectiveness of any technique to access a memory is related to the extent to which the features of the context created by the retrieval technique overlap with the features comprising the memory for the information that is sought (Flexser & Tulving, 1978). Second, there may be several retrieval paths to a memory for an event, so that information not accessible with one memory retrieval technique may be accessible with a different technique that creates a different memory cue (Tulving, 1974).

Based on this theoretical framework, a memory retrieval procedure was developed for witnesses called the "cognitive interview." This label was selected because, for the most part, the techniques comprising the procedure were borrowed from research in cognitive psychology. The cognitive interview consists of four general retrieval methods plus additional, more specific techniques. Of the four general methods, two attempt to increase the feature overlap between the memory for the event and the memory retrieval mnemonic: (a) Mentally reconstructing the environmental and personal context that existed at the time of

the crime (Bower, Gilligan, & Monteiro, 1984; Malpass & Devine, 1981; S. Smith, 1979), and (b) Reporting everything (being complete), even partial information, regardless of the perceived importance of the information (M. Smith, 1983). [It is critical to note that the "be complete" method refers to the perceived importance of the information, not to the confidence of the witness in the information. In fact, all interviewers who practice these methods are routinely instructed to make clear this distinction to each person being interviewed]. The other two methods encourage using multiple retrieval paths: (c) Recounting the events in a variety of orders (Burns, 1981; Whitten & Leonard, 1981), and (d) Reporting the events from a variety of perspectives (Anderson & Pichert, 1978; Firstenberg, 1983).

Mentally reconstructing the circumstances that surrounded a to-be-remembered event has been shown to be a powerful memory aid in numerous laboratory experiments. This technique is certainly easier than physically returning to the scene of a crime, and it may be preferable given that the scene of a crime can change. Asking the victim or witness to be complete has several positive effects. First, many people do not have a good idea of what information has investigative value. Second, the effort to be complete sometimes leads one to remember an important detail through association with something seemingly unimportant. Third, maximizing the completeness of a certain report can avoid subsequent legal questions about why this information had not

been reported earlier.

Previous research has shown that witnesses who are instructed to recall a crime scenario in reverse order as well as in forward order retrieve more total information than witnesses who recall in forward order twice (Geiselman et al., 1986; Geiselman & Callot, 1989) Typically, the additional information gained pertains to events that distinguish the event in question from similar events. This is important because actions incidental to a crime scenario, which would more likely be recalled in reverse order, often have great investigative value toward linking one crime with another. Mentally changing perspectives while recalling an event also appears to enhance the completeness of reports. In many cases, the victim or witness had a variety of perspectives on the incident, but people tend to report what they remember from only one, static perspective.

In addition to these general instructions, the cognitive interview contains several specific suggestions to facilitate recall of appearance, speech characteristics, conservation, names, and numbers. For example, "Did the person (or voice) remind you of anyone (or any voice) you know. If so, why?" or "Think about your reactions to what was said and the reactions of others who were there." Furthermore, if the witness is blocking on a name he/she is asked to go through the alphabet searching for the first letter of the name. In laboratory experiments, the first-letter technique has been found to be successful roughly two-thirds of the time (Gruneberg & Monks, 1976).

As noted by Geiselman et al. (1990), the literature on child development provides some reason to believe that some form of the cognitive interview would be useful with child witnesses. With respect to reconstructing the circumstances, Pressley and Levin (1980) have observed that imagery instructions enhance recall performance of children. With respect of reporting everything, children's spontaneous reports often are found to be less complete than those of adults (Chi & Ceci, 1986; King & Yuille, 1987; Marin et al., 1979). In addition, children do not have a good idea of what has investigative value because they have limited knowledge of the legal system and many misconceptions about the forensic context (Saywitz, 1989). With respect to varied recall orders, the ability to order recall chronologically has been shown to develop gradually with age (Brown, 1975; Piaget, 1969). Finally, with respect to varied perspectives, the ability to take on the perspectives of others has been shown to develop gradually with age (Flavell, 1986).

Rationale for the Present Study

The purposes for the present study were three-fold. First, this study was designed to provide a further replication of the usefulness of cognitive interview procedures with a different sample of children and with a different staged scenario than used by Geiselman and Padilla (1988) or Geiselman et al. (1990).

Second, the recorded interviews were used to refine all phases and segments of the cognitive interview process, including rapport development, interview preparation instructions (i.e.,

"rules of the game" for the interview), the narrative report, and the specific questions phase.

Third, the primary purpose for the present study was to evaluate the effects of a "practice" interview with children about an innocuous staged event prior to their being interviewed about the event targeted for investigation. Such a procedure would have the potential for at least three positive effects on the recollections of children as witnesses: (1) It would familiarize children with the process of being interviewed, thereby affecting their willingness to speak freely and reducing their feelings of anxiety. (2) It could identify specific misconceptions that a given child may have about being interviewed, such as what it means to say "I don't know." (3) It would familiarize children with the cognitive interview techniques, both giving them practice and correcting any misconceptions that need to addressed before a formal interview.

If successful, practice interviewing could be included in the current legal system's protocol for obtaining reports from children as witnesses without any apparent negative effects on due process for either the defense or the prosecution. Encouragement for the potential usefulness of practice can be taken from the results of a study with children conducted by Bottoms, Goodman, Rudy, Port, England, Aman, and Wilson (1989). In their experiment, children who were given practice on line-up tasks with feedback improved their ability to perform accurately in subsequent line-up tasks.

## Method

### Staged Events

To preserve the ecological validity of the present investigation, both of the staged events used in this research for the practice and target interviews were live events, carried out by experienced actors. Previous experiments have shown that children's memories are sensitive to the form of stimulus materials used (Johnson & Foley, 1984; Yuille & Cutshall, 1986).

Staged Event for the Detectives' Interviews. The scenario for the target staged event closely followed that used successfully by Geiselman et al. (1984). This incident is sufficiently rich in quantifiable information such that significant differences were obtained between cognitive and standard interview conditions. Two research assistants from the Theater Arts Department at UCLA served as the actors. A female played the role of a teacher who was introduced by the second author to show slides of landmarks in California to the group. Three or four children were assembled for each staging of the event; and the event was staged three or four times on any given day.

After 7 slides were presented, along with short stories about the landmarks, a male entered the room waiving a stick and throwing down a backpack, such that sufficient noise was made to gain the children's attention. A somewhat heated verbal exchange ensued between the intruder and the teacher over the schedule use of the slide projector, in which several bits of key information

were presented. This information included items about persons (physical descriptions, clothing, names), objects (backpack, ring of keys attached to a 12-inch stick wrapped in black tape, slide projector), and events (actions, dialogue). The dispute over the use of the slide projector was resolved in a socially acceptable manner and the intruder exited the room. The slide show was resumed and two additional landmarks were presented. A detailed script for the entire slide-show incident, which required approximately 5 min to complete, is presented as Appendix A-1.

Waiting-Room Incident for the Practice Interviews. At the completion of the slide show, the second author returned to greet the children and to take them to a "waiting room." The second author left the waiting room and, after a brief delay, a male portraying a "surfer dude" entered. This character was played by another actor who was recruited from the Theater Arts Department at UCLA. He informed the children that his name was Andrew; and that he was waiting for a Mr. Henderson. He then asked the children if it would be okay if he waited in the room with them. As with the slide-show event, the waiting-room incident was rich in detail about persons (physical description, clothing, names), objects (skate board, stuffed animal, pencils as gifts), and events (actions, dialogue). The "surfer dude" gave up waiting for Mr. Henderson after approximately 5 min and left the waiting room. A detailed script for the entire waiting-room incident is presented as Appendix A-2.

Subjects

The subjects who participated in this study were 34 third graders between the ages of 8 and 9 years (18 females, 16 males), and 58 sixth graders between the ages of 11 and 12 years (29 females and 29 males). They were recruited from two schools within the Inglewood, California, School District (Daniel Freeman Elementary School and Oak Street Elementary School) and from the University Elementary School at UCLA. The parents or guardians of each child were contacted through the schools by letter for their consent. Assent to participate then was obtained from those children who were given permission by their parents/guardians.

Design

Each child was randomly assigned to one of three interview format conditions: CC = practice cognitive, target cognitive; RC = practice rapport only, target cognitive; RS = practice rapport only, target standard. All practice sessions were conducted for the waiting-room incident and all target sessions were conducted for the slide-show incident. Thus, the general data matrix formed a 2 by 3 array, with the factors being grade level (third, sixth) and interview format condition (CC, RC, RS). Comparisons were made between the target interviews in the RC and RS conditions to assess effects of cognitive versus standard interviewing; and comparisons were made between the target interviews in the CC and RC conditions to assess effects of practice with cognitive interviewing.

Interviewers

The interviewers for the waiting-room incident were advanced undergraduate psychology majors from UCLA. Each interviewer was given written instructions on how to conduct the cognitive interview with children, and participated one week later in a two-hour training session. The training session covered each phase of the interview format (rapport development, interview preparation instructions, the narrative report, specific questions, and the cognitive memory retrieval methods). In addition, a training videotape of a cognitive interview was shown, followed by a live demonstration and critique of a cognitive interview by the authors.

Each student interviewer was assigned at least one child from each of the three interview format conditions. Thus, each student interviewer conducted some full cognitive interviews and some sessions of rapport development only. Given that the student interviewers conducted the practice interviews, they were provided with a script of the waiting-room incident in advance. This was to enable them to challenge a given child when he/she produced information that was incorrect.

The interviewers for the slide show were recruited from the Los Angeles County Sheriff's Department. Each of the 11 off-duty detectives who volunteered for this study had completed formal instruction from the Sheriff's Department on interviewing child witness/victims, and had a minimum of 4 years experience in the field. Each interviewer was offered a $125 honorarium per

day for their participation.

Each detective was assigned randomly to one of two interview conditions: Cognitive or standard. None of the detectives were given prior knowledge of the contents of the staged scenario, and none were told the purpose of the experiment other than it was a study of interview methods for children. Prior to participating in the experiment, the two groups of interviewers were provided with written instructions on how to conduct the type of interview to which they were assigned; and all but one of the interviewers attended a 2-hr training session conducted by the authors.

Procedure

The experimental procedure for each child was carried out over two days. On the first day, the children witnessed the slide-show incident, followed by the waiting-room incident, followed by an interview about the waiting-room incident with one of the UCLA students. All three components of the procedure were conducted on the school grounds at separate locations. The interviews conducted by the UCLA students consisted of either the full cognitive interview or rapport development only; and each child was interviewed individually.

Two days later, each child was introduced to one of the Sheriff's Deputies, who interviewed the child about the slide-show incident. This interview consisted of either the full cognitive interview or a full standard interview.

Interview Conditions

The student interviewers were told that a group of balloons

had been placed in the room where the waiting-room event took place. The presence of the balloons was to be used by the student interviewers as an anchor to direct the children back in time to the appropriate episode targeted for the practice cognitive interviews. The Sheriffs were told to question the children about: "The time when they were taken from their classroom to the stage in. the cafeteria," and to tactfully refrain from discussing anything with them that may have happened once they were taken from the cafeteria.

Rapport Development. Each of the interviews conducted by the students and the detectives began with the development of rapport with the child; and all interviewers studied the following guidelines for rapport development prior to participating in the research. These guidelines were derived from the results of the experiment conducted by Geiselman, Saywitz, and Bornstein (1990).

(a) Greet the child by saying, "You must be Mary? "My name is Bob." Do not begin your interaction with the child by asking his/her name, and do not test their memory for your name. This puts the child on the "hot seat" and gives him/her the impression that you are not in charge and do not know who you are dealing with.

(b) Begin rapport development by asking simple questions about the child's world and interject some personal information about yourself where appropriate. The child is considered to be at ease with the interpersonal exchange when he/she talks freely

with you in response to your questions and statements.

Commonly used content areas for rapport development that were found to be used commonly by Sheriff's Deputies by Geiselman et al. (1990) are: School-related (grade level, teacher, favorite subject), Personal (age, birthday, favorite games, friends), Interview-related (purpose for the interview, promote a 'teamwork' effort with the child), and Family-related (brothers and sisters, ages, names).

(c) Rapport questions that could be coercive should be avoided, such as "Do you want to be my friend?" This question could be coercive because the child may feel compelled to say 'yes' so as to not offend the interviewer. As a general rule, rapport questions that require Yes-or-No answers should be avoided. They do not promote expanded conversation between the child and the person asking the questions. Instead, try to use positive, open-ended questions, such as "What are your favorite TV shows?"

(d) Avoid being overly patronizing in developing rapport. Pressuring the child to "be your friend" will not necessarily result in a more effective interview. In particular, this may create an awkward situation for a child who has been warned by others not to be friendly with strangers.

(e) If the child appears nervous, try to empathize with his/her feelings. Do not simply tell the child not to be nervous because this negates the child's feelings and rarely reduces anxiety. Instead, indicate the naturalness of such feelings and

state that "I wonder if it feels scary to talk to a stranger about stuff that is so hard to talk about."

Interview Preparation Instructions. For those sessions that were carried out in either the full cognitive or standard formats, rapport development was followed immediately with interview preparation instructions, which were designed to establish some ground rules for the questioning to follow. The interviewer informed the child that "I am going to ask you some questions today." The child then was made ready for questioning by giving the child the following four instructions.

(a) "There may be some questions that you do not know the answers to. That's okay. Nobody can remember everything. If you don't know the answer to a question, then tell me 'I don't know,' but do not guess or make anything up. It is very important to tell me only what you really remember. Only what really happened."

(b) "If you do not want to answer some of the questions, you don't have to. That's okay. Tell me 'I don't want to answer that question.'"

(c) "If you do not know what something I ask you means, tell me 'I don't understand' or 'I don't know what you mean.' Tell me to say it in new words." Dent (1982, p. 293) also has noted the importance to convey strongly to the child that "questions do not have to be answered, moreover, that it is better to say 'I don't know.'"

(d) "I may ask you some questions more than one time.

Sometimes I forget that I already asked you that question. You don't have to change your answer, just tell me what you remember the best you can."

The Narrative Report. The first phase of the questioning portion of the cognitive and standard interviews consisted of the child's narrative account of "what happened." The interviewers who conducted the cognitive sessions were given the following guidelines.

(a) Just prior to asking for the narrative report in the child's own words, the child should be told the following.

"Picture that time when... (insert the appropriate lead-in information here), as if you were there right now. Think about what it was like there. Tell me out loud. Were there any smells there? Was it dark or light? Picture any other people who were there. Who else was there? What things were there? How were you feeling when you were there?" Dent (1982, p. 289) also concluded that to reconstruct the environmental and emotional context that surrounded the event is "the most obvious productive interviewing strategy...Ask the children to recount the appropriate day's activities from some point to the (point) in which the incident occurred."

This reconstruction of the circumstances surrounding the event should be carried out with the child describing the environmental and personal context aloud, to ensure that the child understands what is expected and to ensure that the child expends the mental effort required. Also, avoid using such terms

as "pretend" and "imagine" to maintain the child in reality and minimize fantasy.

To carry out the second cognitive interview technique prior to the narrative (to be completed), the interviewer should instruct the child: "Now I want you to start at the beginning and tell me what happened, from the beginning to the middle, to the end. Tell me everything you remember, even little parts that you don't think are very important. Sometimes people leave out little things because they think little things are not important. Tell me everything that happened."

(b) The single most important factor for maximizing the completeness of a child's report is to not interrupt while the child is talking. Any hunches that you may have can be pursued at the end of the interview. This procedure will ensure that you maximize the completeness of the report; and it will avoid any legal complications from your "leading" the witness. Take notes sparingly and ask for clarification later, when the child is finished. Use the tape recorder and speak slowly so that the child will follow your lead, giving you the time you need for understanding the story (Dent, 1982, p. 288-289).

If the child requires prompting with their narrative report, help the child in neutral ways. For example, you might ask, "And then what happened?" "What happened next?" or repeat part of what the child just said in a questioning tone, "So he gave you a marble?"

General Format for the Specific Questions Phase. The second phase of the questioning portion of the cognitive and standard interviews consisted of specific questions necessary to clarify and expand upon what the child reported in the narrative. The interviewers were asked to gather as much information as possible about any persons who were present, objects, and events. All interviewers who conducted the cognitive and standard sessions were given the following guidelines.

(a) You are in control of this portion of the interview, but to ensure a complete report, make the child think that he/she is in control. Do this by not interrupting the child; deal with any inconsistencies in the story later on, near the end of the interview. Do not use a fixed sequence of questions for each and every child. Every crime and child is different and should be treated as such. If a report form is used to ensure that all bases have been covered, use the form at the end of the interview. Try to ask the questions in an open-ended format, such as "Can you tell me about the clothes that the man was wearing?" Dent (1982) also found that interviewers who obtained the most accurate descriptions relied upon unprompted recall and general, open-ended questions. Thus, save most of the direct questions for near the end of the interview, such as "Did he have any scars or tatoos?"

Do not ask the child a string of questions without waiting for a response. This could indicate to the child a lack of interest and enthusiasm for what he/she has to say. Similarly,

the completeness of a child's report will be affected by their self confidence. Do not express surprise to anything the child may say; and change to easier topics if the child says "I don't remember" to three questions in a row. Do not become overly persistent or verbally abusive in response to your frustration about the child's inability to remember certain facts. Instead, change topics and return for the missing facts later in the interview.

(b) Children are sensitive to that manner in which questions are phrased and presented. Language must be kept simple and appropriate for the child's level; use short sentences and one- or two-syllable words. Use positive phrasing, such as "Do you remember the color of the car?" rather than negative phrasing, such as "You don't remember the color of the car do you?" Pause between questions to ensure that the child tries his/her best and does not feel as if you are in a hurry. Speak in a relaxed, even tone of voice. Do not speak in an authoritarian manner, as this will stifle the "team effort" to generate as much information as possible.

To promote the team effort, phrase your questions using the child's own words whenever possible. Use your interaction with the child during rapport development to evaluate the child's level of speech, language, and vocabulary; and then use these observations to structure your questions of the child in a style that is developmentally appropriate. For example, it is well documented that there are age-related trends in children's

knowledge of legal terminology (Saywitz et al., 1990).

(c) Pay attention to the child's answers to your questions. Avoid giving the child information that was given to you by another child interviewed previously. This not only can result in false leads; but it also can confuse the child and/or suggest to the child that he/she is not in control of the interview.

(d) Do not jump to conclusions about the reliability of a child as a witness or victim simply because the child's story sounds fantasy-like or too detailed to be true. For example, in one recent interview a child said that "There were 'monsters' in the room." Only with further questioning was it discovered that the child was referring to puppets that resembled monsters.

(e) It is a good idea to praise children for their effort (for "working so hard," for "helping you out," for "doing such a good job"). It is not a good idea to praise them for the content of what they report, as this may cause them to "report more of the same" whether they are certain about the information or not.

Cognitive Methods in the Specific Questions Phase. The interviewers who conducted cognitive interviews were given the following guidelines in addition to those presented above.

(a) At some point during the specific questions portion of the interview, the child should be asked to recall the events in reverse order, starting at the end, then the middle, and then the beginning. Do not simply begin by asking questions in reverse without first preparing the child. Children are fully capable of understanding and performing this technique. To prevent the

child from making giant leaps backward in time, the child should be prompted continually, after each of their responses, with the question, "Then what happened right before that?"

(b) Also, use the following specific memory jogging techniques where appropriate. Go through the alphabet to look for the first letter of a forgotten name. Elicit further descriptions of people or characteristics of their voices, "Did the man (voice) remind you of anyone (any voice) you know. If so, why?" Elicit further details concerning conversation, "How did you feel about what the man said?"

(c) When the child appears to have exhausted memory for the event, the child should be asked to take one the perspective of a prominent person who was present in the child's report, "Put yourself in the body of _____, and tell me what you would have seen or heard if you had been that person."

Analysis

Each tape recorded interview about the slide-show incident was transcribed by research assistants trained by the authors. This catalog of information then was used to score each child's transcribed report for (1) the number of correct items of information recalled, and (2) the number of incorrect items of information generated. Included in the analyses were three types of information contained in the slide-show staged event: Persons, objects, and events. The persons category included physical appearance, clothing, mannerisms, and speech characteristics. The objects category included various props,

such as a ring of keys on a black stick, a backpack, a slide projector, and children's erasers used as rewards at the end of the scenario. The events category included movements, inter-person contacts, conversation, and general sequencing. This information was compiled and matched against the information actually presented in the scenario for accuracy.

Because an advantage for the cognitive questioning format could be found due simply to the number of questions asked or questioning time, these two variables were computed from each tape-recorded interview for analysis. The protocols also were examined to isolate (1) instances where the individual components of the cognitive questioning appeared to be successful or to create problems, and (2) developmentally-inappropriate exchanges and different interview styles portrayed by the experienced detectives.

Aside from the issues related to cognitive interview, the protocols were examined for developmentally inappropriate questioning, instances where the interviewer appeared to be leading the children, and any performance differences that could be associated with extensive versus brief attempts at building rapport.

## Quantitative and Qualitative Results

The transcriptions of the taped interviews were quantified in terms of nine dependent variables: Number of correct facts, number of incorrect facts, accuracy rate, number of questions asked about the staged event, time taken to conduct the

investigative portion of the interview, frequency of usage of the cognitive techniques (in the cognitive interviews), number of leading questions asked, number of rapport exchanges preceding questioning, and number of developmentally inappropriate exchanges during questioning. The results were examined as a function of grade level (third or sixth) and the interview format condition (CC, RC, or RS). The results are presented in Table 1.

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Insert Table 1 here

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Number Correct Facts Recalled

Overall, the older children recalled significantly more correct facts than the younger children (50.81 vs 34.39), with $F(1,86) = 8.46$, $MSe = 90.47$, $p < .01$. The number of correct items remembered also differed as a function of the type interview format combination (CC=50.42, RC=42.13, RS=34.00), with $F(2,86) = 3.71$, $MSe = 90.47$, $p < .05$. A Tukey's post-test showed that all 3 conditions were significantly different from one another (all $ps < .05$). Cognitive interviews led to more correct facts recalled, and "practice" with the cognitive interview techniques further improved performance.

The interaction between Grade Level and Interview Format Condition was marginally nonsignificant statistically, with $F(2,86) < 3.00$, $MSe = 90.47$, $p > .05$. A formal power analysis revealed sufficient power to detect a significant interaction (.86). Inspection of the means in Table 1 indicated that there

TABLE 1

Performance in Sheriffs' Interviews as a Function of Interview Format Condition and Grade of Child Witness

| Performance Variable | Interview Format Condition: CC | | RC | | RS | |
|---|---|---|---|---|---|---|
| Grade => | 3rd | 6th | 3rd | 6th | 3rd | 6th |
| n => | 11 | 20 | 11 | 19 | 12 | 19 |
| Number Correct Items | 38.64 | 64.00 | 32.00 | 48.00 | 26.83 | 38.53 |
| Number Incorrect Items | 6.09 | 6.20 | 5.18 | 5.00 | 6.58 | 5.79 |
| Accuracy Rate | .86 | .91 | .86 | .91 | .80 | .87 |
| Total Questions Asked | 75.55 | 71.00 | 76.45 | 65.52 | 63.42 | 72.47 |
| Length of Questioning Phase (min) | 21.54 | 22.55 | 13.55 | 18.26 | 19.00 | 25.53 |
| Total Rapport Exchanges | 17.10 | 16.00 | 16.82 | 8.69 | 19.67 | 4.69 |
| Number of Leading Questions Asked | 1.73 | 1.60 | 1.73 | 1.58 | 2.00 | 1.83 |
| Number of Inappropriate Exchanges | 5.86 | 1.67 | 4.17 | 2.50 | 4.00 | 1.00 |

Note. "C"=full cognitive, "S"=full standard, "R"=rapport only.

were trends for the number of correct items recalled to be affected more by practice and cognitive interviewing for the sixth graders than for the third graders.

Number of Incorrect Items Generated

The difference in the number of incorrect items generated by the two age groups was not significant (5.67=sixth; 5.97=third), with $F(1,86) < 1.00$. This outcome is not consistent with the results of Geiselman et al., 1990) where somewhat fewer errors were committed by fifth graders than second graders. The age-related difference in number of errors observed by Geiselman et al., while reliable statistically, was only 1.65 items (constituting less than 10 percent of the children's recall). Therefore, that difference in number incorrect recall must be taken as unreliable given the current failure to replicate with children and interviewers from similar populations.

Also, the differences in incorrect item recall among the interview-format conditions were not significant (CC=6.16; RC=5.07; RS=6.10), with [$F(2,86) = 2.08$, $p > .05$, power = .78]; and this pattern held for both grade levels, with [$F(2,86) < 1.00$ (power = .89].

Accuracy Rates

As in the experiment conducted by Geiselman et al. (1990), the accuracy rates of the children's recall with the Sheriffs were remarkably high, with CC=88%, RC=89%, and RS=84%). These average absolute levels of accuracy provide another illustration of the capability of recollection by young children who are

interviewed by experienced law-enforcement personnel (Geiselman & Padilla, 1988, found 86% accuracy; Geiselman et al., 1990, found 93% accuracy).

Number of Questions Asked

The average number of questions asked did not differ significantly as a function of grade level (71.56=third, 69.66= sixth), with [$F(1,86) = 2.49$, $p > .05$, power = .81]. This non-significant trend for somewhat more questions being asked of the younger children is consistent, however, with that reported by Geiselman et al. (1990).

The number of questions asked did not differ significantly as a function of interview format condition, with CC=72.61, RC=69.53, and RS=68.97; nor did Grade Level interact significantly with Interview Format (both $F$s < 1.00). Thus, as in previous studies with adults (Geiselman et al., 1985; Geiselman et al., 1986) and with children (Geiselman et al., 1990), the greater number of correct facts remembered by the children with cognitive interviewing cannot be attributed simply to a greater number of questions asked.

Length of Interviews

Length of interview was computed as the total amount of time (in min) that the interviewer spent actually questioning the child about the "slide show" event. The average amount of time taken to complete an interview was statistically the same for both grade levels (sixth=22.75 min; third=18.03 min), with $F$ < 1.0, as was the case for the three interview format conditions

(CC=22.19 min, RC=16.00 min, and RS=23.05 min, with $F < 1.0$). However, the interaction between Grade Level and Interview Format Condition was not significant, with $F < 1.00$. Thus, as with the number of questions asked, a greater amount of time spent questioning the children cannot explain the effects of cognitive interviewing or practice with cognitive interviewing on recall performance.

Evaluation of the Individual Cognitive Techniques

It has been apparent from the results of all three studies conducted in this laboratory with children (Geiselman & Padilla, 1988; Geiselman et al., 1990; and the present investigation) that a special form of cognitive interviewing is required for use with children. The differences pertain both to the manner in which the techniques are presented and monitored by the interviewer, and to the interpretation of the information obtained from the child.

First, however, an analysis was conducted on the frequency with which the interviewers in the present study made use of each of the four general cognitive techniques: Reinstatement of Context, Be Complete, Reverse Order, and Change Perspectives.

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Insert Table 2 about here.

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The percent usage values are presented in Table 2. The statistical analysis, which was conducted without regard to any assessment as to the success of the techniques, showed that the

TABLE 2

Percent Use of the Four General Cognitive Interview Techniques as a Function of Interview Format Condition

| Interview Technique | Format/Interviewers | | |
|---|---|---|---|
| | CC/Students "practice" | CC/Sheriffs "target" | RC/Sheriffs "target" |
| Reinstate Context | 100 | 71 | 52 |
| Be Complete | 81 | 60 | 41 |
| Reverse Order | 100 | 68 | 64 |
| Change Perspectives | 100 | 50 | 26 |

Note. "CC"=practice cognitive, target cognitive; "RC"=practice rapport only, target cognitive.

student interviewers were more likely to carry out the components of the cognitive interview during the "practice sessions" (about the waiting room) than were the Sheriffs during the target cognitive interviews (about the slide show), with CC/students = 95%, CC/Sheriffs = 63.25%, and RC/Sheriffs = 44.50%. This pattern of results indicates that both the population of interviewers and the child's prior practice with the cognitive interview affected the usage of the cognitive interview techniques.

Thus, while it is acknowledged that the students interviewed the children about a different event than the Sheriffs, a major concern continues to be the lack of use of the cognitive techniques by some experienced detectives. The present training consisted of a 5-page mailer, a 2-hr lecture-style presentation, followed by a phone conversation and "reminders" at the school sites. An instruction to utilize each of the four general techniques at least once during each cognitive interview was given special attention. The only difference between our training program and that of Fisher et al. (1987), where greater compliance was obtained, was an individual, video-taped practice interview that was critiqued by the experimenters. Perhaps this portion of the training is crucial for full compliance, and individualized instruction is suggested for implementation in future studies of this type.

The difference between the CC and RC conditions with the Sheriffs suggests that the children were more likely to elicit

the Sheriff's use of the cognitive techniques or that the children were more likely to spontaneously use the techniques when they had received prior practice with the techniques from the students. Evidence for the latter possibility was apparent in one Sheriff's interview of a sixth grader in the CC condition, where the child spontaneously said "And now we will go backwards, right?"

The lack of uniformity in the use of the cognitive methods by the Sheriffs provided us with a unique opportunity to establish further support for the claim of Geiselman et al. (1986, Experiment 2) that each of the four general methods has the potential for making contributions to the overall success of the cognitive interview method for interviewing witnesses. A chi-square was computed for each of the four cognitive methods, between whether or not that method was used during the interview and whether the number of correct facts obtained was above or below the average score (39.5). Data from the Sheriffs' interviews in both the CC and RC conditions were combined to increase the sample size to 36 subjects per analysis. The use of the cognitive methods was consistently associated with higher memory performance scores. The chi-square results are as follows: Reinstate context [$X^2(2)=6.42$, $p < .05$], Be complete [$X^2(2)=7.08$, $p < .05$], Reverse Recall Order [$X^2(2)=3.95$, $p < .05$], and Change Perspectives [$X^2(2)=3.53$, $p < .05$]. Thus, as concluded by Geiselman et al. (1986, Experiment 2), the available evidence suggests that each of the four general cognitive methods

exhibits the potential for increasing the amount of correct information gained from a witness.

An evaluation of the success of each component of the cognitive interview was conducted both in terms of the child's understanding or willingness to carry out the technique, and in terms of any traceable effect of the technique on recall performance. This evaluation was conducted to provide guidance toward refining the suggested instructions for using the cognitive procedures that were presented in the present Method section. While some modifications are suggested, the authors wish to remind the reader that the cognitive interview for children used in the present experiment led to significant improvements in the number of correct items recalled in comparison to standard procedures. Collapsing across grade levels, the percent improvement over standard procedures was 18 percent with prior rapport development only, and was 45 percent with prior experience with the full cognitive interview. These figures probably are under-estimates of the potential of the full cognitive interview given that most of the Sheriffs did not routinely utilize all of the techniques that comprise the cognitive interview procedure.

Reconstruction of the Circumstances. The reinstate context technique was used in all of the practice cognitive interviews conducted by the students; but it was used in only 60 percent of the cognitive interviews conducted by the Sheriffs. Its use was significantly associated with the number of correct facts

obtained from the children in the Sheriffs' cognitive interviews. Otherwise, the effect of this procedure on recall is not immediately identifiable in the protocols, given that it applies throughout the interview format where other cognitive methods were employed.

The language used by both the student interviewers and the Sheriffs to present this technique was relatively comparable to that suggested in the present Method section; and this language was used with the children from both grade levels. However, most of the Sheriffs who used the mental reinstatement method asked the child to close their eyes; whereas only one of the student interviewers routinely asked the child to close their eyes. No research has been conducted, to our knowledge, to determine whether closing the eyes has any effect on the success of the technique, either with adults or children.

Be Complete. The "be complete" technique was used in 80 percent of the "practice" cognitive interviews conducted by the students; but it was used in only about one-half of the cognitive interviews conducted by the Sheriffs. When it was used, it was presented in language identical to or similar to that given in the present Method section. Its use was significantly associated with the number of correct facts generated in the Sheriffs' cognitive interviews; and just as important, its use was not associated with more incorrect items generated. As noted by Geiselman et al. (1990), asking children to give even little details did not lead to more errors in an attempt to comply with

the interviewer ($r$ = -.14).

The practitioner should remember, however, to also include the interview preparation instruction which states that it is better to say "I don't know" than to make something up. If a child should react to the "be complete" technique with errors during the practice cognitive interview, these errors should be met with challenges, such as "Are you really sure that that is what happened? Remember, it's okay to say I don't know." One purpose for the practice session, where most of the correct information is known to the interviewer, is to identify and correct any misconceptions that the child may have about the cognitive techniques. The students challenged approximately one-fourth of the children who made obvious errors during the practice cognitive interviews in the present experiment.

Reverse Order. This technique was used in all of the "practice" cognitive interviews conducted by the students; and it was used in about two-thirds of the cognitive interviews conducted by the Sheriffs. Its use was significantly associated with the number of correct facts generated in the Sheriffs' cognitive interviews. In cases where the reverse order technique was used, 44 percent resulted in new information, 79 percent of which was correct.

Most of the Sheriffs followed the instruction to continually prompt the child with "What happened right before that," so as to avoid giant leaps backward in time by the child. The children in the study by Geiselman and Padilla (1988) tended to make grand

leaps backward such that no new information was obtained, only the highlights that had already been recalled. Thus, the use of repeated prompting in the reverse-order procedure is one exception to the general rule that unprompted recall is preferable to relying on more specific questions (Dent, 1982; Fisher, et al., 1987).

The following excerpt provides a good illustration from one Sheriff's interview with a sixth grade child, where several bits of new, correct information were obtained with precise prompting, mainly about what was said during the event (D=detective, C=child).

D: "Okay. Now Janice, I think I understand exactly what happened when you were watching the pictures. Can you... have you ever told a story backwards? Can you tell me backwards what happened from the time the man walked out of the room with his backpack? Can you tell me what happened backwards? Do you understand what I mean?"
C: "He walked out."
D: "Okay. Just before he walked out of the room, what did he do?"
C: "He plugged the thing back in."
D: "Right before that, what did he say or do?"
C: "He was just talking to the lady that he had signed up first and that was really rude of her."
D: "What did the lady say?"
C: "She said, I know that wasn't very nice of me. I am really sorry."
D: "Oh. What did the man think about that, what did he say?"
C: "I forgot."
D: "Do you remember what the lady said. Did she say anything else?"
C: "She said, she wanted to finish the movie. She was right in the middle."
D: "Okay. And then right before that what happened?"
C: "We walked in."
D: "You walked in and right before that what happened? Where were you or what was happening?" [Note. At this point the interviewer continued to elicit more information using this relatively open-ended question. The child had just made a grand leap backward in time, but quickly returned to the slide show.]

Change Perspectives. This technique was used in all of the "practice" cognitive interviews conducted by the students; but it was used in only about one-third of the cognitive interviews conducted by the Sheriffs. Its use was significantly associated with the number of correct facts generated in the Sheriffs' cognitive interviews. In cases where the change-perspectives technique was used, 75 percent resulted in new information, 86 percent of which was correct.

Geiselman and Padilla (1988) reported some difficulty with this technique in that it generated errors, especially with younger children; but their findings could be attributed to the inappropriate use of the terms "pretend" or "imagine" in introducing the procedure to the children. The two lead-in procedures used here were either the one suggested by Geiselman et al. (1990) to "Put yourself in (the other person's) body," or to "Look through (the other person's) eyes." Either of these two methods for introducing the change-perspectives technique appeared viable for use with either the third or sixth graders. For example, "Picture that you are in Teri's body, so that you see everything from her viewpoint; and tell me everything she is seeing and how she feels, what she smells..." Following the child's response, this interviewer remarked, "Now be the angry person and look at Teri and tell me how she looked."

As a precautionary measure, the Sheriffs were instructed to utilize this procedure only at the end of the interview. Nevertheless, those who attempted the change perspectives

procedure earlier in the interview were no more likely to elicit errors than those who followed the guidelines. Thus, with developmentally appropriate descriptions of the change perspectives technique, the present data suggest that the major change that remains to be made is more or different training for the detectives to ensure that they attempt to utilize this technique with children. Practice with role playing and receiving feedback could correct this problem.

The following is an excerpt from an interview by a Sheriff with a sixth grade child. Six bits of new, correct information were generated. Notice that the interviewer reliably responds to the child with either the child's own words, or some acknowledgment that he (the interviewer) is attending to what the child is saying. The acknowledgment is expressed as "right," "okay," "I see," etc. Also, the interviewer expands on the change perspectives technique not only by going through the chain of events in a systematic manner, but also by taking the child through how the other person was feeling during the events. This dove-tails nicely with the context reinstatement technique.

D: "Now let's try it another way. Lets put ourselves in the position of being that lady. Ok? and, like, look at things through her eyes. Where was she standing when you came in the room?"
C: "She was sitting on the table."
D: "Sitting on the table? At the side or the front or the back?"
C: "Like, right here on this part, on the side."
D: "On the side. Okay. So now you be her, looking through her eyes, and she's seeing you guys coming in the room. Tell me what she sees all the way through. Like if you were her."
C: "She sees us coming in, then she sees us sitting down."
D: "Right."
C: "Then she sees us talking."

D: "Right."
C: "Then she sees us watching the slides."
D: "Okay."
C: "Then she sees the man coming in."
D: "How does she see him." [Note. This is an excellent example of an open-ended question, as opposed to breaking the child's train of thought with something more specific.]
C: "She sees him, like, through a big curtain."
D: "Right."
C: "And she sees him coming in from that way."
D: "Okay."
C: "And then she sees him go around the table and turn off the slides."
D: "Right. He turned off the slides, eh?"
C: "Well, he pulled out the plug."
D: "Oh."
C: "Then she sees him pick up the thing to take it."
D: "And?"
C: "Then she gets it and puts is back and they argue. Then she sees him leave."
D: "Right."
C: "Then she sees us watch the slides, then she sees us talking to her, then she sees the slides turn off."
D: "All right."
C: "Then she sees the lady come in to get us. Oh, before the lady came in, she sees us get the little things."
D: "I see."
C: "Then she sees the lady come in, then she sees me."
D: "Okay, good. So you remembered a couple more things by looking through her eyes, didn't you. Pulling the plug out and stuff; I didn't know that. Okay, well let's do this then. Let's still look at things through that lady's eyes, but this time tell me how she feels, you know, emotions. How does she feel as things are happening."
C: "First, when she comes in, I think she feels happy that we're there."
D: "Okay."
C: "Then, when the man comes in, I think she feels worried."
D: "Worried, okay. Does she change her feelings, or do they stay the same?"
C: "Then, when we leave, she's happy again."
D: "What was she worried about?"
C: "About the man taking the slide machine."

Specific Retrieval Techniques. Only two of the specific cognitive techniques were utilized in the Sheriffs' cognitive interviews: The first-letter name mnemonic and asking the child if (one of the people mentioned) reminded them of someone they

know. Each of these specific techniques appeared in approximately one-half of the Sheriffs' cognitive interviews; and, as with the general cognitive procedures, most typically these techniques either led to the retrieval of new, correct information or they had no effect on recall performance.

While the design of the present study did not include a formal experiment on name recall with children, recall for the names of the research assistants who participated in the slide-show scenario followed the same pattern as recall for other information from the scenario. More sixth graders recalled a name than third graders (59% vs 32%); more children remembered a name with cognitive interviewing than standard interviewing (RC=30% vs RS= 8%); and more children remembered a name when the cognitive interviewing was preceded by practice than without practice (CC=67% vs RC=30%). An incorrect name was given during approximately one-fifth of the interviews; and the frequency of name recall errors was unrelated to grade level or the interview format condition.

The name recall mnemonic became problematic when the interviewer failed to explain to the child, in a developmentally appropriate manner, that going through the alphabet is a unitary process, not a series of questions requiring an answer for each letter. When each letter was presented as a separate question, the child most typically became frustrated, demoralized, or appeared to make up any name to end the process.

In most of these cases, the children became mute and visibly

embarrassed by the time the letter "G" was reached. Given that, on some occasions the sought after name was "Tina," the intended effect of the name-recall method was impossible to achieve; and, more importantly when this occurred, the children appeared less interested in trying their best to recall other information. In the worst possible scenario, one child offered a name that happened to be incorrect in what appeared to be an attempt to stop the on-slought of questioning.

D - "Okay. Okay. Did he say his name was so-and-so, right?"
C - "Yeah."
D - "What did he say his name was?"
C - "I don't know."
D - "You forgot? Did he say his first name or his last name?"
C - "His first name."
D - "His first name. Did his first name start with an 'A?'"
C - "I don't remember."
D - "Did his first name start with a 'B'?"
C - "I don't remember."
D - "Did his first name start with a 'C'? Did his first name start with a 'D'?"
C - "I think he said his name was David. I think."

On the basis of such exchanges, it is suggested that the first-letter technique be presented as a unitary method for remembering a name. One strategy for accomplishing this is to emphasize to the child that "going through the alphabet to look for the first letter often helps you to remember someone's name, but this maybe will take some time and it is okay if you go through the whole alphabet and the name doesn't come to your mind."

As a more positive example, consider how another interviewer utilized the first-letter, name-recall technique.

D - "What letter do you think his name started with?" (At this point, the detective gave the child some time to think.)

C - "With H." ('H' was correct)
D - "You think his name started with an 'H'?"
C - "Yeah."
D - "Was that his first name or his last name?"
C - "I think it was his last name. I don't remember?"
D - "You don't remember. Okay. I'll tell you what. If you happen to remember his name later on, I want you to stop, stop me and tell me you remember his name. Okay? And tell me his name is so-and-so. Okay? Alright."

Notice that this detective allowed for the child to feel in control so as to not lower the child's self confidence. Later on, the detective asked the child, "Okay, now do you remember his name yet?" Although the child happened to answer "No" on this occasion, the general approach taken by the interviewer seemed to maintain the child's attention span in other areas such that the interview, overall, was a successful one.

The other specific technique that was used in approximately one-half of the Sheriffs' cognitive interviews was "Did he/she remind you of anyone you know?" One sixth-grade child remarked: "He reminded me of this surfer guy I knew: He did weird things like being hyper; he moved around all the time. He wore ear rings, two of them in the same ear; and he had a scar on his arm." All of this information was correct. No instances appeared in the interview transcripts where the generation of incorrect information could be linked directly to this procedure. When the procedure was used, 67% of the children responded that (the person in question) did not remind them of anyone they know.

Leading Questions

As has been observed to be the case in previous experiments reported by Geiselman et al. (1985) with adults, and with

children (Geiselman et al., 1990), the law-enforcement professionals employed here produced few instances where the questioning could be considered as clearly leading the witness. A leading question was defined as a question asked by the interviewer that contained information that was both germane to the staged event and had not been mentioned previously by the child during the interview. One example of a leading question is "Did this happen yesterday or the day before?" instead of "When did this happened?" On average, only 2.77 percent of the questions asked of the children were considered to be clearly leading; and, for the most part, these questions seemed fairly innocuous. (The readers can judge this latter point for themselves, given the representative sample segment presented below.)

As is suggested by inspection of Table 1, neither the main effect of interview format procedure [$\underline{F}(2,86) = 1.19$] nor grade level were significant [$\underline{F}(1,86) = 1.06$]; and these two factors did not interact significantly with one another [$\underline{F}(2,86) = 1.11$]. The number of leading questions asked was not correlated with any of the other interview-related variables measured, such as number of correct or incorrect items generated, number of questions asked, questioning time, or number of rapport exchanges.

One questioning tactic suggested by Dent (1982, p. 288) to further avoid asking leading questions is to "refrain from forming a strong preconceived impression about what happened in the incident based on minimal prior information," and "avoid

heavily structuring the interview so that information not specifically requested is rejected, at least until its relevant slot occurred." The following sample segment from one of the present interviews illustrates how prior knowledge (in this case from other children) can produce an exchange where the interviewer essentially provides all of the information obtained. The information provided independently by the interviewer is placed in italics.

D - "Okay now. Do you recall when you saw the presentation of the pictures of California?"
C - "Yeah. I remember."
D - "And who took you there?"
C - "The lady who brought me here."
D - "And were there any other children?"
C - "Yeah."
Later on...
C - "The guy acted mean."
D - "They started arguing. Okay. Were they yelling at each other?"
C - "What?"
D - "Was he mad?"
C - "Yeah."
D - "Was he yelling at her?"
C - "Yeah."
D - "Alright, was she yelling at him?"
C - "Yeah."

Number of Exchanges on Rapport Development

It is important to note that the following analyses refer to the rapport-development phase of the Sheriffs' interviews, not to rapport development carried out by the student interviewers during the practice sessions.

The Sheriffs engaged in significantly more rapport development exchanges with the younger children than with the older children (17.86 vs 9.79), with $F(1,86) = 34.40$, $MSe = 28.80$, $p < .01$. A nearly identical age-related difference in the

number of rapport exchanges was reported by Geiselman et al. (1990) for second versus fifth graders. Thus, these experienced Deputies acknowledged the need for greater rapport development with younger children.

Perhaps just as important, the number of rapport development exchanges was highly and negatively associated with the number of incorrect items generated during standard interviews ($r = -.87$, $df = 29$, $p<.001$). That is, more complete rapport development between the child and the Sheriff was associated with fewer erroneous statements made by the child during a standard interview. This outcome runs contrary to any suggestion that rapport development between the interviewer and child reliably leads to greater confabulation by the child to please the interviewer. No significant relationship was observed between the extent of rapport development in either the CC or RC conditions and the number of incorrect items generated during cognitive interviews.

Dent (1982, p. 289) also noted a significant positive relation between the degree of rapport development and interview success with young children, as measured by several dependent measures. Saywitz (1988, p. 16) further acknowledged the importance of rapport development because children, like adults, often are nervous in an interview situation, and a child's anxiety can interfere with the overall success of the interview.

Rapport Development Techniques

The rapport development statements used by the Sheriffs

were classified according to the four general content categories suggested by Geiselman et al. (1990): 28% were School-related, 41% were Personal-related, 13% were Interview-related, and 18% were Family-related.

The four most frequently observed statements from each category are listed below. These techniques are offered here as suggestions for the practitioner who may be less experienced in working with children than the veteran detectives employed here.

1. School-Related:
   a. "What grade are you in?"
   b. "What is your teacher's name?"
   c. "What is your favorite subject?"
   d. "Have you been at this school a long time?"
2. Personal-Related:
   a. "What is your name?"
   b. "How old are you?"
   c. "What are your favorite things to do?"
   d. "Do you have some friends (names)?"
3. Interview-related:
   a. "Do you know why you are here today?"
   b. "Do you mind if I pin this (microphone) on you?"
   c. "Do you want to help me?"
   d. "You are not being tested here"
4. Family-Related:
   a. "How many brothers/sisters do you have?"
   b. "Are your brothers/sisters older or younger than you?"
   c. "What is your brother's/sister's name?"
   d. "Do you like your brothers/sisters?"

Inappropriate Questioning

There are some methods for interviewing a victim or witness that logically and/or empirically are inappropriate, both for adults (Fisher, Geiselman, & Raymond, 1987) and for children (Geiselman et al., 1990). These methods include interruptions by the interviewer, use of developmentally inappropriate language, overly persistent questioning, "rapid-fire" questioning (not allowing the child to answer one question before asking another),

building unrealistic expectations for the child, and not attending carefully to the children's answers. Instances of these inappropriate questioning exchanges were identified by research assistants who were blind apriori as to the grade level of the children.

Rapid-fire questioning is a poor technique with adults (Fisher, Geiselman, & Raymond, 1987) and as well as with children (see the derived guidelines from Geiselman et al., 1990). In this form of questioning, a series of questions is asked, sometimes within a single sentence, without allowing for a single response from the child. For example, "What about, um, was he tall, thin, dark?" This could not only confuse the child, but could indicate to the child a lack of interest and enthusiasm for what he/she has to say (Geiselman et al., 1990). In one interview, for example, rapid-fire questioning led the child to become silent, to which the interviewer remarked "Ha, ha. You can't remember anything, can you?" Such an approach would logically be inhibiting to either an adult or a child.

There were several other instances where 3 or 4 questions were clustered together prior to allowing the child to respond to any one of them, such as, "Did you see some pictures on California? Did you see any pictures? Do you remember the lady that just came into the room that brought you here? Did she have an opportunity to talk with some other children?" The child responded, "I don't know." In the worst possible scenario, some children eventually offered a seemingly random response to one of

the embedded questions simply to stop the on-slought of questions. This occurred especially often when the interviewer used the first-letter, name mnemonic inappropriately, as described below, where the child was led to view each letter in the alphabet as a separate question to which the answer was "No."

Overly persistent questioning when the child has claimed and re-affirmed that they do not know the answer to a question also could be demoralizing. Sometimes, questioning that is not intended to be overly persistent is perceived as such by a child; thus, some of the interviewer's attention must be devoted to the child's frame of mind throughout the course of the interview (Frederick, 1990). As noted by Geiselman et al. (1990) and in the present instructions to the interviewers, a general rule of thumb is to drop a topic after receiving three "I don't know" responses in a row, and go on to something that the interviewer feels the child definitely can answer with confidence.

Suggesting that the child should know the answer to a question, when they may in fact not know the answer also is especially inappropriate for children. In one interview, for example, the child was told "Girls usually remember a lot about hair styles. What kind was hers?" This approach creates a "no win" situation: If a response is obtained, then the origination of the answer would be questionable due the demand characteristics created; and if no response is obtained, then the child likely would be led to feel "different" than other girls.

On some occasions, the interviewers failed to listen

carefully to the children's answers. In one case, the interviewer inadvertently altered the current child's report such that it was consistent with the reports of children interviewed previously. The child referred to one of his fellow students as "Fred," but the interviewer repeated and recorded the name as "Frankie," which was correctly obtained from a child interviewed previously.

Finally, as noted by Saywitz (1989), Saywitz et al. (1990) and others, young children sometimes do not understand the meaning of certain words used in a question; but they attempt a response anyway without asking for clarification. Examples of words that perhaps are of this type from the present interviews include: "overview," "satchel," "prescription glasses," and "awning." As can be reviewed in the Method section above, it is suggested that part of the interview preparation instructions include a discussion with the child that "It is good to let me know when to I ask you anything that you don't understand; and I will ask you again in new words."

A statistical analysis showed that the number of instances of inappropriate questioning per interview did not differ significantly as a function of the type of interview format [$F(2,86) = 1.45$, $p > .05$]; but such instances were more apparent with the third-grade children (4.68) than with the sixth-grade children (1.72), [$F(2,86) = 11.24$, $MSe=7.37$, $p < .01$]. This age-related difference in inappropriate questioning may be related to the smaller number of items generated by the third graders, thus

providing a greater impetus for questionable interview procedures to be used by the interviewer. The scoring was conducted by research assistants who were blind as to the grade of the children; and it seems unlikely that the interviewers would have intentionally treated the third graders with less care than the sixth graders.

Interview Styles and Performance

Examination of the transcripts suggested that each of the interviews could be classified according to one of three interview styles as described below. The authors chose to label the three clusters as "condescending," "ambivalent," and "positive." The three-way classification was carried out by two members of the research team, working independently, on the basis of general impression as well as several objective measures. The objective measures of interviewer style were the number of instances of: Interruptions (condescending or ambivalent), repetition of questions close in time (condescending), question strings without allowing for answers (i.e., condescending, rapid-fire questioning), confused exchanges (ambivalent), questioning geared to expand upon information given (positive), and verbal reinforcements for effort and other verbal assurances (positive). The relative frequency of these indicators, along with the overall subjective impressions by the two evaluators, were used to classify each interview.

Condescending. In some interviews, the interviewer conveyed to the child that he/she did not have any faith in the child's

responses such that the child was made to feel inadequate. For example, one interviewer remarked, "You say his name is David. Are you sure his name is David? How do you know his name is David?" The child replied "I don't know." Another reliable characteristic of a condescending interview was the repetition of questions close in time. As noted by Geiselman and Padilla (1988), repeating the same question several times often suggests to the child that the interviewer does not like the answer that already has been offered. Similarly, if it is apparent that the child does not know the answer and the interviewer continues with the same line of questioning, then the child will likely feel inadequate. The child may become embarrassed that he/she is unable to answer the question and this could lead to a tendency for the child to become silent or to make errors. Rapid-fire questioning also is characteristic of this type of interview; and fact finding is limited due to the interviewer's restricted focus on a few specific facts, rather than to expand on the information that is provided by the child. Condescending interviews also contained frequent interruptions of the children such that they were not allowed to finish one response before moving on to another area for questioning. These interruptions contained direct queries by the interviewer which most typically were repetitions. This is in contrast to interruptions made during interviews which were classified as ambivalent, where the interviewers' utterances indicated a lack of attention or interest.

Ambivalent. Some interviewers conducted the questioning of the children as if they did not care and were rather bored with conducting the interview. When the interviewers did not seem interested in what the children had to say, the children were not enthusiastic to put forth effort to respond. The primary concern of the ambivalent interview lies with completing the interview rather than gathering complete and accurate information. As in the condescending interviews, ambivalent interviewers failed to expand on the information given by the child and frequently interrupted the child's responses. For example, in one ambivalent interview the child volunteered that a man entered the room, but the interviewer failed to expand upon that information with any further questions about the man. When the children stated "I don't know," the ambivalent interviewers typically responded "Doesn't matter;" and the interruptions usually indicated a lack of attention or interest by the interviewers (e.g., "Uh huh," "Okay," or "And then...").

Another common characteristic of the ambivalent interview consists of posing three or more questions at once. When direct questions were asked, they frequently were posed in a cluster to which the child responded to only one item. For example, "Do you remember what he was wearing? Do you remember...lets see, what color his hair was?" The following exchange demonstrates the problems affiliated with interviews when more than one question is asked in a single exchange.

D - "Okay, and was she wearing anything else that you remember? Was she fat or thin?"

C - "She was thin."
D - "Skinny huh? Okay and was she white, black, or latin, or do you know?"
C - "Kinda white."
D - "He was white. Okay, how about his face, did you see his face? Did he have any hair on his face or jewelry? Did he have earrings like you or a beard or a mustache or you don't remember?"

The interviewer never returned to the female's clothing. In addition, in the rush to terminate the interview, not only were multiple queries made in a single exchange, but leading questions can be identified in the last exchange. These exchanges gave the impression that the interviewer would like to finish the interview as soon as possible and leave; and hence, ambivalent interviews showed a low level of productivity and typically were no more than 10 min in length (the average interview length across all interviews was over 20 min).

A brief rapport session also marked a serious flaw in the ambivalent interviews. In one interview, the interviewer made only three exchanges during the rapport phase with a child who appeared extremely nervous. When this child was asked to report everything he had seen, he responded by saying, "I didn't see anything." The "positive" interviews (discussed below) averaged between 10 and 15 exchanges over a span of approximately 5 min, whereas the ambivalent interviews averaged between 5 and 7 exchanges over a span of approximately 1.5 min.

In addition, ambivalent interviewers frequently appeared confused and sometimes expressed their confusion to the children, which in turn resulted in confusion from the children.

Positive. As an alternative to the condescending and

ambivalent approaches, the "positive" interviews contained effective rapport development with the children and the interviewers appeared interested in the responses given by the children. The children were made to feel important and received much verbal reinforcement for their efforts, such that they appeared at ease and comfortable with their responses. For instance, "Okay, I'm going to ask you some more specific questions, and I think you're gonna do real well on this because you're coming across with everything on your own mostly." Another example is "Oh, see, I didn't know that. See, I'm learning something." When the child stated "I don't know," the interviewer typically gave the child a positive response, i.e. "It's okay...Maybe you will remember later."

Before proceeding from one topic to another, these interviewers expanded on the information that the children had reported with related specific or open-ended questions. This procedure is in contrast to the ambivalent and condescending approaches, which frequently exhibit one- or two-word responses from the interviewer such as "Okay" or "Right." In the cognitive interviews that were conducted in a positive manner, some of the techniques such as change perspectives were repeated in new ways (from different perspectives) to gain new information. With the elaborative questioning, however, the positive interviewer did not dwell on the fact that the child could not remember a certain fact, but rather went on to a new area, perhaps returning to the not recalled fact later. For example, one interviewer remarked,

"Okay, and you already told me you didn't remember the lady's name; but you said she gave you something to go on top of pencils. Can you describe those for me?"

Thus, the positive interview approach was characterized as non-interruptive, expansive, and confidence building for effort. It was important to assess whether these techniques were effective for enhancing the number of correct items recalled and minimizing the number of incorrect items recalled, as compared to the condescending and ambivalent approaches.

Performance Differences Associated with the Three Interview Styles. The percentage of interviews that fit within each of the three styles was approximately equivalent. Three two-way analyses of variance were conducted on the number correct, number incorrect, and number of questions dependent variables, with the between-subject factors being interview style and grade level. Each of the three analyses showed a significant effect of interview style. For number correct, $F(2,86)=3.84$, $p<.05$; for number incorrect, $F(2,86)=3.23$, $p<.05$; and for number of questions, $F(2,86)=4.01$, $p<.05$. None of the analyses showed an interaction between interview style and grade level (all $F$s$<1.0$). Thus, the descriptive results are presented in Table 3 collapsed across grade level.

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Insert Table 3 about here.

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Ambivalent interviews yielded the least amount of

TABLE 3

Performance as Function of Interview Style

| Interview Style | Percent Interviews | Number Correct | Number Incorrect | Number of Questions |
|---|---|---|---|---|
| Ambivalent | 31% | 33.75 | 4.00 | 39.90 |
| Condescending | 38% | 45.20 | 7.00 | 87.60 |
| Positive | 31% | 68.50 | 7.50 | 77.75 |

productivity, with the fewest questions asked by the interviewers and the fewest items generated from the children (either correct or incorrect, *p*s<.05). In contrast, condescending interviews contained roughly twice as many questions as the ambivalent interviews (*p*<.05); and they generated significantly more information, both correct and incorrect (*p*s<.05). Thus, replacing ambivalence with condescending questioning resulted simply in greater productivity from the children.

Interviews conducted in the positive style, as described above, reliably produced more correct items than condescending interviews (*p*<.05), without a significant difference in the number of incorrect items or the number of questions asked. The positive interviewers asked more questions than the ambivalent interviewers (*p*<.05); but these questions were used to expand upon what the children reported voluntarily, rather than to engage in overly persistent questioning about a small number of details. As an illustration, performance data for one interviewer who reliably used the positive approach was compared with performance data for another interviewer who reliably used the condescending approach. These two interviewers asked the same number of questions on average (120); but the interviewer who used the positive approach generated nearly twice as many correct facts (89) than the interviewer who used the condescending approach (46).

## Conclusions

### Cognitive Interviewing with Children

The development and evaluation of innovative interview procedures for use with child witnesses and victims has relevance throughout the legal system. First, the amount of information a child remembers about an event will likely affect the success of the investigations phase of the legal process. The more complete the eyewitness account, the more probable the case solution (Rand Corporation, 1975). Second, the completeness of a child's report affects jurors' perceptions of the credibility of the child as a witness (Goodman, Golding, Helgeson, Haith, & Michelli, 1987). In both regards, the cognitive interview (and prior practice with the cognitive techniques) was found here to enhance the number of correct bits of information recalled by children to a statistically significant degree. This effect was observed for both third graders and sixth graders.

The accuracy of children's reports also affects all phases of the legal process. Incorrect information creates false leads that take over-worked investigators down the "garden path," wasting valuable resources and time. Even more important, erroneous information from a witness has the potential to result in a miscarriage of justice (Loftus, 1979; Loftus & Davies, 1984). Again, in both regards, the cognitive interview was found here to have no effect on the amount of incorrect information obtained from children; the increase in correct information was obtained at no cost. This was observed for both third graders

and sixth graders.

Effects of Practice Interview Sessions

The main purpose for this study was to evaluate the effect of a practice cognitive interview on children's recall performance during a later interview. One conclusion that can be drawn from this study is that it is indeed advantageous for a child to have some practice with cognitive questioning about an irrelevant event prior to receiving a cognitive interview about the event of legal importance. This was observed to be especially the case for the sixth graders as compared to the third graders. Bottoms et al. (1989) reported a similar effect of practice on the improvement of later line-up identification performance by children, where an age-related trend also was observed. Practice could serve any of three purposes: It potentially clarifies the methods to be used in the later interview; it encourages the child to use the techniques spontaneously, such that more of the techniques are used; and it gives the child experience with the usually unfamiliar task of being interviewed about their episodic memories for an event by an unfamiliar adult.

At first glance, the recommendation in favor of practice interviewing creates a dilemma. It has been emphasized elsewhere that victims and witnesses of child abuse must undergo several interview sessions regarding the alleged criminal act; and that this opens the door for numerous psychological and legal complications. MacFarlane (cited in Cody, 1989), for example,

has estimated that some victims of child abuse are asked to retell their story to as many as 15 different parties. The "practice" interview could be seen as just another interview session for the child.

On the other hand, with a more complete report from the child early on in the process (due to more effective interview techniques), less time should be required for interviewing the child overall. In the present study, the most complete reports about the target event were obtained from children who were given practice cognitive interviews about an unrelated event. The practical implication is that children who are witness/victims could receive practice at being interviewed without necessitating the child to retell frightening or anxiety producing experiences for the currently-required (or accepted) number of times (Cody, 1989). Minimal additional time and personnel would be necessary to carry out a "practice interview" phase by any agency connected with interviewing children, and the apparent positive impact on the target interview seems well worth the expense.

Interview Styles

Three general styles for questioning children were identified in the interviews conducted by the experienced detectives. These were labeled as condescending, ambivalent, and positive. The style in which an interview was conducted was associated in systematic ways with recall performance of the children. Condescending interviews produced significantly more information through more persistent questioning, but at the cost

of eliciting more incorrect information. In contrast, the interviews that were classified as positive produced more correct information without an increase in errors. This was accomplished by the interviewer expanding upon what the child reported, without dwelling on a small number of isolated facts. Showing an interest in what the children had to say, maintaining a high level of attention, and praising the children for their efforts were key components of the successful expansion process. These components distinguished the positive approach from the less effective condescending interview.

Age-Related Differences

As noted in the sections above, few age-related differences in performance were observed. Four differences that were observed are as follows: (1) The older children recalled more correct information regardless of how they were interviewed by the Sheriffs (cognitive or standard). (2) Practice with cognitive interviewing increased the likelihood that each of the components of the cognitive interview would be used and increased correct recall with children from both grade levels; but the effects of practice were more pronounced with the sixth graders than the third graders. (3) A significantly greater number of rapport development exchanges occurred during the interviews with the third graders than with the sixth graders. (4) A significantly greater number of exchanges judged to be developmentally inappropriate were found in the interviews with the third graders.

Taken together, these four findings suggest that cognitive interviewing, especially with prior practice, was preferable to standard interviewing, where little memory guidance was provided by the interviewer; but that these procedures were more productive with sixth graders than third graders. An opposite age-related trend would have been plausible, given that the younger children should have required more memory guidance and practice. The Sheriffs acknowledged that the third graders required more work than the sixth graders in that the younger children received more rapport development exchanges before the questioning began. Perhaps in response to the younger children's lesser recall, however, the Sheriffs were less careful to conduct the questioning in a developmentally appropriate manner, as evidenced by the greater incidence of inappropriate questioning with the third graders.

One null finding with far-reaching implications for the evaluation of testimony from children at different age ranges is the lack of any significant age-related differences observed in the number of incorrect items generated. Statistically, on average the third graders in this experiment made no more errors than the sixth graders. This outcome (which, of course, is restricted to the age levels studied here) is especially interesting given the lack of any significant age-related differences on other major interview-related variables, such as questioning time and the absolute number of questions asked of the child about the event. One might have predicted that,

because of shorter attention spans, the younger children would generate more incorrect items if the interviewer asked the same number of questions or questioned the child for the same period of time as older children. It must be noted with some caution, however, that the absence of an age-related difference in errors has not been found reliably in some previous experiments similar to the one reported here. Geiselman et al. (1990), for example, found second graders to make significantly more errors than fifth graders when being interviewed by experienced detectives about a live, staged event. The absolute difference, however, was small, with less than ten percent errors from either age group.

Practical Implications

The results of this study support the idea that practice with cognitive interviewing about some irrelevant event prior to a cognitive interview for a targeted event significantly improves recall performance with children. Practice, as well as cognitive interviewing without practice, was particularly effective for the 11-to-12 year olds studied here. The 8-to-9 year olds also showed a significant increase in correct recall with cognitive interviewing and practice, but the effects were less pronounced. Thus, one practical implication of this research is that the recollections of children from either age range can be improved with memory retrieval techniques. The practitioner should follow the stages of the cognitive interview process outlined in the present Method section, and note the refinements of the cognitive procedures suggested herein.

In the field, the practice interview could concern either some staged event in a waiting room, so that the interviewer knows the approximate facts as they actually happened. Alternatively, the practice interview could concern some standard aspect of the day's activities, such as what transpired at school on an earlier day. The advantage of using a staged event is that the interviewer would have prior knowledge of the event; and this knowledge could be used to identify when a child reports information that is in error. At such a point, the interviewer could pursue the possible source of the error, so as to clarify what is expected of the child during an interview. For example, the interviewer might need to further explain the meaning of saying "I don't know" for certain children.

A second practical implication to be drawn from the present results concerns the training of interviewers in the use of the cognitive methods. As reported by Dent (1982) and Geiselman et al. (1990), even experienced investigators do not always use optimal or productive interviewing strategies. The present performance data show that for most interviews, all of the cognitive methods should be tried at least once (Geiselman et al., 1986); and the style in which the questioning is conducted should be positive as opposed to condescending or ambivalent. Few detectives in our sample used all of the cognitive methods; and only one-third of the interviewers used a positive questioning approach. Furthermore, the detectives, as a group, were more likely to exhibit inappropriate interview tactics with

the younger children. Experience and classroom-style training apparently are not sufficiently individualized to produce an interviewer who is reliably effective when questioning children. One possibility is to include in the training regimen an individualized role-playing exercise, which could be video-taped and critiqued by personnel who are proficient in cognitive interviewing (Fisher et al., 1987). It is hoped that our qualitative analyses of the present interviews will aid the instructor and practitioner alike in the development of more effective interview procedures for use with children.

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Appendix A-1

Slide Show Scenario

[A Caucasian female (P1) greets the children as they enter the room.]

P1: "Hello. My name is Teri. I am going to show you some slides of landmarks in California. First, let me tell you what a landmark is. Landmarks are places where important things happened in history. They are special places. While you are watching the slide show, I would like for each of you to think about which landmark you like the best. There are many landmarks in California." [She shows the first 7 slides as follows.]

A. California's first library: this is California's first library. It is located up north in middle California and was used in earlier days.

B. Tuck box: this is a little ginger bread store in a small town called Carmel. They make jellies there. People like to stop there on vacation.

C. Pebble Beach: this is a famous golf course called Pebble Beach. Many people come there to play the game called golf. This is right on the ocean, as you can see.

D. Carmel beach: this is a white, sandy beach in California where people go to walk. See the people riding their horses?

E. Lone cypress: this is a very famous tree in California called the "long cypress" tree. It looks like it's growing out or a rock, doesn't it?

F. Hearst castle: this is a big castle that was built on a

hill and it takes a long time to get up to it. It was built by William Randolph Hearst, who was very rich and owned a lot of newspapers.

G. Capistrano mission: this is what 's left of a church built by some settlers. It is down south of here, and there is a story that certain birds, named swallows, go there every year at the same time.

[The staged disagreement follows. A Caucasian male (P2) enters the room abruptly, carrying a large ring of keys on a stick and a blue backpack over his shoulder, and demands loudly:]

P2: "Excuse me! I was scheduled to use the slide projector at this time! Why did you take it away?"

P1: "Well, I just took it out of the store room because no one was using it! I am in the middle of a slide show. Do you mind?"

P2: "So you didn't even check the schedule. My name was there in black and white. My name is Mr. Henderson. I signed up to use the projector for this day a whole month ago." [P2 then unplugs the projector.]

P1: "Gee. I'm sorry. I guess that was not very nice of me." [P1 puts her hands on her head in dismay.]

P2: "Well, that's alright. But next time it would be better if you would just check the schedule first, you know, the schedule that is on the wall in Room 20."

P1: "Okay. I am really sorry!"

P2: "Well, I accept your apology. Don't worry about it."

[P2 then plugs projector back in.]

P1: "So you are not angry with me?"

P2: "Well, I was angry with you; but I understand that you did not mean to do it."

P1: "Oh great. Well, I just have two more slides to show. Is it okay with you if I just finish up? Then I'll return the projector to the store room right afterwards."

P2: "Of course. That's fine." [P1 and P2 shake hands.]

P1: "Thank you. Excuse me kids. Everything is okay now. Well, back to the slide show."

H. Big Sur: this is a famous part of California, up North, where the ocean come up to very high cliffs. It is called Big Sur and many people visit here and go camping.

I. Monterrey Canning Company: this is a town called Monterrey that is near the ocean, far North of here. This is where little fish called sardines are caught by fishermen. What you see here is a factory where the sardines are put into cans.

P1: "Well, that is all of the slides. Because you were all very nice, I am going to give each of you an eraser." [P1 gives each of the children a pencil-top eraser shaped like a vegetable with arms and legs.] "Here you go."

[The research assistant who brought the children to the slide show enters and takes them to the waiting room.]

Appendix A-2

Waiting Room Scenario

[Children are led into a waiting room. A Caucasian male enters the waiting room, carrying a skateboard and a stuffed green allegator. He is dressed as a college student, in a T-shirt and jeans.]

"Hi dudes. My name is Mr. Miller, but you can call me Andrew. Have you dudes seen a guy come through here wearing a suit?" [He waits for the children to respond.]

"No?" [He puts down his skateboard and shows the children a stuffed green alligator.]

"His name is Charlie. I think stuffed animals are totally cool, don't you? You see there is this birthday party happening today for my little sister. Her name is Jill. Here's her picture." [He shows them a picture of Jill.]

"I'm inviting all her friends, and I'm giving her Charlie. Isn't that cool? She is like going to be nine years old today." [He puts the picture away.]

"So, I am going to this birthday party for Jill, and there is going to be this awesome magician there and all. He makes himself disappear and everything." [He pauses for awhile, gets up, peeks out the door, and sits back down.]

"Well, I guess the dude I was supposed to meet here is not gonna show up." [He opens the door and looks nervously around outside.]

"Hey man, would you guys do me a favor? If the guy in the

suit shows up, tell him that I was here and left for the party already. Okay?" [He fumbles through his stuff and pulls out a packet of pencils.]

"Here are some neat pencils because you dudes are so cool and all." [He gives the children each a pencil.]

"Well, hang loose. Don't forget to tell that guy that I was here." [He displays the hang loose hand signal and leaves.]