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The nature of children's true and false narratives[☆]

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Abstract

We review the research on the credibility and reliability of young children's reports. We then provide details of a study that was designed to address some unresolved issues in the field. In this study, various suggestive techniques were used in repeated interviews with preschool children to elicit narratives about true and fictional events. Analyses of children's narratives revealed that fictional narratives contained more spontaneous details, more elaborations, and more aggressive details than true narratives. Across retellings, false narratives were less consistent but contained more reminiscences than true events. These results are discussed in terms of the structural features of true and false narratives, the effects of repeated interviews on children's accuracy, and the credibility of children's reports. © 2002 Elsevier Science (USA). All rights reserved.

Introduction

In the past decade, there has been an exponential increase in research on the accuracy of young children's recall of their past and on the factors that

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compromise the accuracy of their recall (Ceci & Bruck, 1993; Qin, Quas, Redlich, & Goodman, 1997). In general, the results of this line of research indicate that although children's autobiographical recall is highly accurate for a wide range of events, their reports can be greatly distorted when they are obtained under suggestive interviewing conditions. The purpose of the present article is to review the findings of four major themes of the research on children's suggestibility and then to present the results of our most recent study that was designed to address some of the outstanding issues on reliability and credibility.

The focus on preschoolers

Individuals of all ages succumb to suggestions. Generally, however, children are more suggestible than adults (Ceci & Bruck, 1993, 1995), with preschoolers being the most vulnerable to suggestion (Ceci & Bruck, 1993, 1995). Because of preschoolers' special sensitivity to suggestive interviews, coupled with their increasing involvement in the justice system (see Ceci & Bruck, 1995), many studies, including the one reported in this article, have focused on this age group.

The structure of suggestive interviews

In the past decade there has been a shift from studying the distorting effects of a single leading question or a single piece of misinformation to studying the effects of "suggestive" interviews on the accuracy of children's reports. This shift was based on the realization that the largest suggestibility effects are produced when young children are confronted with a combination of implicit and explicit suggestive techniques that are woven into the fabric of the interview through the use of such techniques as bribes, threats, and repetitions of questions (Ceci & Friedman, 2000). In this context, an interview is defined as a verbal interaction between at least two participants where the goal is for one participant to obtain information from another participant. In this sense, interviews can be highly formal (e.g., police interrogations), informal and unstructured (e.g., a mother asking her child about school), or anything in between.

According to Bruck and Ceci (2002), the concept of *interviewer bias* is a defining feature of suggestive interviews. Interviewer bias characterizes those interviewers who hold a priori beliefs about the occurrence of certain events and who mold the interview to maximize disclosures that are consistent with those prior beliefs. One hallmark of interviewer bias is the single-minded attempt by an interviewer to gather only confirmatory evidence and to avoid all avenues that may produce disconfirmatory evidence. Thus, biased interviewers do not ask questions that might provide alternate explanations for the allegations or that might elicit information inconsistent with the

interviewer's hypothesis. In addition, biased interviewers do not challenge the authenticity of a child's report when it is consistent with their hypothesis. Even when children provide inconsistent or bizarre evidence, it is either ignored or interpreted within the framework of the biased interviewer's initial belief. In contrast, when the child's statement is incongruent with what the biased interviewer believes, it will be challenged or pursued with repeated questions designed to align the child's subsequent reports with the interviewer's initial beliefs.

The concepts of interviewer bias and suggestive interview are not categorical but continuous in nature. As such, highly biased interviewers will engage in highly suggestive interviews, whereas interviewers with only mild biases will impart interviews with few suggestive elements. Biased interviewers are not restricted to professionals who interview children; they can also include parents, teachers and others who have an agenda when they question children.

According to our model, interviewer bias influences the accuracy of children's reports (reviewed in Ceci & Bruck, 1995). In the typical study, children are asked to recall a staged event by an interviewer who intentionally conveys a bias that is either consistent or inconsistent with what really occurred in the staged event. In these situations, children often make inaccurate reports that are consistent with the biased interviewer's scripts, biases, or beliefs (e.g., Leichtman & Ceci, 1995; Lepore & SESCO, 1994; Thompson, Clarke-Stewart, & Lepore, 1997). In contrast to their vulnerability to biased interviewers, children's reports are quite accurate when they are questioned by unbiased interviewers, even if they are occasionally asked leading questions, and even if they are questioned after long intervals following the event (e.g., Goodman & Aman, 1990; Rudy & Goodman, 1991). Interviewer bias is reflected through a number of suggestive techniques that influence the entire architecture of interviews. According to our framework, as interview bias increases, so does the number of suggestive techniques, and this in turn decreases the accuracy of children's reports. We turn next to these suggestive techniques.

In order to obtain confirmation of their suspicions, biased interviewers may not ask children "open-ended" questions such as, "What happened?" but instead resort to a barrage of specific questions that contain information about the interviewers' hunches. This strategy is problematic because children's responses to specific questions are less accurate than their responses to open-ended questions. This finding has been consistently reported since the beginning of the 19th century (for review see Ceci & Bruck, 1993) and is highlighted in a recent study in which Peterson and Bell (1996) interviewed children about a traumatic injury after an emergency room visit. These researchers found that children were most likely to accurately report the important details in response to open-ended questions; however, their accuracy decreased substantially when they were asked more specific questions

(e.g., “Where did you hurt yourself?” or “Did you hurt your knee?”). Specific questions, which have the greatest risk of decreasing children’s accuracy, include yes/no questions (“Was it black?”) as well as forced choice questions (“Was it black or white?”) (see Brady, Poole, Warren, & Jones, 1999; Walker, Lunning, & Eilts, 1996). Peterson and Grant (2001) concluded that yes/no questions are the most problematic because children have a bias to produce “yes” answers and rarely produce “I don’t know” responses to these questions. This pattern reflects children’s efforts to provide answers consistent with what they see as the intent of the questioner rather than consistent with their knowledge of the event (Ceci & Bruck, 1995, for a review).

When biased interviewers receive answers that do not confirm their pet hypothesis, they repeat their questions, hoping for a more consistent answer. Indeed, when young children are repeatedly asked the same specific questions, they are more prone than older children are to change their original answer (Cassel, Roebbers, & Bjorklund, 1996; Poole & White, 1991). The usual reason proffered for this change is that the children assume their first answer was incorrect, hence the need to repeat the question.

Some interviewers convey their bias by providing information about the alleged target events that the child has not yet supplied (e.g., “Jason told me you were there when your stepfather hit your sister”). When these techniques are repeated across multiple interviews, children’s reports may become unreliable. For example, 5-year-old children received an inoculation from a pediatrician and 1 year later were interviewed four times about the details of that visit (Bruck, Ceci, Francoeur, & Barr, 1995a). Children who were repeatedly interviewed in a neutral, nonleading manner provided accurate reports about the original medical visit, displaying high levels of accuracy after a year-long delay. In contrast, children who were repeatedly given misinformation about the salient details associated with the medical visit incorporated the misinformation into their reports (e.g., they made false claims that the inoculation was administered by a female research assistant rather than the male pediatrician).

Interviewer bias may also be reflected by the “atmosphere” of an interview. Sometimes, interviewers provide much encouragement during the interview in order to put children at ease by providing a supportive environment. Children’s resistance to misleading questions increases when they are questioned by warm, supportive, and neutral interviewers (e.g., Carter, Bottoms, & Levine, 1996). However, encouraging statements lose their impartial tone when there is selective encouragement (reinforcement) for statements that are consistent with the interviewer’s beliefs. For example, Garven, Wood, and Malpass (2000) asked children yes/no questions about a special person who had visited their class 1 week earlier. Children who were given positive feedback for following the interviewer’s lead (e.g., “Great”) and negative feedback for not following the lead (“You’re not doing well”) inaccurately assented to over 40% of the misleading questions. In

contrast, children who were asked the same questions with no feedback provided inaccurate responses for only 14% of the questions.

Peer pressure is another suggestive technique used by some biased interviewers who try to obtain the child's cooperation by telling the child that his friends have helped or already told and that he should also tell and/or that he will feel better once he has told. Although it has not been as systematically investigated as other features of suggestive interviews, there are some data to indicate that adults can be swayed to give incorrect information about an experienced event if they are provided with inaccurate information about how other witnesses have responded (e.g., Asch, 1955; Shaw, Garven, & Wood, 1997). Similar effects were documented for children at the turn of the century by Binet (1900), who found that children will provide the incorrect answer of the rest of the group rather than give their own perception of reality. However, in a recent study, Garven et al. (2000) found that invoking peer support did not, by itself, taint the reports of young children.

Sometimes police or social service officials with high status use some of these suggestive techniques alone or in combination (Wood & Garven, 2000). One of the difficulties in this situation is the fact that young children are much more likely to follow the suggestions and leads of an interviewer who has high status (and thus presumed credibility) (e.g., Lampinen & Smith, 1995; Templeton & Hunt, 1997; Tobey & Goodman, 1992). In the eyes of a child, even an unfamiliar interviewer who professes knowledge about a target situation is accorded special status (e.g., Ceci, Ross, & Toglia, 1987; Hembrooke, Toglia, & Ross, 1991).

Guided imagery is another potentially suggestive interviewing technique. Interviewers sometimes ask children to try to remember or pretend if a certain event occurred, to create a mental picture of the event and to think about its details, or to speculate about an event ("Well, how do you think you would have felt if you did remember it happening to you?"). Under these circumstances, children may later come to report and believe these imagined activities actually occurred. This is because they sometimes do not distinguish memories of actual events from memories of imagined events (e.g., Lindsay, Johnson, & Kwon, 1991; Parker, 1995; Welch-Ross, 1995). This hypothesis is supported by studies where young children were repeatedly asked to think about real as well as imaginary events, creating mental images each time they did so (e.g., Ceci, Crotteau-Huffman, Smith, & Loftus, 1994a; Ceci, Loftus, Leichtman, & Bruck, 1994b). In one study, children's assent rate to false events increased over 10 sessions. Moreover, even when the children were told that the imagined events had not happened, many continued to confirm their false statements, insisting that they really occurred (Ceci et al., 1994b). These data suggest that some children believed that they had experienced the imagined fictitious events.

Although the use of a single suggestive technique can result in inaccurate reports, error rates can be low (e.g., Rudy & Goodman, 1991). More robust

suggestibility effects are obtained when two or more suggestive techniques are combined in one interview. For example, Garven, Wood, Shaw, and Malpass (1997) interviewed children 1 week after a stranger visited their daycare. Half of the children were asked leading questions. The other children were also asked leading questions but in combination with other suggestive techniques, including peer pressure (“The other kids said that...”), positive consequences (praising certain answers), negative consequences (telling the child that this was not the appropriate answer and repeating the question), enjoiners to think about questions to which they had replied “no,” and enjoiners to speculate (tell what might have happened). Children in the combined suggestion condition accurately answered only 42% of the questions compared to an accuracy rate of 83% for children who were just asked leading questions. The denseness of the suggestive techniques in the combined group’s interview may have alerted children to the interviewer’s bias. This bias may not have been as clear when only one technique (e.g., leading questions) was used, and thus fewer children were misled by the interviewer (also see Leichtman & Ceci, 1995).

Although all investigative and therapeutic interviews are not highly biased, some are (for examples see Ceci & Bruck, 1995; Garven et al., 1997). Interviewers defend their use of these techniques by claiming that victimized children are often afraid or ashamed to tell of their abuse and therefore interviewers must use a variety of tools to extract reports to protect the child from further harm. Obviously, there are documented risks and undocumented benefits to using suggestive interviewing techniques. There is no research, however, that compares these risks and benefits. Our study is a first step toward providing such a comparison.

Boundary conditions of children’s suggestibility

One might wonder whether young children’s proneness to suggestibility is restricted to nonsexual matters that are largely peripheral and nonsalient. However, research amply demonstrates that children are not merely suggestible about peripheral details but also about central details that may involve their bodies (Ceci & Friedman, 2000). At times, children’s false reports can be tinged with sexual connotations. In laboratory studies, young children have made false claims about “silly events” that involved body contact (e.g., “Did the nurse lick your knee?” and “Did she blow in your ear?”), and these false claims often persisted in subsequent interviews over a 3-month period (Ornstein, Gordon, & Larus, 1992). Preschoolers assented to suggestions that a doctor had cut out some bone in the center of the child’s nose to stop the child from bleeding (Quas et al., 1999). Young children falsely reported that a man put something “yucky in their mouth” (Poole & Lindsay, 1995, 2001); that their pediatrician had inserted a finger or a stick into their genitals (Bruck, Ceci, Francoeur, & Renick, 1995b); or

that a man touched their friends, kissed their friends on the lips, and removed some of the children's clothes (Lepore & SESCO, 1994). Preschoolers have also falsely reported that someone touched their private parts, kissed them, and hugged them (Bruck, Melnyk, & Ceci, 2000; Rawls, 1996; Goodman, Bottoms, Schwartz-Kenney, & Rudy, 1991).

Although suggestive interviews can influence children's reports about emotionally charged or central events, there is still the issue of whether it is easier to influence children's reports about positive rather than negative events. Data from Ceci et al. (1994b) are pertinent to this issue. Here, parents provided researchers with four true events involving their preschool child: a pleasant event (e.g., a birthday party), an unpleasant event (e.g., death of a pet), and two neutral events (e.g., wearing a blue sweater to school). Parents also verified that their child had not experienced four specific events: a false pleasant event (taking a ride in a hot air balloon), a false unpleasant event (falling off a bike and getting stitches), and two false neutral events (e.g., waiting for a bus). Once a week, for 11 consecutive weeks, children were told that their mother had told the interviewer about all true and false events. The interviewer asked the children to visualize the event in their heads and to think about what they were wearing, whom they were with, and how they felt. When asked if they remembered each of the events, children's assents to false events increased over time, and the false pleasant event received more assents than the false unpleasant event.

Using a different dimension, plausible (being lost as a young child) versus implausible (having received an enema), Pezdek and Hodge (1999) found that young children rarely assented to the implausible event after two suggestive interviews, although many did assent to the plausible event. It is possible, however, that there might be fewer differences between assent rates for the negatively and positively valenced events if interviewing techniques were more suggestive. This hypothesis was examined in the present study.

Credibility

A fourth issue in the suggestibility literature is whether children's false reports (i.e., those elicited through suggestive techniques) appear credible to adults and, specifically, to trained professionals. In some studies, trained professionals (e.g., judges, mental health workers, and lawyers) viewed videotaped or transcribed segments of interviews with children, some of whom had succumbed to interviewers' erroneous suggestions and some of whom had not. When asked to rate the credibility of the children's reports, professionals who were provided with no details of the studies (e.g., that the children had been subjected to repeated erroneous suggestions) were unable to reliably differentiate between children whose reports were false versus accurate (e.g., Ceci et al., 1994a, b; Leichtman & Ceci, 1995). In related research, Guyer and his colleagues found that professionals did not agree about the

credibility of children's claims of abuse even when they were provided with extensive case material (Horner, Guyer, & Kalter, 1993).

All of the above findings about children's credibility are based on judges' subjective impressions. In the present study, we asked if similar results would be obtained with more objective measures and, specifically, whether various linguistic markers would differentiate true and false narratives.

Overview of study

In sum, the present study was designed to examine three issues. First, does the finding that it is easier to suggest positively than negatively valenced false events (Ceci et al., 1994b; Pezdek & Hodge, 1999) generalize to situations where children are interviewed under more suggestive conditions than those used in the previous studies? In contrast to previous studies where children were told not to worry if they could not remember the false events, in the present study some of the interviewing techniques signaled to the child that it would be good to assent to each event.

The second objective was to identify specific markers of true and false narratives. We carried out fine-grained, objective analyses of preschoolers' true and false narratives that had been elicited by suggestive interviewing techniques. The specific measures were motivated by both theoretical and applied concerns. Based on Pezdek and Hodge's findings (1999), we predicted that true narratives would contain more details than false narratives. We also predicted that true narratives would contain more spontaneous, unprompted utterances because spontaneity is often used by expert witnesses as a marker of the speaker's credibility.¹ In addition, results of misinformation studies indicate that after receiving misinformation about an experienced event, children's free recall of that event contains more accurate than misinformed utterances. In other words, spontaneous utterances are mainly accurate in these situations (e.g., Bruck et al., 2000; Poole & Lindsay, 2001, in press).

Next, motivated by work by Fivush and her colleagues (e.g., Fivush, Haden, & Adam, 1995; Haden, Haine, & Fivush, 1997), we focused on measures that mark coherence in autobiographical narratives and that are known to occur in young children's true autobiographical narratives (Fivush et al., 1995). Specifically, we predicted that simple and complex temporal markers (references to chronological time or complex temporal relations), dialog (recalling portions of conversations), and evaluations or added descriptive material about the events would occur more commonly in true than in false narratives. Such features bring coherence to the organization of narrative

¹ For example, the *Michaels* court held that "the absence of spontaneous recall" was one of the factors relevant to a determination that the child's interview had been tainted. See *State v. Michaels*, 642 A.2d 1372, 1383 (N.J. 1994).

structure (see Fivush et al., 1995, for a full elaboration), which is thought to be necessary for the development of stable and elaborated (autobiographical) memory representations. With age, children's autobiographical narratives do indeed change quantitatively and qualitatively: Their narratives become not only longer, but also more elaborated and more coherent (e.g., Fivush et al., 1995; McCabe & Peterson, 1991).

Another potential characteristic that might differentiate true and false reports is the presence of fantastic, bizarre, aggressive, or improbable details. This hypothesis is based on details of actual cases where it has been reported that after suggestive interviewing children provided fantastic, bizarre, and aggressive details in their narratives (e.g., see Ceci & Bruck, 1995). For example, in the *Commonwealth v. LeFave*, preschool children who accused daycare workers of abuse also made claims about drinking urine, sacrificing and eating animals, and seeing robots or wild animals such as bears or elephants (Bruck, 1999).

Three hypotheses have been offered to account for the occurrence of these details. The first is that these details are false and are the result of suggestive interviews (Ceci & Bruck, 1995). Second, although reports of fantastic-bizarre events may themselves be false, their presence is symptomatic of trauma and as such may be markers for narratives that are otherwise true. According to this latter hypothesis, as a consequence of their abuse, children may misperceive actions or events or use fantasy to deal with their anxieties and to empower themselves to regain control over their victimization (see Everson, 1997, for a full account of explanations). A related hypothesis is that reports of abuse should not be discounted as false if they contain fantastic-bizarre details because fantastic details occur with some frequency in the reports of children who were actually abused. This latter view has been expounded by Dalenberg (1996), who found that the reports of children who met the highest criteria for certainty of abuse history contained more implausible, bizarre, or exaggerated claims than did the reports of children whose abuse status was questionable. If true, this hypothesis carries significant implications for the way the justice system should treat disclosures that contain a mixture of plausible and fantastic claims. However, due to the correlational nature of the data, the method of classifying true and doubtful cases, and the lack of controls exercised, it is not clear that this is the case. The present study allows a more detailed and controlled examination of this issue. In this study, children were asked to recount true and false events. Interviewers had full knowledge of the details of the true events and controlled the amount of erroneous information provided to the children about the false events. Care was taken to insure that none of the suggestions included fantastic, implausible, or aggressive details. Thus, an analysis of the children's ensuing narratives addresses the issue of whether suggestively interviewed children are more prone to report fantastic or implausible details in false narratives than in true narratives.

A third objective of the present study was to determine the degree to which repeated interviews would change the structure and content of children's narratives. Although there is a common view that repeated suggestive interviewing results in greater elaboration of false reports, there are no data to support this view. Furthermore, it is not known if there are different trajectories of change across sessions for true versus false narratives. In the present study, we examined these issues by focusing on the three interrelated concepts of *remembrance*, *consistency*, and *inconsistency*.

The phenomenon of reminiscence, the reporting of events in later interviews that were not reported during earlier interviews, is well-established in laboratory contexts with both adults and children (see Payne, 1989, for review). A forensic justification for repeated interviews of the child witness is that these will enable the child to provide new details that were not remembered in earlier interviews (see Ceci & Bruck, 1995; Ceci, Bruck, & Rosenthal, 1995). The major support for this view is provided by Fivush and her colleagues, who reported that when there were long delays between neutral nonsuggestive interviews, children's narratives during later interviews contained a large proportion of new details (up to 70%) that were not provided during earlier interviews (Fivush & Schwarzmüller, 1998; Fivush & Shukat, 1995). One major concern with these findings is the accuracy of the children's later reports. Although parents had corroborated the details of their children's reports, there could be error in the parents' corroborations due to their own poor memories of the events (see Howe, 1998). In order to address this issue under more controlled conditions (i.e., where the initial details could be documented), Pipe and her colleagues interviewed children about staged laboratory events shortly after the event and then at a much later time (e.g., Pipe, Gee, Wilson, & Egerton, 1999; Salmon & Pipe, 1997, 2000). A consistent finding of the Pipe studies is that when information is provided for the first time in later interviews, it is generally inaccurate, whereas information that is repeated across interviews is likely to be accurate. Recently, Peterson, Moores, and White (2001) replicated these results by asking children to recall details of an experienced traumatic event (an injury that necessitated a trip to a hospital emergency room). Children who were 2–13 years at the time of their initial injury were questioned soon after the emergency room visit and then 6 months, 1 year, and 2 years later. Although new information (reminders)² that was introduced in the 6-month interview was more likely to be accurate than incorrect, new details reported in the 1- and 2-year interviews were as likely to be incorrect as correct. Thus regardless of the nature of the event being recalled, details that

² We use the term "reminders" to refer to new details that get added to narratives regardless of their accuracy. We do this in order to have a parallel language to describe the inclusion of new details in true and in false narratives. We do not imply that this construct as used in the paper necessarily constitutes a memory-based phenomenon.

get introduced for the first time after multiple neutral interviews and after a long delay appear to have a high probability of being incorrect. In the present study, we examined the degree to which these conclusions generalize to narratives that have been repeated several times as a function of suggestive interviewing, a heretofore unexamined issue.

We also tested two alternative hypotheses concerning potential differences in reminiscence rates for true and false narratives. The first is the “Pinocchio hypothesis”: the more that false stories are recounted, the more they grow or become elaborated. Accordingly, one might expect that there will be higher rates of reminiscence in false than true stories. The second hypothesis is based on the common claim that it is easy to detect false narratives that are the result of suggestive interviewing because children “parrot” in a wooden and inflexible manner the suggestions of their interviewers. According to this view, there will be few reminiscences in false narratives.

Finally, differences in consistency (the repetition of the same detail across interviews) and inconsistency (contradictory accounts across interviews) of true and false narratives were examined. Consistency is one of the most important criteria used by professionals to evaluate the accuracy of children’s allegations of abuse (Conte, Sorenson, Fogarty, & Rosa, 1991), whereas inconsistency lowers children’s credibility in the eyes of mock jurors (Leippe, Manion, & Romanczyk, 1992; Ross, Dunning, Togliola, & Ceci, 1990).

To summarize, in the present study, after one unbiased interview, children were suggestively interviewed four different times about true and false events, some of which were positively valenced and some of which were negatively valenced. The objectives of this study were to (a) determine if children were more likely to assent to and provide narratives for pleasant compared to unpleasant events, (b) examine characteristics that differentiate true narratives from false narratives, and (c) examine how true and false narratives change as a function of repeated suggestive interviews.

Method³

Design

On five occasions, preschool children were interviewed about two true experienced events and two false (i.e., nonexperienced) events. One true and one false event had positive outcomes; one true and one false event had negative outcomes.

³ Because of space limitations, we do not present all the details of the methods, scoring and results. A manuscript with these details is available by writing to the first author at bruck@welch.jhu.edu.

In the first interview, the children were asked if the event had happened and, if so, to provide a full account of it. No suggestive techniques were employed. Interviews two and three were highly suggestive: The interviewer told the children the major details of each event and used other techniques that are known to be highly suggestive with preschool-age children. In interview four, a puppet was used to question the child. In the fifth and final interview, an unfamiliar interviewer asked the child to tell about each event.

It should be noted that this study was not designed to examine the specific contribution of any one technique. Rather, the intent was to construct suggestive interviews, which would produce high assent rates so that there would be sufficient number of narratives for the key analyses.

Subjects

Sixteen preschool children were selected from two daycare centers in Rochester, New York. Most of the children came from families who were receiving public assistance. Fourteen of the children were African Americans and two were non-Hispanic Caucasians. The sample was well balanced in terms of gender: 56% were males. At the time of the first interview, the average age of the children was 54 months (range = 44–61).

Events

We interviewed children about four meaningful and interesting events that varied on two dimensions: experienced (i.e., true) versus nonexperienced (i.e., false) and positive (pleasant) versus negative (unpleasant) outcomes. Thus, there was a true positive event, a true negative event, a false positive event, and a false negative event.

For the false positive event, the interviewer suggested that the child had helped a lady find her lost monkey. The outcome was positive in that a child was successful in helping find a lost pet. For the false negative event, it was suggested that some of the daycare children had witnessed a man stealing food from the daycare. The outcome was negative because the thief deprived the daycare of needed food. Thirteen major details for each of these false events were presented to the child in the second and third interviews. (Eight details were presented in the second interview; five of these were repeated in the third interview along with five new details). For example, some of the details for the monkey event were that a lady lost her monkey, the monkey's name was Elvis, he was under a tree, and the lady gave the children presents for helping her. Some of the details for the thief event were that a man stole food from the kitchen, he put the food in a large paper bag, and he snuck out the back stairs.

The true positive event was staged for each child. The child met a visitor who asked the child to help her carry some books and puzzles. The visitor

tripped on her shoelace, injuring her ankle. She asked the child to go to the secretary's office to ask for help. When the child returned, the visitor was better and thanked the child. As was the case for both false events, 13 major details were provided to the child in the second and third interviews; 8 were provided during the second interview, 5 of which were repeated during the third interview along with 5 new details. Thus, the rate of detail repetition across interviews was the same for the true positive event and the two false events.

Because it would be ethically impermissible to involve the child in a staged event that involved a negative outcome (similar to the false negative event), the true negative event differed in structure from the other three events. We asked parents and teachers to recount in detail a recent misdeed that resulted in the child's being punished. These episodes involved punishment for fighting with a classmate, breaking classroom procedures, and misbehavior outside of school. Because the true negative event was different for each child, the number of details was beyond experimental control. In addition, the structure of these events was simpler than the other three, resulting in fewer details: there was an average of only 5 major details for true negative events (compared to 13 details for each of the three types of staged events). Because of the sparseness of details, the same 5 details were repeated in the second and third interviews. Because there were fewer suggestions for the punishment event, it is possible that these narratives would contain less information than the other three narratives.

Interviews

There were five interviews for each of the four events. Within each testing period, the same interview structure was used to questions the children about the four events. One interviewer conducted the first four interviews; an unfamiliar interviewer conducted the fifth interview.

Interview 1 (T1: baseline)

The interviewer asked the child if he or she had experienced the target event (e.g. "Did you ever see a man come into the daycare and steal something?" and "Have you ever helped a lady in the daycare who fell and hurt herself?"). If the child assented, he or she was asked, "Tell me everything that you can remember about that time." The interviewer asked the child "Is there anything else that happened?" until the child said that was all he or she could remember.

Interview 2 (T2)

This suggestive interview took place approximately 1 week after T1. The interviewer told the child that she had been talking to other children who had told her about the target event. The interviewer filled in the appropriate

details for that target event. For example, the following was part of the script for the false positive (monkey) event: “Those kids told me some neat stuff that happened to them. They told me that one day they were in the park and some lady came up to them and told them she had lost her monkey in the park. She asked Mary, Martha and Steve to help her find her monkey. Have you ever had anything like that happen to you?”

Children who assented were first asked for a full account (“Tell me everything that happened”), following the same procedures as described for T1, and then were asked six specific questions about the event. The purpose of these questions was to have the child think about the event and to provide information that might be repeated in subsequent interviews. Some of the questions were in a *wh-* form (e.g., “How did you feel when...?”), others were *yes/no* questions (e.g., “Did you ever do that again?”), and others were forced choice questions (e.g., “Was the monkey wearing a collar or a leash?”) In some contexts, these questions can be (mis-)leading. The questions were constructed to elicit similar information for each of the four events. After the six questions were answered, the interviewer rewarded the child’s response. For example, for the positive events she said, “It’s so wonderful that there are nice kids like you to help people when they need it. You know it’s important.” (Similar endings were used for the other two events.)

If the child denied observing or participating in the event, the interviewer used peer pressure: “The other kids told me they did that [e.g., helped the lady in the park]. I want to hear if you helped her.” If a child still denied, he or she was asked to pretend that the event had happened and to answer the six questions (by pretending that it had happened). The child’s responses were rewarded as described in the previous paragraph.

For the true negative (punishment) event, the interviewer began by saying “I want to know about the kinds of problems children have so I can help them. It is really helpful if you tell me about the time. . . The other kids told me about the time that. . .”. The rewarding statement at the end of the interview was “It’s really great that you can tell me so much.”

Thus interview 2 was very suggestive because it contained a combination of techniques (leading questions, peer pressure, imagining, encouragement, and praise for talking about the event) that are known to taint the reliability of children’s reports.

Interview 3 (T3)

Interview 3 took place approximately 1 week after T2. Interview 3 contained the same suggestive techniques as interview 2 and, in addition, it had the added feature that the theme and many of the same details of the interview were repeated. The structure of interview 3 was similar to that of interview 2 except that five new details were provided for the false positive, false negative, and true positive events. All interviews repeated five of the details that were provided in interview 2. A new set of six questions was

introduced except for the true negative event where the six questions were repeated across all interviews. At the end of this third interview, children were also asked to think hard and to tell anything else that they may have forgotten. Children who denied participation were treated the same way as was outlined in interview 2.

Interview 4 (T4)

Approximately 1 week after interview 3, the child was introduced to a puppet (called Sedrick) and was asked to tell Sedrick about each event. Although the child was provided with no explicit information about each event, this interview contained a number of suggestive elements. First, the child was told that Sedrick had been talking to the other children about the event (e.g., helping a lady find a monkey in the park) and Sedrick now wanted to hear about the time it happened to this child. If the child denied it had happened to her, then Sedrick acted “sad” and wondered why the child did not want to talk. Sedrick asked the six specific questions (by whispering these to the interviewer, who, in turn, repeated them to the child). Again, if children denied participation, they were asked to pretend and to answer the questions. Three of the six questions were repeated from interview 2, and the rest were repeated from interview 3. At the end of the questioning about each event, Sedrick praised the child for their information.

Reminder session

For the first wave of children tested, Christmas vacation came between the fourth and final interview. Because of this 2-week delay, all children received a reminder interview the week before the final interview. The interviewer told the child that she was writing a book based on what the children had told her. The interviewer then told the child about each of the events and included the details that had been suggested in interviews 2 and 3. The children were not asked to provide any information.

Fifth interview (T5)

One week after the reminder interview, the child was introduced to a friend of the previous interviewer, who then left the room. The new interviewer told the child that she had been talking to the children in the daycare about things that had happened. She then asked about each event, “Your friends told me something about helping a lady who fell in the daycare. Do you know anything about that?” The same procedures were used to elicit a narrative as described in the baseline interviews. In addition, the children were asked six questions from the previous interviews and were then asked to think hard to make sure they had told everything that happened. If a child denied that an event had happened, the interviewer invoked peer pressure (“Your friends told me about this, but I want to hear about it from you”). If the child continued to deny, the interview was terminated.

Procedures

Before the experiment began, the main interviewer spent 2 weeks in the daycare to get to know the children and the staff. One week before the baseline interview for the true positive event, the falling incident was staged for each child. All interviews were videotaped and then transcribed to permit detailed coding.

Pilot testing revealed that interviews were too long if the child was asked about four events in the same sitting. Therefore, each child was questioned about two events (for five interviews). A few weeks later, the child was questioned about the other two events (for five interviews). During each questioning wave, the children were questioned about one true event and one false event, with the nature of it (positive or negative) being randomized across the 16 children.

Results

Coding

Assents

The number of children assenting to each event at each interview was counted. If a child initially assented to the interviewer's question ("Did that happen to you?"), but later in the same interview recanted, denied, or refused to answer, then the child's response was not counted as an assent. This resulted in a conservative estimate of false assents.

Analysis of narratives

If a child assented to an event, that narrative and answers to questions about that event were analyzed. The major unit of analysis was the *utterance idea*, a statement that usually contains a verb and is bounded by a pause. Sometimes, however, statements may not contain verbs; for example, children might respond to questions with informative one-word answers. The following are all examples of utterances: "I was in the park"; "A long time ago, I was in the park"; and "Sad" (in response to the question "How did you feel?"). Within each interview, if an utterance was repeated or paraphrased, it was counted only one time.

Utterances were categorized as on-topic or off-topic. In the latter case a child might become distracted and talk about an event that was unrelated to the one at hand.⁴ Two raters coded all interviews. Interrater reliability for

⁴ There were few off-topic utterances (less than one per interview). The rate of off-topic utterances was the same across the four different events and remained stable with repeated interviews.

the total number of on-topic utterances for each of the four events in each of the interviews ranged from .92 to .99.

Next, on-topic utterances were coded as spontaneous or prompted. The latter were responses to specific probed questions. Spontaneous utterances occurred in response to the questions “Tell me what happened” and “What happened next?” They could also occur when children’s responses to specific questions included an appropriate response and additional unprompted information. For example, in response to the question “Where did you find him?” a child replied, “Under the ground” and then continued, “and we grabbed its head. And we picked him. And gave him to the lady.” The last three idea utterances were coded as spontaneous, as they were not in direct response to the question. Except when noted, most of the analyses only included on-topic, spontaneous utterances. Interrater reliability for categorization of spontaneous and probed utterances was perfect.

Preliminary data analyses

The 16 children were between 44 and 61 months of age at the time of the initial interview. Age was not systematically associated with assent rates or with the other dependent variables that are reported below. Although there was also some variability in the delay between interviews (especially between the fourth and fifth interview due to Christmas vacation), length of delay did not correlate with assent rates or with other dependent variables. Finally, there was no systematic difference for assent rates or other dependent variables for the two narratives elicited in the first wave and the two narratives elicited in the second wave of testing. Based on these results, the factors of age, interview delay, and wave of testing are not considered in the following analyses.

Assent rates

To determine if assent rates varied as a function of the type of event (true positive, true negative, false positive, and false negative) and as a function of interview session, a two-way analysis of variance (ANOVA) with repeated measures was carried out on the data. The repeated measures were event (false negative, false positive, true negative, and true positive) and interview session (T1 T2, T3, T4, and T5). The dependent variables were assents (see Table 1).

There were main effects of Event type [$F(3, 45) = 8.14, p < .001$] and of interview session, [$F(4, 60) = 15.40, p < .001$], as well as a two-way interaction [$F(12, 180) = 6.30, p < .001$]. Planned comparisons were carried out on the interaction to determine whether true events had higher assent rates than false events at each interview session. This hypothesis was supported at the first interview only where the following significant differences were obtained

Table 1
Percentage of assents for each event at each interview session

| Event | Interview session | | | | |
|----------------|-------------------|-----|----|-----|----|
| | T1 | T2 | T3 | T4 | T5 |
| True positive | 100 | 100 | 94 | 100 | 81 |
| True negative | 63 | 56 | 75 | 100 | 94 |
| False positive | 6 | 56 | 94 | 75 | 81 |
| False negative | 37 | 69 | 88 | 100 | 75 |

Note. $n = 16$ per cell.

among events: true positive > true negative > false negative > false positive. At T2, although assent rates were highest for the true positive event, there were no differences in assent rates for the other three events. At T3, assent rates were similar for all events. This pattern held for T4 and T5 with one exception. At T4, assent rates for the false positive event were significantly lower than those of all other events. To summarize, although there were initial differences in the assent rates for true and false events in interviews 1 and 2, by interview 3 and again at interview 5, there were no differences among the events, with assent rates reaching close to ceiling for both true and false events.

The next set of planned comparisons were carried out to examine changes in assent rates as a function of repeated interviewing for each of the four events. There were significant linear trends (all $ps < .01$) for all events except the true positive event where assent rates were near ceiling at all sessions. Thus assent rates increased as a function of repeated interviewing for true negative, false negative, and false positive events.

Narrative structure and content

For most of the analyses reported in this section, a two-way ANOVA with repeated measures was used to examine differences in structure and content of true and false narratives (objective 2), as well as to examine how these variables might change as a function of repeated interviewing (objective 3). The repeated measures were event (false negative, false positive, true negative, and true positive), and interview session (T2, T3, T4, and T5).⁵ The dependent variables were spontaneous idea utterances, reminiscences, consistent statements, contradictory statements, measures of

⁵ Baseline (T1) narratives were not included in these analyses because, unlike the other four interviews, these were devoid of suggestive elements. Thus it would be impossible to determine whether differences between baseline and later interviews reflected repeated interviewing effects or unbiased vs suggestive interviews.

narrative cohesion, and utterances containing aggressive or improbable details.

Structural and content information of narratives were only coded if the child assented to the event. If the child denied (“No it didn’t happen”), the group mean for that event at the relevant interview was substituted to avoid losing the subject from the repeated-measures analysis. Missing cells in interviews 2, 3, 4, and 5 accounted for 16% of the data. An appropriate reduction in the degrees of freedom for the error term was made. The data were rescored so that a score of “0” was assigned to a missing cell. Both types of analyses (nonestimated and estimated) were carried out on the data. The results were always identical. Because the “0” replacement solution confounded assent rates with narrative quality,⁶ only the results of the more conservative (estimated) analyses are reported in the text and in the tables. (In Table 2, we show both the nonestimated and unestimated means to give the reader an appreciation of the similarity of the patterns of results.)

Spontaneous utterances

Interrater reliability for the total number of spontaneous utterances for each event during each of the interviews (16 correlations) was nearly perfect ($r_s > .97$). To test the hypothesis that true narratives contain more spontaneous utterances than false narratives, a 4 (event) \times 4 (interview) ANOVA with repeated measures was carried out on the number of on-topic spontaneous utterances (see Table 2). There was only a main effect of event [$F(3, 32) = 11.90, p < .001$]. Newman–Keuls post hoc tests revealed the following pattern of differences: false positive ($M = 13.1$) = false negative ($M = 12.9$) > true positive ($M = 9.5$) > true negative ($M = 6.7$).

One unexpected finding was that once suggestive interviewing proceeded, there was no overall change in the length (as measured by spontaneous idea utterances) of the narrative. Nonetheless, as shown in Table 2, there were dramatic changes in narrative length for each event from the first unbiased to second suggestive interviews. Thus, the introduction rather than the repetition of suggestive techniques affected narrative size.

Reminiscences and consistency

It has been argued that when children produce false reports because of suggestive interviewing, these reports tend to be static, rigid regurgitations of the original suggestions. According to this view, children’s false reports

⁶ This poses a problem of interpretation for both within-subjects effects. Specifically, if children provided more assents for true than for false events at a specific period, then the false event cells would contain more 0s for the narrative analyses, and this could artificially underestimate the quality of those narratives. Similarly, if assents for a specific event increased with interviews, then the number of 0s for the dependent measure would also decrease, resulting in perhaps an inflation of the effects of repeated interviewing on the quality of narratives.

Table 2
Total spontaneous details (estimated and nonestimated)

| Event | Interview session | | | | | |
|----------------|-------------------|-----------------|------------------|-----------------|------------------|----------|
| | T1 | T2 | T3 | T4 | T5 | <i>M</i> |
| True positive | | | | | | |
| Estimated | 6.5 | 9.00 (3.69) | 8.94 (5.43) | 9.88 (4.66) | 10.31 (5.15) | 9.53 |
| 0 Replacement | | 9.00 (3.69) | 8.38 (5.88) | 9.88 (4.66) | 8.44 (6.63) | 8.92 |
| True negative | | | | | | |
| Estimated | 3.20 | 8.75 (5.37) | 7.25 (4.55) | 5.25 (2.98) | 5.38 (3.50) | 6.66 |
| 0 Replacement | | 4.81 (6.93) | 5.50 (5.61) | 5.25 (2.98) | 5.06 (3.75) | 5.16 |
| False positive | | | | | | |
| Estimated | — | 14.94 (8.36) | 13.69 (11.80) | 10.94 (4.28) | 12.75 (5.65) | 13.08 |
| 0 Replacement | | 8.38 (11.32) | 12.81 (12.28) | 8.19 (6.49) | 10.31 (7.62) | 9.92 |
| False negative | | | | | | |
| Estimated | 3.0 | 11.81 (9.48) | 13.81 (8.64) | 10.50 (7.06) | 15.62 (8.43) | 12.94 |
| 0 Replacement | | 8.06 (11.01) | 12.06 (9.84) | 10.50 (7.06) | 11.63 (10.91) | 10.56 |

Note. Standard deviations are presented in parentheses. The results of the analyses of the estimated means are presented in the text. The 0 replacement data (0s were assigned to cells when children denied an event) are presented for comparison purposes only. Estimated means are presented for the baseline nonsuggestive interviews. For reasons discussed in the text, these data are not presented in the statistical analyses.

should contain relatively few new details with repeated interviewing. In addition, one would predict that false reports would be more consistent over time because the same details are merely repeated. An alternative view, that consistency is higher in true narratives, is based on the finding that the degree to which the same details are repeated across interviews is one of the most important criteria used by professionals in evaluating the reliability of children's allegations of abuse (Conte et al., 1991). In the present study we addressed these hypotheses by carrying out similar analyses on spontaneous reminiscences and on cross-interview consistent statements (prompted and spontaneous).

For each interview, the number of spontaneous utterances that contained new information that had not been reported in any previous interview was

expressed as a proportion of the total number of spontaneous utterances for that interview. If the child provided the information in response to a specific question in an earlier interview, but spontaneously produced the information in a later interview, this was not coded as a reminiscence. Because there were so few opportunities for reminiscence in interview 2 (due to the preponderance of denials in the baseline interview), only reminiscences in interviews 3, 4, and 5 were included in this analysis. Hence, we counted the number of spontaneous utterances at T3 that had not been stated at T1 or T2. Similarly, we counted the number of spontaneous utterances at T4 that had not been stated at T1, T2, or T3. A similar procedure was carried out for the final interview. Interrater reliability for the number of spontaneous reminiscences was nearly perfect across all interviews and all events (all $r_s > .96$).

A 4 (event) \times 3 (interview session) ANOVA with repeated measures was run on the proportion of spontaneous utterances that were reminiscences. There was a significant main effect of event [$F(3, 36) = 12.73, p < .01$]. Newman–Keuls tests revealed there were more spontaneous reminiscences in false compared to true narratives. There were no differences in the proportion of spontaneous reminiscences between false positive ($M = .59$) and false negative narratives ($M = .66$) or between true positive ($M = .36$) and true negative ($M = .41$) narratives. There was also a significant main effect of interview session [$F(2, 24) = 34.65, p < .01$]. Post hoc tests revealed the following pattern: T3 ($M = .66$) $>$ T4 ($M = .46$) = T5 ($M = .41$). As can be seen from these numbers, a very high proportion of utterances in all narratives was reminiscences (40–60%), even at the final interview. Thus, although the overall length of narratives did not change over sessions, the content of these narratives changed dramatically with each retelling, and this was more so for false than for true events.

One rationale for reinterviewing children is to provide them with an opportunity to report additional details that they forgot to tell in a previous report. One of the assumptions underlying the examination of reminiscences in narratives is that these are accurate reports (see Fivush, Hamond, Harsch, & Singer, 1991; Fivush & Shukat, 1995). In order to test this assumption, we examined the spontaneous and prompted inaccurate reminiscences for the true positive event. Because all children provided true positive narratives at T1, it was possible to include reminiscences for T2. We only counted inaccurate details that would be of major significance in the interpretation of the event. Some of the inaccurate details included in the analysis were “I called 9-1-1,” “She fell many times,” “A man helped her,” “I fell,” and “We took her to the hospital.” Errors on minor details (e.g., if the child said the visitor had brown rather than black hair) were not included in these analyses to make this a generous test. Interrater reliability was perfect on this measure.

Inaccurate reminiscences were expressed as a proportion of the total number of reminiscences for each interview. A one-way ANOVA with

repeated measures (interview sessions 2, 3, 4, and 5) revealed a main effect of interview session [$F(3, 13) = 3.45, p < .05$]. Errors increased as a function of repeated suggestive interviews; planned comparisons revealed that there were proportionately more inaccurate reminiscences in the final two interviews (45% in T4 and 38% in T5) than in the second and third interviews (25% and 20% respectively). Thus, reminiscences about true events become more inaccurate with additional suggestive interviews.

The analysis of the consistent statements was similar to that just reported for the reminiscences except that we included prompted (answers to questions) as well as spontaneous idea utterances. The inclusion of prompted utterances provided a larger baseline for comparison by allowing us to examine whether children's answers to specific questions were consistent across interview sessions and also whether answers to specific questions became incorporated into later spontaneous statements (another indication of consistency).

Following the procedures outlined for scoring of reminiscences, we only examined consistency of utterances beginning at interview 3, asking whether these details had been mentioned in any previous interview. Similar procedures were carried out for interviews 4 and 5. These variables were expressed as proportions of the total number of utterances in each interview (i.e., the sum of spontaneous as well as probed utterances). Reliability was high for measures of consistency (all $r_s > .98$).

A 4 (event) \times 3 (interview session) repeated-measures ANOVA yielded significant main effects of event [$F(3, 29) = 20.22, p < .01$] and of interview session [$F(2, 19) = 23.68, p < .01$]. Neuman–Keuls tests revealed that true narratives were more consistent than false narratives (summing over the three interviews, consistency rates were 67% for true negatives, 50% for true positives, 30% for false negatives, and 25% for false positives). Neuman–Keuls comparisons of the repeated interview effect revealed that consistency increased from the third (35%) to the fourth interviews (47%) with no change between the fourth and fifth interview sessions (47%).

Contradictions

The opposite of “consistent reports” is “contradictory” reports across interviews; this occurs whenever a later report negates an earlier report. For example, if a child first reported “I found the monkey *all by myself*,” but later reported, “*My friends and I* found that monkey,” this would constitute a contradiction.

The number of contradictions (in spontaneous and prompted utterances) produced in interviews 3, 4, and 5 were counted. Each score was expressed as proportion of the total number of spontaneous and probed details for each interview. Reliabilities were high for the coding of contradictions for each of the four events ($r_s > .92$). The results of an ANOVA with repeated measures (4 events \times 3 interview sessions) yielded a main effect of interview [$F(2, 19) = 10.73, p < .01$]. In general, there were few contradictions. Post

hoc tests revealed the following pattern of increases in contradictions: T3 (5% of all details were contradictions of statements made in previous interviews) > T4 (10%) = T5 (13%). There was no main effect or interaction involving the factor of event.

Preliminary summary

To recap the five primary findings thus far: (a) False narratives contained more spontaneous utterances (details) than true narratives; (b) with repetition, false narratives included more reminiscences than did true narratives; (c) the accuracy of true narrative reminiscences declined with repeated interviewing; (d) true narratives were more consistent than false narratives across interviews; and (e) there were no differences between true and false narratives in terms of contradictions.

In this next set of analyses, we examined markers of narrative cohesion that have been used in previous studies and that have been found to be characteristics of autobiographical narratives of children (see Fivush et al., 1995; Han, Leichtman, & Wang, 1998).

Temporal markers

The number of temporal markers used in spontaneous utterances in all four narrative types for interviews 2, 3, 4, and 5 were counted. This included simple temporal markers (words referencing chronological time, such as *then*, *after*, *first*, *next*, *before*, and *later*), complex temporal markers (words referencing conditional states, such as *if-then*), causal relations (*because* and *so*), and optional states (e.g., *sometimes*, *usually*, and *always*). According to some frameworks, these markers increase narrative cohesion (e.g., Fivush et al., 1995). Interrater reliability was high for all events and interviews (*rs* between .91 and .99).

The results of a 4 (event) \times 4 (interview session) repeated-measures ANOVA yielded a main effect of narrative type [$F(3, 32) = 6.87, p < .001$]. Generally, children provided few temporal markers in each narrative; however, the two false narratives contained significantly more temporal markers (false negative $M = 4.1$; false positive $M = 3.9$) than did the two true narratives (true negative $M = 1.8$; true positive $M = 2.6$). There was no main effect or interaction involving the factor of interview session.

Dialog statements

The number of spontaneous statements that were in dialog form (“I said, ‘You better hurry’”) was counted. According to Fivush et al. (1995), the presence of dialog reflects evaluation, an important component of narrative structure. The frequency of dialogs in spontaneous or prompted utterances in the children’s narratives was low (less than one occurrence per narrative). There were no significant main effects or interactions involving this dependent variable.

Elaborations

The number of elaborative terms used in prompted and spontaneous statements was counted. These included the number of adjectives, adverbs, and metaphorical terms (e.g., “She was *sad*,” “The lady was wearing a *red* dress,” and “The drum made a sound like *bam bam*”). The interrater reliabilities for the number of elaborations ranged from .71 to .96.

A 4 (event) \times 4 (interview) ANOVA produced a main effect for event [$F(3, 32) = 11.16, p < .001$]. Collapsing across interviews, there were more elaborations in false narratives (false negative $M = 3.0$; false positive $M = 2.9$) than in true narratives (true negative $M = 1.1$; true positive $M = 1.5$). There were no other significant effects.

To summarize, in two of the three analyses, cohesive narrative markers were included more frequently in false compared to true narratives. Also, the frequency of these markers did not change as a function of repeated interviews.

Aggressivelimprobable details

Originally, we had intended to focus on “fantastic” or “improbable” details. However, this scheme became problematic and subjective for certain events. For example, some of the false negative narratives included descriptions of the child doing harm to the thief or running after the thief. Raters often disagreed as to whether these acts were improbable. To resolve these problems, we widened the focus to include not only details that were *clearly* fantastic or improbable (“I rode on a polar bear’s back to catch the monkey”) but also details that contained aggressive or harmful content (“Suzanne kicked the bad guy in the legs”, and “The monkey died”). In the latter case, an utterance was coded as aggressive if it contained one of the following themes: hurting or being hurt, kidnapping, monsters or wild animals, and breaking things. There were two exceptions. First, for the true positive event where one of the participants actually did fall and was hurt, mention of these details was not categorized as aggressive. However, if the child exaggerated the hurt (e.g., claiming that her foot was bleeding) then this was counted as an aggressive-improbable detail. Second, for the true negative event, some children were punished for fighting. Thus if a child said that he or she was hit, this was not counted as an aggressive detail. However, escalation of aggression (e.g., “I pushed him down the stairs”) was counted as an aggressive detail. It is entirely possible that the reported escalation was accurate and therefore the number of aggressive/fantastic elements in the true negative events may be somewhat overestimated. However, the number of these cases was small, and their elimination did not change the pattern of results. Aggressive and fantastic utterances (prompted and spontaneous) were summed together to yield one score. Interrater reliability was high for each interview period, ranging from .87 to .96.

Table 3
Percentage of narratives with aggressive/fantastic content

| Event | Interview session | | | |
|----------------|-------------------|----|----|----|
| | T2 | T3 | T4 | T5 |
| True positive | 25 | 20 | 31 | 14 |
| True negative | 22 | 33 | 13 | 33 |
| False positive | 56 | 47 | 58 | 69 |
| False negative | 64 | 57 | 36 | 83 |

A 4 (event) × 4 (interview session) ANOVA with repeated measures yielded a main effect of event [$F(3, 32) = 10.06, p < .01$]. Planned comparisons of this main effect revealed the following pattern: false negative ($M = 2.3$) > false positive ($M = 1.4$) > true positive ($M = .56$) = true negative ($M = .53$). Thus, false narratives contained more fantastic/improbable details than true narratives. The main effect for interview session missed traditional levels of significance [$F(3, 32) = 3.06, p > .05$]. The mean number of aggressive fantastic details at each interview session was T2 = 1.28, T3 = 1.19, T4 = .79, and T5 = 1.50.

Because the presence of one fantastic-aggressive detail can change the tone or theme of a narrative (e.g., if the child reported the monkey died), we also calculated the percentage of narratives with at least one aggressive detail (see Table 3). Chi-square tests revealed that proportionately more false narratives contained aggressive details than true narratives ($ps < .05$). Also, it is noteworthy that the number of narratives with aggressive details as well as the total number of such details did not decline when the children were interviewed in the final session by an unfamiliar interviewer. Thus, although aggressive or fantastical elements can coexist with valid details in true stories, they most frequently occur in false narratives.

Discussion

The overall goal of this project was to examine the nature of preschoolers’ narratives that were elicited under conditions of high interviewer bias. The specific objectives of this study were to (a) determine if children were more likely to assent to and provide narratives for positive (pleasant) events compared to negative (unpleasant) events, (b) identify some of the characteristics that differentiate true narratives from false narratives, and (c) examine how true and false narratives change as a function of repeated retellings. We address these three objectives in order.

Assent rates

The suggestive interviewing techniques produced high rates of assents for both the true and false events. Although there were initially some differences

between assent rates for true and false events, after only two suggestive interviews (i.e., the third interview), assent rates were similar for true and false events as well as for pleasant and unpleasant events. These results contrast with those of Ceci et al. (1994b), who found that assent rates for false positive events were nearly double those for false negative events after 11 suggestive interviews. These results are also inconsistent with claims that children will not incorporate false suggestions of nonexperienced events (Pezdek, Finger, & Hodge, 1997) or of implausible events (Pezdek & Hodge, 1999) into their reports. One explanation for this discrepancy could be that the interviews in this study were more suggestive compared to those in previous studies. For example, Ceci et al. told children that their parents had said that the false events occurred (a call for conformity) and then asked children to visualize the false events. However, children were also told that it was OK if they could not remember. In contrast, we constructed interviews with a wider variety of empirically validated suggestive techniques which included providing children with details of events, praising children for their assents and reports, using peer pressure, and asking children to imagine. Under these conditions, most children quickly came to claim that they aided a stranger in finding her pet monkey and that they saw a thief steal food from their daycare. If these techniques had also been used in the studies by Ceci, Pezdek, and colleagues, perhaps then children would assent equally to positive and negative events, to plausible and implausible events, and to experienced and nonexperienced events.

The results of the present study reflect the double-edged sword of suggestive interviews with young children. They provide compelling evidence that a combination of suggestive techniques increase assent rates for true as well as for false narratives. When children did not initially want to talk about the true negative event (perhaps due to embarrassment), our suggestive interviewing gradually promoted their willingness to assent to these events. Thus, as is claimed in the clinical “survivor” literature, interviewers often use suggestive techniques because they allow those who are afraid or ashamed to disclose details of their victimization (e.g., Bass & Davis, 1990; Fredrickson, 1992). However, we found that these same techniques also promote high rates of false assents that were maintained even when children were interviewed by a puppet or by an unfamiliar adult. Thus, it is possible (though perhaps not inevitable) to totally ruin the accuracy of preschoolers’ reports about a range of events by exposing them to repeated potent suggestions.

Characteristics of true and false narratives

We found a number of characteristics that differentiated true from false narratives. Some of these differences, however, were not as originally predicted. Specifically, narratives for false events contained more details and more spontaneous utterances than did the narratives for true events. False

narratives also contained significantly more markers of narrative coherence or cohesiveness and more temporal markers and elaborations than did true narratives.

In addition, we found that improbable or fantastic details were more common in false than in true narratives. In contrast, Dalenberg (1997) reported that children with highly valid diagnoses of sexual abuse related more improbable or fantastic details than children with more questionable diagnoses. She concludes that one cannot discount the accuracy of a child's report of an entire event solely because of the presence of fantastic details. In the present study, where we could directly assess the accuracy of children's reports, we also found the presence of fantastic (but inaccurate) details in true reports although they were much more frequently observed in children's false reports. We conclude that the presence of fantastic details signals the presence of suggestive interviewing techniques, which have deleterious effects on children's reports, especially when the child is encouraged to report events that never happened. If these are a sign of suggestive interviews, then it becomes difficult to decide on a post hoc basis the degree to which one should ignore the fantastic detail or the entire narrative. Those who conclude that individual details should be disregarded do not fully appreciate the degree to which suggestive interviews can totally ruin the accuracy of children's reports.

True and false narratives also differed in the degree to which new information was inserted and old information was repeated in subsequent interviews. Generally, with repeated retellings, children tended to include proportionately more new information in false than in true narratives and, conversely, they also were more likely to repeat the same details in true than in false narratives. Thus, the content of false narratives changed more with retelling than did the content of true narratives.

These differences in measures of reminiscence and consistency reflect the major intent of highly suggestive interviewers who encourage children to assent to events and to provide elaborate descriptions of the events, regardless of their truth value. For true events, children did provide numerous details, but there was a limit to this exercise because the child was somewhat constrained by their actual experiences. For false narratives, because there was no original event, but only suggestions, there were no limits on the number or types of details that could be reported. The finding of high rates of reminiscence in false narratives is also consistent with previous findings that children's false reports are not limited to details of the misinformation, but that children creatively use the misinformation to construct elaborate false reports (e.g., Bruck et al., 1995a; Leichtman & Ceci, 1995; Lepore & SESCO, 1994).

Some of these findings run counter to various assumptions in the credibility assessment literature that posit that true narratives are associated with more information. Pezdek and Hodge (1999) reported that true narratives

contained more details than false narratives that were prompted by suggestion. There are a number of possible explanations for the differences in our studies. First, our suggestive techniques were more suggestive and thereby encouraged children to a greater degree to produce elaborated narratives for false events. Second, Pezdek and Hodge only counted units that were not in the original suggestion. This seems to be a very conservative test, which is not logically based on the case or the experimental literature. Our results also provide little if any support for the use of statement validity analysis to differentiate young children's true and false assertions (Kohnken, 1989). For example, compared to false assertions, true assertions are expected to contain more details, unusual details, contextual embedding, and reproduction of dialog, whereas a false assertion will appear overly rehearsed and planned, overly structured, or otherwise unnatural. Consistent with our finding, Lamb (1998) found that true and false narratives were indistinguishable on several grounds, including the total amount of information provided by the children.

The results of the present study contribute to the view that accuracy and credibility are orthogonal factors when reports have been elicited by suggestion. In the present study, for example, decreases in accuracy (as assessed by false assents) were accompanied by increases in markers of credibility. We contend that this pattern may be most typical of situations when children are suggestively interviewed. The children's narratives contain so many credible characteristics, perhaps, because the children are treated as though their narratives are actually true. It is for these reasons that perhaps statement validity analyses are not useful when applied to narratives elicited from suggestive interviews.

Changes in narratives with repeated interviews

Although repeated suggestive interviews influenced the rate of assents over time, many of the features of the narratives remained constant over time. Importantly, narratives did not increase in size or become more spontaneous or more coherent. As well, the number of aggressive-fantastic statements remained static. Finally, with the exception of a brief decrease in aggressive details for the puppet interview, the presence of a puppet interviewer or an unfamiliar interviewer did not influence the patterns of results.

Although repeated interviewing did not affect the length of the narratives, it did influence the consistency of the content of the narratives across interviews. That is, although the number of details remained the same across repeated interviews, reminiscence rates decreased while consistency and contradiction rates increased.

Using nonsuggestive interviews and longer delay intervals (1 year), e.g., Salmon and Pipe (1997) as well as Peterson et al. (2001) also found that reminiscences for experienced events were highly inaccurate. Despite the similar-

ity in these results and those of our study, the mechanism underlying the misreporting may differ among the studies. Specifically, because the delay between interviews was substantial in the Pipe and Peterson studies, the children's inaccurate reminiscences probably reflect decaying traces (forgetting) of the target event. In the present study, the delays were much shorter, the reinterviewing provided children with the opportunity to rehearse the target event, and the interviews were very suggestive. Therefore, a more likely explanation for the rise of inaccurate reminiscences in the present study concerns the suggestive interviewing procedures which encouraged children to indiscriminately provide as many details as possible regardless of their truth value. Although the effect sizes for increases in inaccurate details for the true events were small in this study, they are nevertheless important because they point to potential problems in reinterviewing children about true events. If interviewers encourage children to provide as many details as possible without any warning to monitor their productions ("Tell me only what you saw happen"), then children may incorporate fabrications into their initially true accounts.

Characteristics of positive and negative narratives

In contrast to the number of differences between true and false narratives, there were few differences between positive and negative events and these differences occurred as a function of whether the event was true or false. For true events, children provided fewer spontaneous details for negative compared to positive narratives. It is possible that this difference is due to the fact that there were fewer details to report in the negative event. Nonetheless, even if the negative event was less complex, this was the only measure in which true positive narratives differed from false positive narratives. For the false narratives, only one analysis differentiated positive and negative accounts: There were more aggressive-fantastic details in false negative accounts than in false positive accounts. This finding is not surprising given the criminal theme (a theft) of the false negative event. Children were more likely to include details about "harm" to the thief (these were improbable or aggressive) than they were to include similar details in a narrative where they helped a lady find her monkey. With these two exceptions, the structure and content of positive and negative narratives were similar.

Key components of suggestive interviews

We included a number of different types of suggestive techniques in the various interviews. Although the study was not designed to isolate the efficacy of individual techniques, there are a few glimpses of the potency of specific techniques.

First, children were provided with explicit (mis-)information about the details of the target events in both the second and third interviews. If this were an effective device, then one would expect that these details would be incorporated in T4 and T5 narratives. In an analysis of the rate of incorporation of the suggested information, we found that about 25% of each type of narrative at T4 and T5 contained the prior suggestions, and on average children used only 3 to 4 of the 13 suggestions offered at T2 and T3. Interestingly, the rate of incorporation was similar for true and false narratives (except at T4, where there was a higher incorporation rate for false negative than for other events). Finally, rates of incorporation did not change as a function of repeated interviews. Nonetheless, it is clear that the children used the suggestions to guide their narratives, although they did not parrot them word for word. For example, children were told about the thief who came to the daycare, stole food, and left by the back stairs. Although few children incorporated the details of leaving by the back stairs, many *did* provide details on the thief leaving (escaping) the building. Also, rates of assent to the target events increased as a function of the repeated suggestive interviews. Thus, it appears that it was the suggested themes rather than the exact details that children used in the construction of subsequent narratives.

A second suggestive component used in the present study was termed peer pressure. When children denied a target event, they were urged to tell because their friends had already told. Recently, Garven et al. (2000) found that telling the children how their friends had replied to a misleading question did not promote false responses. Our data suggest a more potent role for peer pressure. Within each interview, when children denied that they had experienced an event, and were then told that their friends had told about it, a number of children changed their initial denials to assents. Summing across interviews, changes in assent rates as a function of peer conformity ranged from 35 to 57%.⁷ Hence, there is some preliminary evidence that the use of peer conformity does contribute to assent rates for both true and false events.

Although Garven et al. (2000) purported to examine the independent contribution of various suggestive techniques, these techniques are rarely used in isolation (as was the case in the present study), and as a result it may be that as the use of suggestive techniques increases, there is a disproportionate increase in assent rates as the demands of the interview veer from implicit to explicit (e.g., see Leichtman & Ceci, 1995). In this rubric, it would not be possible to accurately assess the independent contribution of each suggestive technique.

⁷ Specifically, of 17 initial denials of false negative events, there were 6 subsequent assents after the use of peer conformity, or a rate of 35%. For the false positive event, there were 23 initial denials and 8 subsequent assents (34%). The rate was 43% (10/23) for true negative events and 57% (4/7) for the true positive events.

Generalizability, shortcomings, and caveats

Four specific shortcomings of this piece of research deserve to be made explicit. First, in the present study children were suggestively interviewed about *both* true and false events during each postbaseline interview. We do not know what effect this combination had on the assent rates or on the construction of the resulting narratives. For example, providing narratives about false events may have decreased the accuracy of true events when the latter occurred after the former. In an unpublished doctoral dissertation, however, Scullin (2001) found no difference due to order of true versus false events. In the real world, however, interviewers may not know the reality of the questioned events, so children might be asked to provide details about true and false events also.

Second, it is important to confine the interpretation of our results of assents to situations in which children have been engaged in repeated suggestive interviews. The interpretation of the results on narrative structure and content is confined to situations where children have been suggestively interviewed at least one time. Although false narratives are mostly produced under these circumstances, this study does not focus on the effect of repeated nonbiased narratives on the production of true narratives or false narratives. Indeed, based on the results of many studies, it appears clear that when children are first asked to tell about a recently experienced event by a nonbiased interviewers, their narratives are accurate (e.g., Peterson & Bell, 1996; Peterson et al., 2001; Poole & Lindsay, 2001; Thompson et al., 1997).

Third, the present results indicate that fine-grained analyses of false narratives produce similar patterns of results for negative as for positive events. Although some might argue that there would be lower rates of assent if the child were a participant rather than a witness in the negative event, it is not entirely clear that our data support this hypothesis. Specifically, although it was only suggested to the children that they might have seen a theft, many of those who did assent to this scenario went on to falsely report that they were active participants (e.g., tackling the thief, being chased by the thief, and hitting the thief). Therefore, it appears that if there are enough suggestive forces, children will as easily assent to false unpleasant events as they will to true pleasant events.

Fourth, the present study's conclusions would be strengthened by a design that included the same true negative event for all children rather than relying on parent or teacher reports that, of necessity, prevented equating on number of details, severity of event, and so on. As noted previously, ethical prohibitions precluded exposing children to negatively valenced events. In a related study, however, Scullin (2001) did manipulate this aspect of his study in an ethically permissible manner (asking preschool children about an ankle injury that either was staged to occur in their presence or was merely suggested but never occurred). He reported no differences between true and

false negative events on any of the various dimensions. Scullin's results suggest that the present results on narratives of true negative events would generalize to conditions that allowed for greater experimental control.

Fifth, the present results cannot be used in any logical or statistical fashion to determine the truth or accuracy of any particular child's narrative. Although our results suggest that there are some mean differences in both the structure and content of true and false narratives, there is nevertheless much overlap between the two. For example, although the central tendencies ran in the opposite direction, some true narratives did contain fantastic elements, and several false narratives were devoid of such elements. If one were to use fantastic elements as a major criterion for determining accuracy, there would be many misclassifications. Thus, rather than be used for classification purposes, the major contribution of the present data is to counter certain misconceptions about the inherent nature of true and false narratives, to raise alternative explanations for the evolution of these narratives, to provide several "existence proofs" as to the limits of suggestibility, and to generate hypotheses for future investigation.

Following this line of argument concerning the imprecision of classification of a narrative or of a detail as true or false, we come back to the finding that suggestive interviewing is a double-edged sword; it increases assents, reminiscences (both true and false), and fantastic details, for example. Because all of these phenomena occur for both true and false narratives (although they are more frequent in false narratives), we believe that one cannot make an accurate determination of the accuracy of a child's narrative that has evolved as a function of suggestive interview practices. In the present laboratory setting, we were able to make such judgments because we had full control and knowledge of the children's actual experiences and their interactions with the interviewer. In the real world, however, unless there is an eyewitness, we are not privy to such information and as a result cannot accurately determine whether a single detail or an entire narrative reflects the child's accurate account of an experience or whether it is the result of repeated erroneous suggestions. One cannot selectively decide on a post hoc basis that some low probability or fantastic detail did or did not occur. Rather, at best one can determine whether highly suggestive interviewing occurred and, if it did, then the reliability of the child's report is damaged.

References

- Asch, S. (1955). Opinions and social pressure. *Scientific American*, 193, 31–35.
- Bass, E., & Davis, L. (1990). *The courage to heal*. New York: Random House.
- Binet, A. (1900). *La Suggestibilité*. Paris: Schleicher Freres.
- Brady, M. S., Poole, D. A., Warren, A. R., & Jones, H. R. (1999). Young children's responses to yes-no questions: Patterns and problems. *Applied Developmental Science*, 3, 47–57.

- Bruck, M. (1999). A summary of an affidavit prepared for commonwealth of Massachusetts v Cheryl amirault LeFave. *Applied Developmental Science*, 3, 110–127.
- Bruck, M., & Ceci, S. J. (2002). Reliability and suggestibility of children's statements: From science to practice. In D. Schetkey & E. Benedict (Eds.), *Comprehensive textbook in child and adolescent forensic psychiatry* (pp. 137–148). Washington, DC: American Psychiatric Association.
- Bruck, M., Ceci, S. J., Francoeur, E., & Barr, R. J. (1995a). "I hardly cried when I got my shot!": Influencing children's reports about a visit to their pediatrician. *Child Development*, 66, 193–208.
- Bruck, M., Ceci, S. J., Francoeur, E., & Renick, A. (1995b). Anatomically detailed dolls do not facilitate preschoolers' reports of a pediatric examination involving genital touch. *Journal of Experimental Psychology: Applied*, 1, 95–109.
- Bruck, M., Melnyk, L., & Ceci, S. J. (2000). Draw it again Sam: The effects of repeated drawing on the accuracy of children's reports and source monitoring attributions. *Journal of Experimental Child Psychology*, 77, 169–196.
- Carter, C. A., Bottoms, B. L., & Levine, M. (1996). Linguistic and socioemotional influences on the accuracy of children's reports. *Law and Human Behavior*, 20, 335–358.
- Cassel, W., Roebers, C., & Bjorklund, D. (1996). Developmental patterns of eyewitness responses to repeated and increasingly suggestive questions. *Journal of Experimental Child Psychology*, 61, 116–133.
- Ceci, S. J., & Bruck, M. (1993). The suggestibility of the child witness: A historical review and synthesis. *Psychological Bulletin*, 113, 403–439.
- Ceci, S. J., & Bruck, M. (1995). *Jeopardy in the courtroom: A scientific analysis of children's testimony*. Washington D.C: American Psychological Association.
- Ceci, S. J., Bruck, M., & Rosenthal, R. (1995). Children's allegations of sexual abuse: Scientific and Forensic Issues. *Psychology, Public Policy and the Law*, 1, 494–520.
- Ceci, S. J., Crotteau-Huffman, M., Smith, E., & Loftus, E. W. (1994a). Repeatedly thinking about non-events. *Consciousness and Cognition*, 3, 388–407.
- Ceci, S. J., & Friedman, R. D. (2000). The suggestibility of children: Scientific research and legal implications. *Cornell Law Review*, 86, 34–108.
- Ceci, S. J., Loftus, E. W., Leichtman, M., & Bruck, M. (1994b). The role of source misattributions in the creation of false beliefs among preschoolers. *International Journal of Clinical and Experimental Hypnosis*, 62, 304–320.
- Ceci, S. J., Ross, D., & Toglia, M. (1987). Age differences in suggestibility: Psycholegal implications. *Journal of Experimental Psychology: General*, 117, 38–49.
- Conte, J. R., Sorenson, E., Fogarty, L., & Rosa, J. D. (1991). Evaluating children's reports of sexual abuse: Results from a survey of professionals. *American Journal of Orthopsychiatry*, 78, 428–437.
- Dalenberg, C. J. (1996). Fantastic elements in child disclosures of abuse. *APSAC Advisor*, 9, 1–10.
- Everson, M. (1997). Understanding bizarre, improbable, and fantastic elements in children's accounts of abuse. *Child Maltreatment*, 2, 134–149.
- Fivush, R., Haden, C., & Adam, S. (1995). Structure and coherence of preschoolers' personal narratives over time: Implications for childhood amnesia. *Journal of Experimental Child Psychology*, 60, 32–56.
- Fivush, R., Hamond, N. R., Harsch, N., & Singer, N., et al. (1991). Content and consistency in young children's autobiographical recall. *Discourse Processes*, 14, 373–388.
- Fivush, R., & Schwarzmuller, A. (1998). Children remember childhood: Implications for childhood amnesia. *Applied Cognitive Psychology*, 12, 455–473.
- Fivush, R., & Shukat, J. (1995). Content, consistency, and coherence of early autobiographical recall. In M. S. Zaragoza, J. R. Graham, G. C. N. Hall, R. Hirschman, & Y. S. Ben-Porath (Eds.), *Memory and testimony in the child witness* (pp. 5–23). Thousand Oaks, CA: Sage.

- Fredrickson, R. (1992). *Repressed memories: A journey to recovery from sexual abuse*. New York: Simon and Schuster.
- Garven, S., Wood, J. M., & Malpass, R. S. (2000). Allegations of wrongdoing: The effects of reinforcement on children's mundane and fantastic claims. *Journal of Applied Psychology*, 85, 38–49.
- Garven, S., Wood, J. M., Shaw, J. S., & Malpass, R. (1997). More than suggestion: Consequences of the interviewing techniques from the McMartin preschool case. *Journal of Applied Psychology*, 83, 347–359.
- Goodman, G., & Aman, C. (1990). Children's use of anatomically detailed dolls to recount an event. *Child Development*, 61, 1859–1871.
- Goodman, G. S., Bottoms, B. L., Schwartz-Kenney, B., & Rudy, L. (1991). Children's memory for a stressful event. *Journal of Narrative and Life History*, 1, 69–99.
- Haden, C. A., Haine, R. A., & Fivush, R. (1997). Developing narrative structure in parent-child reminiscing across the preschool years. *Developmental Psychology*, 33, 295–307.
- Han, J., Leichtman, M., & Wang, Q. (1998). Autobiographical memory in Korean, Chinese, and American children. *Developmental Psychology*, 34, 701–713.
- Hembrooke, H., Toglia, M., Ross, D. (April, 1991). *Children's suggestibility: The role of biased credibility*. Paper presented at biennial meeting of the Society for Research on Child Development, Seattle WA.
- Horner, T. M., Guyer, M. J., & Kalter, N. M. (1993). Clinical expertise and the assessment of child sexual abuse. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32, 925–931.
- Howe, M. L. (1998). Language is never enough: Memories are more than words reveal. *Applied Cognitive Psychology*, 12, 475–481.
- Kohnken, G. (1989). Behavioral correlates of statement credibility: Theories, paradigms, and results. In H. Wegener, F. Losel, & H. Jochen (Eds.), *Criminal behavior and the justice system: Psychological perspectives* (pp. 271–289). New York: Springer, pp. 271–289.
- Lamb, M. E. (1998). Assessments of children's credibility in forensic contexts. *Current Directions*, 7, 43–46.
- Lampinen, J. M., & Smith, V. L. (1995). The incredible (and sometimes incredulous) child witness: Child eyewitnesses' sensitivity to source of credibility cues. *Journal of Applied Psychology*, 80, 621–627.
- Leichtman, M. D., & Ceci, S. J. (1995). The effects of stereotypes and suggestions on preschoolers' reports. *Developmental Psychology*, 31, 568–578.
- Leippe, M. R., Manion, A. P., & Romanczyk, A. (1992). Eyewitness persuasion: How and how well do fact finders judge the accuracy of adults' and children's memory reports? *Journal of Personality and Social Psychology*, 63(2), 181–197.
- Lepore, S. J., & Sescio, B. (1994). Distorting children's reports and interpretations of events through suggestion. *Applied Psychology*, 79(1), 108–120.
- Lindsay, D. S., Johnson, M. K., & Kwon, P. (1991). Developmental changes in memory source monitoring. *Journal of Experimental Child Psychology*, 1–22.
- McCabe, A., & Peterson, C. (Eds.). (1991). *Developing narrative structure*. Hillsdale, NJ: Erlbaum.
- Ornstein, P., Gordon, B. N., & Larus, D. (1992). Children's memory for a personally experienced event: Implications for testimony. *Applied Cognitive Psychology*, 6, 49–60.
- Parker, J. (1995). Age differences in source monitoring of performed and imagined actions on immediate and delayed tests. *Journal of Experimental Child Psychology*, 60, 84–101.
- Payne, D. G. (1989). Hypernesia and reminiscence in recall: A historical and empirical review. *Psychological Bulletin*, 101, 5–27.
- Peterson, C., & Bell, M. (1996). Children's memory for traumatic injury. *Child Development*, 67, 3045–3070.
- Peterson, C., & Grant, M. (2001). Forced Choice: Are forensic interviewers asking the right question? *Canadian Journal of Behavioral Science*, 33, 118–127.

- Peterson, C., Moores, L., & White, G. (2001). Recounting the same events again and again: Children's consistency across multiple interviews. *Applied Cognitive Psychology, 15*, 353–371.
- Pezdek, K., Finger, K., & Hodge, D. (1997). Planting false childhood memories: The role of event plausibility. *Psychological Science, 8*, 437–441.
- Pezdek, K., & Hodge, D. (1999). Planting false childhood memories in children: The role of event plausibility. *Child Development, 70*, 887–895.
- Pipe, M.-E., Gee, S., Wilson, J. C., & Egerton, J. M. (1999). Children's recall 1 or 2 years after an event. *Developmental Psychology, 35*, 781–789.
- Poole, D. A., & Lindsay, D. S. (1995). Interviewing preschoolers: Effects of nonsuggestive techniques, parental coaching and leading questions on reports of nonexperienced events. *Journal of Experimental Child Psychology, 60*, 129–154.
- Poole, D. A., & Lindsay, D. S. (2001). Children's eyewitness reports after exposure to misinformation from parents. *Journal of Experimental Psychology: Applied, 7*, 27–50.
- Poole, D.A., Lindsay, D.S. (in press). Children's eyewitness reports after exposure to misinformation from parents. *Journal of Experimental Child Psychology*.
- Poole, D. A., & White, L. (1991). Effects of question repetition on the eyewitness testimony of children and adults. *Developmental Psychology, 27*, 975–986.
- Qin, J., Quas, J., Redlich, A., & Goodman, G. (1997). Children's eyewitness testimony: Memory development in the legal context. In N. Cowan et al. (Eds.), *The development of memory in childhood: Studies in developmental psychology* (pp. 301–341). Hove, UK: Psychology Press, pp. 301–341.
- Quas, J. A., Goodman, G. S., Bidrose, S., Pipe, -E., Craw, S., & Ablin, D. S. (1999). Emotion and memory: Children's long-term remembering, forgetting and suggestibility. *Journal of Experimental Child Psychology, 72*, 253–270.
- Rawls, J. (1996). *How question form and body-parts diagrams can affect the content of young children's disclosures*. Paper presented at the NATO Advanced Study Institute, Recollections of trauma: Scientific research and clinical practice. Port de Bourgenay, France.
- Ross, D. F., Dunning, D., Toglia, M., & Ceci, S. J. (1990). The child in the eyes of the jury. *Law & Human Behavior, 14*, 5–23.
- Rudy, L., & Goodman, G. S. (1991). Effects of participation on children's reports: Implications for children's testimony. *Developmental Psychology, 27*, 527–538.
- Salmon, K., & Pipe, -E. (1997). Providing props to facilitate young children's event recall: The impact of a one year delay. *Journal of Experimental Child Psychology, 65*, 261–292.
- Scullin, M. (2001). *Measurement of individual differences in children's suggestibility across situations: A validation study*. Unpublished doctoral thesis, Cornell University. Ithaca, NY.
- Shaw, J. S., Garven, S., & Wood, J. M. (1997). Co-witness information can have immediate effects on eyewitness memory reports. *Law and Human Behavior, 21*, 503–523.
- Templeton, L.M., & Hunt, V. (April, 1997). *The effects of misleading information and level of authority of interviewer on children's eyewitness memory*. Poster presented at the Society for Research in Child Development, Washington, DC.
- Thompson, W. C., Clarke-Stewart, K. A., & Lepore, S. (1997). What did the janitor do? Suggestive interviewing and the accuracy of children's accounts. *Law & Human Behavior, 21*(4), 405–426.
- Tobey, A., & Goodman, G. S. (1992). Children's eyewitness memory: Effects of participation and forensic context. *Child Abuse & Neglect, 16*, 779–796.
- Walker, N., Lunning, S., & Eilts, J. (1996). *Do children respond accurately to force choice questions?* Paper presented at the NATO Advanced Study Institute, Recollections of Trauma: Scientific Research and Clinical Practice, Talmont Saint Hilaire, France, June.
- Welch-Ross, M. (1995). Developmental changes in preschoolers' ability to distinguish memories of performed, pretended, and imagined actions. *Cognitive Development, 10*, 421–441.
- Wood, J. M., & Garven, S. (2000). How sexual abuse interviews go astray: Implications for prosecutors, police, and child protection services. *Child Maltreatment: Journal of the American Professional Society on the Abuse of Children, 5*, 109–118.