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# Developmentally Sensitive Forensic Interviewing of Preschool Children: Some Guidelines Drawn From Basic Psychological Research

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Interviewing preschool children who are victims or witnesses of crime to ensure accuracy and completeness of their recall is no easy task. Rising up to the challenge, a large number of empirical psychological studies related to interviewing young children have been conducted in the past decades. Most of these studies were applied research, simulating circumstances of real forensic interviews. It is believed, however, that more basic research could also be informative. The present article thus selectively reviews more basic psychological research in the areas of memory development, language development, and conceptual development as they relate to the forensic interviewing of preschool children. Based on characteristics of preschool children's development in these areas, some useful guidelines are generated for forensic interviewers. Recommendations for future research are also made.

**Keywords:** forensic interviewing; preschool children; child eyewitnesses; memory development; language development; conceptual development

Historically, the U.S. court system has treated children's testimony with suspicion. Young children, in particular, are believed to be incompetent witnesses because of concerns over their memory limitations, linguistic immaturity, and conceptual underdevelopment. Thanks to empirical research in the past decades showing that children, even preschoolers, can be competent witnesses, children are now allowed to testify in court. To examine how basic psychological research, like more applied research, can also inform public policy in the forensic interviewing of preschool children, the present article will first selectively review some basic psychological research on preschool children's memory development, language development, and conceptual development. Then, based on this review, the article will generate some guidelines for forensic interviewers of preschool children, such as police officers, attorneys, judges, and social workers. Finally, this article will point out directions for future research.

There is an extremely large body of research on the forensic interviewing of children. These research studies were mostly applied in nature, simulating various circumstances that might occur in forensic settings. For example, during forensic interviewing, children can be repeatedly or suggestively interviewed, and they can be interviewed by more or less supportive interviewers. A large number of studies have thereby used the paradigm of exposing children to the target event and then interviewing them repeatedly, suggestively, and conducting the interviewing using interviewers of varied levels of support. These applied studies have been very informative, shedding light on interviewing techniques that should

be used and techniques that should be avoided. A number of reviews (e.g., Goodman & Shaaf, 1997; Quas, Goodman, Ghetti, & Redlich, 2000; Saywitz, Goodman, & Lyon, 2002) have summarized many of these studies. Relying on this literature, London (2001) generated a series of guidelines for police officers when interviewing children. Using the same empirical base, Poole and Lamb (1998) have also written a guidebook for professionals who routinely conduct investigative interviews of children. Because young children were found to be particularly susceptible to interviewer suggestion relative to older children and adults (see a review by Bruck & Ceci, 1999), much research effort has also focused on the suggestibility of young children, emphasizing the importance of not asking leading or suggestive questions when conducting forensic interviews (see reviews by Ceci, Bruck, & Battin, 2000; Davis, 1998; Saywitz & Lyon, 2002).

Despite the number of reviews and guidelines that have already been compiled on the forensic interviewing of children, the present article fills a void in the literature by focusing on the forensic interviewing of preschool children (i.e., approximately between ages 3 and 5). Although guidelines for interviewing children in general can certainly apply to preschool children, preschoolers may be particularly challenging to interview because of their very young age and increased vulnerability to suggestion. Therefore, the topic of interviewing preschool children is worthy of special attention. Because of this review's special focus on preschool children, there is an absence of recent work with children of this particular age group on certain topics; in these instances, older but relevant work will be reviewed. The present article also adds to the literature by emphasizing basic psychological research. Although extant reviews have mostly summarized empirical studies of an applied nature, in which the main purpose was to investigate various interviewing strategies, more basic psychological research, where the focus is broader, can also contribute to our understanding of young children's capabilities as witnesses. With the above considerations in mind, let us turn to some basic psychological research on young children's memory, language, and conceptual development.

## Memory Development

For a long time, the phenomenon of "childhood amnesia," where adults cannot usually recall events that occur prior to 3.5 to 4 years of age, has been attributed primarily to poor memory early in development (Eacott, 1999; Fivush & Nelson, 2004; Hayne, 2004). However, empirical research would find that although adults experience "childhood amnesia," young children are often able to recall events experienced in the first few years of life (Fivush, Haden, & Adam, 1995; MacDonald & Hayne, 1996). For example, Fivush et al. (1995) repeatedly interviewed preschoolers about several personally experienced events when the children were at 40, 46, 58, and 70 months of age. Even when interviewed at 40 months, children's narratives were quite coherent, although older children's narratives were even more coherent. Children's recall of past events was also remarkably stable over long delays, such that recall at 70 months for events that occurred prior to 40 months was as structured and coherent as recall for more recent events. When the children were re-interviewed at the age of 8 (Fivush & Schwarzmüller, 1998), they continued to recall these events accurately and with much detail.

There are several caveats to the Fivush et al. (1995) and Fivush and Schwarzmueller's (1998) studies when applying their findings to the forensic interviewing of young children. First, the repeated interviews in the study might have served as rehearsal opportunities to improve children's recall. In forensic settings, these rehearsal opportunities may or may not be present. In cases where a child is interviewed multiple times by different interviewers such as parents, teachers, police, social workers, or attorneys, the child has several opportunities to rehearse. Although this is certainly possible, it is also likely that research findings (e.g., see a review by Bruck, Ceci, & Hembrooke, 2002) regarding the negative impact of repeated suggestive interviews on young children's memory will persuade professionals in the field to reduce the number of times each child witness is interviewed. Therefore, children may or may not experience as many interviews in forensic settings as those in the studies conducted by Fivush et al.

Second, despite using parents as judges, accuracy of these autobiographical recalls could not be ascertained as parents' memory also fades with time. Finally, when researching children's autobiographical recall in naturalistic settings, one cannot know if the children truly remember the past events. They could have constructed the memories based on continued discussions with their parents. As Peterson (2002) observed, although some studies (such as the above conducted by Fivush et al.) found children's long-term autobiographical memory to be robust, other studies found substantial deterioration in children's autobiographical memory as the delay increases. One such study was conducted by Boyer, Barron, and Farrar (1994), which revealed that 3-year-old children failed to show memory of a nine-action event sequence (i.e., "Making Play-Doh spaghetti") that they learned at 20 months of age. Major differences between Fivush et al. (Fivush et al., 1995; Fivush & Schwarzmueller, 1998) and Boyer et al. (1994) was that children in the Fivush studies were considerably older, that they were interviewed about personally experienced events that were rich in verbal context, and that children were interviewed about events that had occurred when they were much older than 20 months of age. These differences may account for the inconsistencies in research findings.

In summary, keeping these caveats in mind, Fivush et al. (1995) and Fivush and Schwarzmueller (1998) showcased the possibility for structure and coherence in middle to older preschool children's recall of personally experienced events. In addition to exhibiting structure and coherence, preschoolers' recall possesses other interesting features as well. In a longitudinal study of children's autobiographical recall between 2.5 and 4 years, Fivush and Hamond (1990) interviewed children at two time points about personally experienced events that were shared with their mothers. The first interview occurred when the children were about 2.5 years old, and the children were interviewed by their mothers. Six weeks later, a stranger interviewed the children for the second interview. Results revealed that children reported more information in the second interview with the stranger than in the first interview with the mother. The authors argued that this could be due to children's understanding of the difference between reminiscing and recounting. When the mother was the interviewer, children might know that the interview was more of a social conversation about shared experiences (reminiscing). When a stranger was the interviewer, children might sense that they needed to provide information (recounting) to the naïve stranger.

Because the interviews were not counterbalanced and the children were older at the second interview, alternative explanations of the above findings were possible. For instance, the

second interview might have generated more information because the first interview served as a rehearsal opportunity for the children. Also, six weeks could have been a long time in a young child's developmental trajectory. Children might have simply developed better verbal skills in the second interview. In a similar study (MacDonald & Hayne, 1996) involving twenty 3- to 4-year-old children during which the children experienced a unique event without the parents present, children still reported a lot more information in an interview with a stranger than in discussions with their parents. If children of this age range indeed understand the difference between reminiscing and recounting, they should have recounted both to their parents and to the stranger, providing their parents and the stranger an equal amount of information. The fact that this was not the case cast doubt on Fivush and Hamond's (1990) conclusions. Although MacDonald and Hayne (1996) did differ from Fivush and Hamond in that the interview was initiated by the stranger but discussions with parents were initiated by the child. Children in Fivush and Hamond did not initiate the conversations with either. Methodological issues aside, Fivush and Hamond raised the possibility that preschool children may know when to reminisce and when to recount. Alternatively, adult-initiated conversations might encourage more reports from children. Finally, there is the possibility that preschool children will report more information to a stranger than to their parents.

In addition to structure, coherence, and the possible ability to differentiate between reminiscing and recounting, another characteristic of young children's memory development is that their recall can improve a great deal with outside help. Myers and Perlmutter (1978) studied 3- and 4-year-olds' memory capability and found that when recalling toys, retrieval aids that provided realistic setting (such as a doll house with garden and garage) for the target items facilitated children's recall. In forensic settings, although young children are interviewed about objects (or people) that they saw, they are also questioned about behaviors, conversations, and the environment. Myers and Perlmutter's research did not address the question of whether young children's memory for different components of an event calls for different retrieval aids.

Consistent with Myers and Perlmutter (1978), Macklin (1994) also found that visual retrieval aids are helpful to preschoolers. In Macklin's research, eighty 4- to 6-year-old children watched an advertisement for a fictitious cereal. Half of the children who could not recall the cereal's name were presented with a visual retrieval cue (i.e., a cereal box with graphics), and the other half of the children were not given the cue. Children who were exposed to the visual retrieval cue remembered the name of the cereal better than the children without the cue. Kail (1990) theorized that the development of memory in large part is the development of mnemonic strategies. Because preschool children are still in the process of developing mnemonic strategies, external retrieval aids are especially helpful in improving their recall.

Now that we have some basic idea about how young children remember, let us examine a topic in young children's memory development that is especially important: the recall of trauma. Although Terr (1991) argued that traumatic events tend to be fragmentary or non-existent, research seems to show otherwise. Reviews of empirical research on children's trauma memory (e.g., Berliner, Hyman, Thomas, & Fitzgerald, 2003; Cordon, Pipe, Sayfan, Melinder, & Goodman, 2004; Fivush, 1998) concurred that despite tending to have less sensory detail and coherence, memories for trauma for the most part resemble those of non-traumatic events. Fivush (1998) concluded in her review that traumatic events that occurred

before 18 months are not reportable by preschool children. Those that experienced the event between 18 months and 2.5 to 3 years are reported in bits and pieces. For traumatic events occurring after age 2.5 to 3 years, children are able to give coherent accounts of them.

Because children's memories for trauma resemble their memories for other more positive events, retrieval aids should be helpful in assisting children with trauma memory as well. Because of the emotion-laden nature of traumatic events, Liwag and Stein's (1995) study on emotion-related retrieval cues has relevance here. Children between the ages of 3 and 5 participated in this study. Parents were first asked to generate events that occurred in the week or two before the interview in which their children experienced happiness, sadness, anger, and fear. Children recalled these events in four conditions: control, emotional label, emotion face, and emotional reinstatement. In the control condition, children were simply asked to recall the target event. In the emotional label condition, children were asked to generate a verbal label corresponding to their emotional reaction. The emotion face condition additionally required the children to make a face appropriate to the emotion. In the emotional reinstatement condition, children labeled the emotion, made a face that matches the emotion, and were asked to reinstate their original emotion. Children in the emotional reinstatement condition outperformed children in all other groups in the quantity, quality, and organization of their recall. Emotional reinstatement thus appeared to improve young children's recall through providing them with more associations to the target events.

Although young children's memory development is most relevant for forensic interviewers, young children's language development is another important area for interviewers to become familiar with. Unlike assessing memories using the method of recognition, the method used most often in forensic interviews is verbal recalling. Therefore, children's ability to verbally recall events determines the outcome of a forensic interview. Whether young children will be able to verbally recall what they remember is related to their language development.

## Language Development

The first sign of language is the appearance of babbling, a phenomenon that generally occurs around 6 months (Reich, 1986). It appears that words are understood before they are spoken. After learning about words (lexicon) and word meanings (semantics) in the first 2 years of life, children start to understand sentence structure (syntax) and the context of language use (pragmatics) during the preschool years. Reich (1986) reported that by age 3, children are talking at least as much as adults. In addition, when engaged in conversations with others, preschoolers can speak clearly, use well-formed grammar, and adapt to the listener's perspective. Specifically, Klecan-Aker and Swank (1988) interviewed preschoolers aged 2 to 5 using materials such as toys and pictures. They talked to the children to elicit eight language functions: labeling, description, revision, affirmation/negation, personal, requesting, greetings, and turn taking. The researchers found that appropriate responses increased with age, although leveling off after age 3. All eight language functions were in most preschoolers' repertoire by 3.5 years.

Although 3-year-olds seem to have developed basic conversational skills in Klecan-Aker and Swank's (1988) laboratory, where the primary focus was to elicit language functions, it is important for forensic interviewers to know if 3-year-olds report personally experienced



events using the language skills that they possess. Simcock and Hayne's (2002, 2003) research brought light to bear on the issue. Two- to 4-year-old children played a game using the Magic Shrinking Machine and were subsequently interviewed about this experience after delays ranging from 24 hr to 1 year. Children's general language skill was assessed at the time of the experience and at the interview. Simcock and Hayne found the following: First, older children recalled better than younger children. Second, children performed better with a shorter delay. The most interesting finding was that children did not once use a word that had not been a part of their productive vocabulary at the time of the game playing in their later verbal recall. In other words, preschool children's verbal recall of events lags behind their verbal abilities. Per Simcock and Hayne (2002), it appears that for preschool children, even after they have obtained basic language skills, their verbal reports of the event might be "frozen in time" (p. 229), reflecting their language ability at the time of the encoding, not retrieval. Therefore, the age and language skills of a child when the target event occurred are important factors to consider when evaluating the child's potential for recalling the experience.

Although preschool children have developed some language skills to be interviewed, all questions do not work equally well with them. Some formats of questions are found to be more problematic for young children than others. Hughes and Grieve (1980) examined 5- and 7-year-olds' response to nonsense questions. They found that when asked bizarre questions in the yes/no format (e.g., "Is milk bigger than water?" and "Is red heavier than yellow?"), children usually responded with "yes" instead of the correct answer of "I don't know." It would thus appear that children understand the need for a "yes" or "no" answer when asked questions in yes/no format, even though this understanding led them astray in this case. It is possible that young children operate under the assumption that adults always ask meaningful questions, and thus they should provide answers even for bizarre questions. Although this study examined children mostly older than those in the preschool age, there are no theoretical reasons to believe that younger children will not behave similarly.

Peterson and Biggs (1997) included such a group of younger children in their study. They interviewed 2- to 13-year-olds about their emergency room visits. The accuracy of children's recall was assessed through comparing their responses with those provided by the caregivers and information on the hospital records. Mirroring the Hughes and Grieve (1980) study, 2-, 3-, and 4-year-old children had a particular difficulty with yes/no questions relative to 9- and 13-year-olds: Although they seemed fairly accurate when answering yes/no questions with "yes," they were only correct about half of the time when they answered yes/no questions with the response "no." Along the same line, Myers et al. (2003) conducted two experiments with 3-year-old children on their memory of a physical examination. Using a recognition-based interview consisting of all yes/no questions, Myers et al. found a high rate of false alarms (answering yes when the correct answer was no) among the children, leading the researchers to conclude that young children's answers to yes/no questions need to be interpreted with great caution.

Unlike yes/no questions, forced-choice questions clearly stating both options provide children the flexibility to choose. Siegal and Peterson (1998) conducted a series of three experiments with children between the ages of 3 and 5. Participants learned different stories concerning a bear that lied about a piece of bread's contact with bugs or made an honest mistake about the bread's contamination or was negligent when making the mistake. Instead of using yes/no questions (e.g., "Did the bear lie?") or forced-choice questions with

the alternative term *mistake* unstated (e.g., “Did the bear lie or not?”), Siegal and Peterson employed forced-choice questions clearly stating both options (i.e., “Did the bear lie or make a mistake?”). This question format enabled most children, including the 3-year-olds, to distinguish between a lie and a mistake. More remarkably, most 3-year-olds even distinguished between an honest mistake and a negligent mistake. A previous study (Siegal & Peterson, 1996) using the question “Did the bear lie or not?” found most children between the ages of 3 and 5 unable to distinguish between a lie and a mistake: They tended to respond that the bear lied. It is possible that because the alternative of making a “mistake” was not stated in the question, children were drawn by the suggested answer of lying. In other words, the term *or not* in the question “Did the bear lie or not?” might not represent a true alternative to “lie.” Although you can change all yes/no questions into forced-choice questions by adding the phrase *or not* (e.g., “Did the bear make a mistake or not?” “Was it Johnny or not?”), these type of forced-choice questions in actuality resemble yes/no questions even as they assume the appearance of forced-choice questions. Therefore, it is best for forced-choice questions to stress all possible options. Siegal and Peterson’s studies demonstrated the importance of providing true options to young children when using forced-choice questions.

To compare yes/no questions with *wh* questions (questions that often start with “who,” “what,” “when,” “where,” and “why” and are a form of open-ended questions), Peterson, Dowden, and Tobin (1999) recruited 3- to 5-year-olds to individually participate in an artwork-making activity with experimenters. Children were then interviewed a week later with 18 questions. The questions covered the content areas of action, person, and environment. The error rate was 30% for yes/no questions and 15% for *wh* questions. When the 50% chance for correct answers in the yes/no questions was taken into consideration, the above difference became even bigger. Not only were *wh* questions superior to yes/no questions in reducing errors, *wh* questions also enabled preschool children to acknowledge their ignorance by responding with “I don’t know” when answering some inquiries. “I don’t know” was seldom elicited by yes/no questions even if it was the correct response, mirroring Hughes and Grieve’s (1980) study on nonsense questions.

In addition to *wh* questions, other open-ended questions include invitations (e.g., “Tell me more about that.”). The strengths of *wh* questions and invitations were highlighted in Sternberg et al.’s (1996) applied research interviewing 4- to 12-year-old children who reported sexual abuse. Invitations were found to produce more detailed reports than other forms of questions. Invitations or *wh* questions also elicited more relevant details from children who experienced multiple incidents of abuse. To summarize, research suggests that invitations and *wh* questions are superior to yes/no questions when interviewing preschool children, whereas forced-choice questions fall somewhere in between. Although memory development and language development build a foundation for the forensic interviewing of young children, conceptual development is the underlying component to both developments. Now we will turn our attention to young children’s conceptual development.

## Conceptual Development

Thanks to the work of giants such as Swiss psychologist Jean Piaget, we now know that children are not miniature adults. Instead, young children think in very different ways from



adults. Young children's understanding of scripts, symbols, and knowledge acquisition has direct relevance to the practices of forensic interview. According to Flavell, Miller, and Miller (1993), scripts are generalized and abstract event representations. Scripts have also been defined as cognitive frameworks for events, which are memories about what usually or typically occurs in a particular situation (Santrock, 2005). For example, a script about going to the supermarket will likely include taking a shopping cart, selecting merchandises, putting the purchases in the shopping cart, and paying at the checkout counter.

To examine children's script development, Adam and Worden (1986) interviewed 3- to 4-year-olds and 7- to 8-year-olds to test the hypothesis that memory for script-related information would be poorer than memory for unique information. After hearing stories that contained many scripted items (e.g., brushing teeth, taking a shopping cart, or ordering food from server) and atypical items (e.g., drinking a glass of water, dropping a can of tomatoes on the floor, or chewing on ice cubes) in the scripts of "getting up in the morning," "going to a grocery store," and "going to a restaurant," children were tested in their recognition memory about scripted and atypical items. As predicted, older children performed better, and atypical items were remembered better. There was also an interaction between age and typicality: Although younger and older children did not perform differently for scripted items, older children performed better recognizing atypical items. Therefore, Adam and Worden revealed that preschool children's memory on scripted items could be as good as those of older children. A word of caution about the application of this study to the forensic interviewing of young children is that because children's memory was tested through the method of recognition, it is unknown if changing the assessment method to verbal recall will generate similar results.

We have reasons to believe, however, that changing the memory assessment method from recognition to recall may also find young children remembering scripted items better than atypical items. Low and Durkin (2000) presented 5-, 7-, 9-, and 11-year-old children a TV story either in a scripted version or a jumbled (i.e., out of the usual order of events) version. Before the age of 9, young children recalled the scripted version better than the jumbled version. After 9, children recalled the jumbled version as well as the scripted version. In addition, the younger 5- and 7-year-old children tended to reorder the story units in the jumbled version in their recall, indicating their automatic use of script information in remembering.

Consequently, it seems that children understand scripts before they understand the atypical aspects of events. They understand the atypical in the context of the typical. Because older children have a firmer understanding about scripts than younger children, they are better able to detect things that are different from the usual. Paradoxically, this more tenuous understanding about scripts sometimes serves the younger children well. Ornstein et al. (1998) arranged for 4- and 6-year-olds to receive a special medical check-up that included or excluded some procedures that are expected (e.g., listening to chest) and some that are unexpected (e.g., asking the child to walk backward). The children were interviewed immediately and after a 12-week delay. Many children mistakenly remembered typical but omitted procedures (i.e., false alarm) at the 12-week interview. Specifically, 42% of the 4-year-olds and 72% of the 6-year-olds made at least one such intrusion. Four-year-olds' less solid script understanding seemed to have enabled them to have less spontaneous intrusions than 6-year-olds.

In addition to scripts, symbols are another important concept relevant to the forensic interviewing of preschool children. Symbols are objects that are used to represent other things. Preschool children's understanding of symbols has a huge impact on the effectiveness of props and cues as memory retrieval aids. The foregoing section on memory development discussed the importance of using retrieval aids to assist young children's recall. Becoming knowledgeable about young children's understanding of symbols will in turn help forensic interviewers in the selection of the type of retrieval aids that will be most useful.

In a series of four experiments, DeLoache (1991) used scale models and pictures to assess symbolic understanding in 2.5-year-olds. Study 1 found that although only a minority of the 2.5-year-olds was able to find toys in a room based a three-dimensional scale model of the room, a majority of them were able to find the toys using a photograph of the room. DeLoache theorized that the ability to dual represent (i.e., representing the scale model/photograph as both an object and a symbol) is necessary for these retrieval aids to be used successfully. Because children younger than 3 have yet to develop dual representation, they are unable to benefit from the three-dimensional scale model: The three-dimensional scale model is very salient as an object to young children, and its symbolic function is masked. Photographs, in contrast, are familiar to children as symbols: Even young children have much experience using photos as symbols. Photographs are, therefore, not salient as objects. Because young children only perceive photographs as symbols, there is no need to dual represent to use photographs successfully. The next three experiments found additional support for the dual representation hypothesis, in that as long as there is no need to dual represent, young children can benefit from the use of props and retrieval aids. It should be noted that there is rapid development in children's ability to dual represent, so that by age 3, most children can successfully complete the toy-seeking task using the scale model (DeLoache, 1987).

Overall, however, preschool children do not seem to benefit from three-dimensional scale models such as anatomically detailed dolls even after they have developed dual representation abilities. For instance, DeLoache and Marzolf (1995) interviewed 2.5-, 3-, and 4-year-old children and found that children of this age range were able to report more correct information without, than with, the assistance of an anatomically detailed doll. The authors posited that even after the understanding of dual presentation is developed, children still need to understand the doll-self mapping for the anatomically detailed dolls to be useful. In other words, after knowing that the doll represents their body, children need to know how body parts on the doll map onto their own body parts. The ability to understand the mapping process takes additional time to develop. It can be argued further that when the understanding of dual representation is tenuous, the anatomically detailed doll might continue to draw attention away from the interview process by presenting as a novel object. The above studies taught us the lesson that retrieval aids do not always improve young children's recall. Sometimes, they have the opposite effect. In summary, the weight of the evidence (also see Hungerford, 2005, who reviewed many applied research directly evaluating anatomically detailed dolls) does not support the use of anatomically detailed dolls in the forensic interviewing of preschool children.

Besides scripts and symbols, preschool children's understanding of knowledge acquisition is another area that is relevant to the forensic interviewing process. Preschool children seem to realize that informational access is essential to knowing (e.g., Wimmer, Hogrefe,

& Perner, 1988). This might be why children reported more information in recounting than in reminiscing (Fivush & Hamond, 1990): Children might have realized that the naïve interviewer did not have access to the target event and thus did not know. Yet young children still have difficulty sorting out the sources of their knowledge. For example, Gopnik and Graf (1988) found that 3-year-olds were not able to discern whether they saw some objects, were told about the objects, or merely inferred about the objects. Five-year-olds, on the other hand, did not have such difficulty. Taylor, Esbensen, and Bennett (1994) additionally found that children as old as 5 experienced difficulty recognizing that they had just learned something new, instead they claimed to have always known what they had just learned a few minutes ago. In short, preschool children are developing metacognitive awareness, and their difficulty with recognizing the sources of their knowledge might have contributed to their susceptibility to suggestions during forensic interviews (e.g., Quas, Schaaf, Alexander, & Goodman, 2000; Thierry & Spence, 2002; Welch-Ross, 2000). Young children's understanding of knowledge acquisition can be summarized as being fragile during the early preschool years and becoming more solid later in the preschool age.

The above selective review of basic psychological research relevant to the forensic interviewing of preschool children has revealed strengths as well as weaknesses in the ability of preschool children as witnesses. Next, we will use this knowledge on child development to generate some guidelines for the forensic interviewing of preschool children.

## **Guidelines For Interviewing Preschool Children**

When young children are suspected to be victims or eyewitnesses of crimes, forensic interviewers need to make a decision about whether to interview a particular child. Because there are no established guidelines about making this decision, many interviewers make the decision intuitively, often based solely on language abilities: If the child is not verbal, interviewing obviously will not work; if the child is verbal, interviewers often choose to proceed with the interview. From what we know about preschoolers' memory, language, and conceptual development, a few more guidelines can be generated.

We learn from the preceding review that on average, preschoolers give coherent accounts of personally experienced events, especially for those older than 3 years of age. In addition, around 3, children's mastery of major language functions plateau. Overall, children are able to participate in basic conversations by age 3. Therefore, children 3 years of age and older can and should be interviewed. Yet preschoolers might experience something we would term *language determined memory*, which limits their ability to verbally recall events experienced before age 2. Language determined memory is the phenomenon that young children cannot translate their preverbal memory into later verbal recall during the preschool years (Simcock & Hayne, 2002, 2003). It seems critical that for children to verbally report a past event, the event needs to be encoded verbally. Because children younger than 2 are still in the word-learning stage of language development, they do not encode memory in coherent verbal format such as in sentences. Therefore, although preschoolers can give fairly good autobiographical recall, they might not be able to coherently report events that occurred before age 2 because of very limited language abilities at that age.

The guidelines for determining whether to interview a preschooler thus follow: First, the child needs to be able to engage in verbal conversations. Second, the child probably needs

to be older than 3, although individual differences are to be accommodated. This means that the interviewer may choose to interview a very verbal 2.5-year-old or choose not to interview a 3.5-year-old who is slower in language development. Finally, if the crime occurred after the child is 2 years or older, the child may be able to report the event in coherent sentences. This “older than 3 after 2” principle can be used as a rule of thumb when making decisions about whether to interview a preschooler: Children older than 3 who fell victim to or witnessed a crime after the age of 2 are potentially good information providers. Of course, forensic interviewers should always expect exceptions to the rule because of individual developmental differences among young children.

After deciding to interview a preschooler, the first order of business for forensic interviewers is to elicit accurate information from the child. Because preschool children are particularly susceptible to interviewer suggestion, forensic interviewers need to reduce suggestion in their questions. An effective means of doing so is asking questions in the right format. The earlier review points out that preschool children have a particular difficulty with yes/no questions. As a result, transforming the questions into forced-choice format is recommended. Keep in mind, however, that merely adding “or not” at the end of a yes/no question (i.e., “Did he wear a white shirt or not?”) does not necessarily make the question any better, even though the question now takes the form of a forced-choice question. A forced-choice question that helps children with the accuracy of their reports needs to clearly present both options (i.e., “Did he wear a white shirt or blue shirt?). To maximize children’s reporting of accurate information, forensic interviewers should go into the interview with a game plan to include a hierarchy of questions, proceeding in a bottom to top fashion from invitations (e.g., “Tell me about yesterday.”) to *wh* questions (e.g., “What happened in the supermarket yesterday?”) to forced-choice questions stating all options (e.g., “Did he wear a white shirt, a blue shirt, or a red shirt?) and to yes/no questions (e.g., “Did he wear a white shirt?”). Because question formats near the top of the hierarchy tend to be more suggestive, forensic interviewers should use invitations and *wh* questions liberally. Forced-choice questions with choices clearly stated can be used sparingly. Yes/no questions should be avoided if possible.

Despite the best of efforts, interviewers sometimes have to fall back on forced-choice and yes/no questions to extract necessary details. In preparation for these instances, interviewers should let preschool children know that it is okay to say “I don’t know” when appropriate. In addition to permitting children to say “I don’t know,” interviewers should also explain the reasons why saying “I don’t know” is okay. Although most preschool children have made the connection between access to information and knowledge at this age, the understanding is still tenuous. Let young children know that because the interviewer was not present when the event occurred, the interviewer does not know what happened. Only the children have the correct information. In addition, even the children themselves might not have answers to all questions or remember everything. Therefore, it is perfectly acceptable to say “I don’t know.”

After ascertaining the accuracy of children’s reports as much as possible, the next important task for forensic interviewers is to help young children give as complete a recall as possible. Interviewers can increase the amount of information children provide by admitting or even emphasizing ignorance. Preschool children may be able to recount instead of reminisce when speaking with a naïve interviewer. Also, keep in mind that interviewer-initiated

conversations and stranger interviewers are associated with a greater amount of recall. By initiating conversations through questioning and by reminding children that the interviewer is ignorant, a forensic interviewer increases the chance of extracting the greatest amount of information from children.

Although young children are weaker than older children and adults in all aspects of memory, their weakness in retrieval strategies stands out the most. Therefore, it is important that some kind of interviewer-aided recall takes place for preschool children to provide the most amount of information. One such aid is emotional reinstatement, considering that experiencing or witnessing a crime is often emotion laden. Emotional reinstatement is done first by asking children to label the feelings they had while experiencing the emotional event. Then ask children to make a face that matches the emotion label. Finally, ask children to act like they are feeling just like they were when the event occurred. Despite the beneficial effects of emotional reinstatement on preschoolers' recall, forensic interviewers should be cautious about employing this technique. Because negative emotions such as anxiety and fear are often associated with witnessing or being a victim of crime, emotional reinstatement runs the risk of reintroducing those negative emotions to children. As a result, the need for complete information must be balanced against the need to protect children's emotional welfare.

Another effective retrieval aid interviewers can use to maximize the amount of recall by preschoolers is scripts. Preschool children have started to understand scripts. However, they do not always use scripts spontaneously or effectively. Interviewers can provide scripts as a structure to probe children's memory. For example, interviewers can first talk to children about what usually happens when they go to the supermarket. Then, interviewers can probe for memory on the day in question when children went to the supermarket. Having the script as a background, preschool children are better able to recall what happened that was different from the usual chain of events.

What kinds of retrieval aids are useful and how to use these retrieval aids without the accompanying drawbacks present continual challenge for future research. In addition, researchers need to conduct basic as well as applied research exploring individual differences in children's memory, language, and conceptual development. It is quite conceivable that one day, research will enable forensic interviewers to use different retrieval aids with different children to optimize each child's recall on a case-by-case basis.

## References

- Adam, L. T., & Worden, P. E. (1986). Script development and memory organization in preschool and elementary school children. *Discourse Process, 9*(2), 149-166.
- Berliner, L., Hyman, I., Thomas, A., & Fitzgerald, M. (2003). Children's memory for trauma and positive experiences. *Journal of Traumatic Stress, 16*(3), 229-236.
- Boyer, M., Barron, K. L., & Farrar, M. J. (1994). Three-year-olds remember a novel event from 20 months: Evidence for long-term memory in children? *Memory, 2*(4), 417-445.
- Bruck, M., & Ceci, S. J. (1999). The suggestibility of children's memory. *Annual Review of Psychology, 50*, 419-439.
- Bruck, M., Ceci, S., & Hembrooke, H. (2002). The nature of children's true and false narratives. *Developmental Review, 22*(3), 520-554.
- Ceci, S. J., Bruck, M., & Battin, D. B. (2000). The suggestibility of children's testimony. In D. F. Bjorklund (Ed.), *False-memory creation in children and adults: Theory, research, and implications* (pp. 169-201). Mahwah, NJ: Lawrence Erlbaum.



- Cordon, I. M., Pipe, M.-E., Sayfan, L., Melinder, A., & Goodman, G. S. (2004). Memory for traumatic experiences in early childhood. *Developmental Review, 24*(1), 101-132.
- Davis, S. L. (1998). Social and scientific influences on the study of children's suggestibility: A historical perspective. *Child Maltreatment, 3*(2), 186-194.
- DeLoache, J. S. (1987). Rapid change in the symbolic functioning of very young children. *Science, 238*, 1556-1557.
- DeLoache, J. S. (1991). Symbolic functioning in very young children: Understanding of pictures and models. *Child Development, 62*, 736-752.
- DeLoache, J. S., & Marzolf, D. P. (1995). The use of dolls to interview young children: Issues of symbolic representation. *Journal of Experimental Child Psychology, 60*(1), 155-173.
- Eacott, M. J. (1999). Memory for the events of early childhood. *Current Directions in Psychological Science, 8*(2), 46-49.
- Fivush, R. (1998). Children's recollections of traumatic and nontraumatic events. *Development and Psychopathology, 10*(4), 699-716.
- 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*(1), 32-56.
- Fivush, R., & Hamond, N. R. (1990). Autobiographical memory across the preschool years: Toward reconceptualizing childhood amnesia. In R. Fivush & J. A. Hudson (Eds.), *Knowing and remembering in young children, Emory Symposia in Cognition, 3* (pp. 223-248). New York: Cambridge University Press.
- Fivush, R., & Nelson, K. (2004). Culture and language in the emergence of autobiographical memory. *Psychological Science, 15*(9), 573-577.
- Fivush, R., & Schwarzmüller, A. (1998). Children remember childhood: Implications for childhood amnesia. *Applied Cognitive Psychology, 12*(5), 455-473.
- Flavell, J. H., Miller, P. H., & Miller, S. A. (1993). *Cognitive development* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Goodman, G. S., & Shaaf, J. M. (1997). Over a decade of research on children's eyewitness testimony: What have we learned? Where do we go from here? *Applied Cognitive Psychology, 11*(Special Issue), S5-S20.
- Gopnik, A., & Graf, P. (1988). Knowing how you know: Young children's ability to identify and remember the sources of their beliefs. *Child Development, 59*, 1366-1371.
- Hayne, H. (2004). Infant memory development: Implications for childhood amnesia. *Developmental Review, 24*(1), 33-73.
- Hughes, M., & Grieve, R. (1980). On asking children bizarre questions. *First Language, 1*, 149-160.
- Hungerford, A. (2005). The use of anatomically detailed dolls in forensic investigations: Developmental considerations. *Journal of Forensic Psychology Practice, 5*(1), 75-87.
- Kail, R. (1990). *The development of memory in children* (3rd ed.). New York: W. H. Freeman.
- Klecan-Aker, J. S., & Swank, P. R. (1988). The use of a pragmatic protocol with normal preschool children. *Journal of Communication Disorders, 21*(1), 85-102.
- Liwag, M. D., & Stein, N. L. (1995). Children's memory for emotional events: The importance of emotion-related retrieval cues. *Journal of Experimental Child Psychology, 60*(1), 2-31.
- London, K. (2001). Investigative interviews of children: A review of psychological research and implications for police practices. *Police Quarterly, 4*(1), 123-144.
- Low, J., & Durkin, K. (2000). Event knowledge and children's recall of television based narratives. *British Journal of Developmental Psychology, 18*(2), 247-267.
- MacDonald, S., & Hayne, H. (1996). Child-initiated conversations about the past and memory performance by preschoolers. *Cognitive Development, 11*(3), 421-442.
- Macklin, C. (1994). The effects of advertising retrieval cue on young children's memory and brand evaluation. *Psychology and Marketing, 11*(3), 291-311.
- Myers, J., Gramzow, E., Ornstein, P. A., Wagner, L., Gordon, B. N., & Baker-Ward, L. (2003). Children's memory of a physical examination: A comparison of recall and recognition assessment protocol. *International Journal of Behavioral Development, 27*(1), 66-73.
- Myers, N. A., & Perlmutter, M. (1978). Memory in the years from two to five. In P. A. Ornstein (Ed.), *Memory development in children* (pp. 191-218). Hillsdale, NJ: Lawrence Erlbaum.
- Ornstein, P. A., Merritt, K. A., Baker-Ward, L., Furtado, E., Gordon, B. N., & Principe, G. (1998). Children's knowledge, expectation, and long-term retention. *Applied Cognitive Psychology, 12*(4), 387-405.



- Peterson, C. (2002). Children's long-term memory for autobiographical events. *Developmental Review, 22*(3), 370-402.
- Peterson, C., & Biggs, M. (1997). Interviewing children about trauma: Problems with "specific" questions. *Journal of Traumatic Stress, 10*(2), 279-290.
- Peterson, C., Dowden, C., & Tobin, J. (1999). Interviewing preschoolers: Comparisons of yes/no and wh- questions. *Law and Human Behavior, 23*(5), 539-555.
- Poole, D. A., & Lamb, M. E. (1998). *Investigative interviews of children: A guide for helping professionals*. Washington, DC: American Psychological Association.
- Quas, J. A., Goodman, G. S., Ghetti, S., & Redlich, A. D. (2000). Questioning the child witness: What can we conclude from the research thus far? *Trauma Violence and Abuse, 1*(3), 223-249.
- Quas, J. A., Schaaf, J. M., Alexander, K. W., & Goodman, G. S. (2000). Do you really remember it happening or do you only remember being asked about it happening? Children's source monitoring in forensic contexts. In K. P. Roberts & M. Blades (Eds.), *Children's source monitoring* (pp. 197-226). Mahwah, NJ: Lawrence Erlbaum.
- Reich, P. A. (1986). *Language development*. Englewood Cliffs, NJ: Prentice Hall.
- Santrock, J. W. (2005). *Children* (8th ed.). Boston: McGraw-Hill.
- Saywitz, K. J., Goodman, G. S., & Lyon, T. D. (2002). Interviewing children in and out of court: Current research and practice implications. In J. E. B. Myers & L. Berliner (Ed.), *The APSAC handbook on child maltreatment* (2nd ed., pp. 349-377). Thousand Oaks, CA: Sage.
- Saywitz, K., & Lyon, T. D. (2002). Coming to grips with children's suggestibility. In M. L. Eisen (Eds.), *Memory and suggestibility in the forensic interview* (pp. 85-113). Mahwah, NJ: Lawrence Erlbaum.
- Siegal, M., & Peterson, C. C. (1996). Breaking the mold: A fresh look at children's understanding of questions about lies and mistakes. *Developmental Psychology, 32*(2), 322-334.
- Siegal, M., & Peterson, C. C. (1998). Preschoolers' understanding of lies and innocent and negligent mistakes. *Developmental Psychology, 34*(2), 332-341.
- Simcock, G., & Hayne, H. (2002). Breaking the barrier? Children fail to translate their preverbal memories into language. *Psychological Science, 13*(3), 225-231.
- Simcock, G., & Hayne, H. (2003). Age-related changes in verbal and nonverbal memory during early childhood. *Developmental Psychology, 39*(5), 805-814.
- Sternberg, K. J., Lamb, M. E., Hershkowitz, I., Esplin, P. W., Redlich, A., & Sunshine, N. (1996). The relation between investigative utterance types and the informativeness of child witnesses. *Journal of Applied Developmental Psychology, 17*(3), 439-451.
- Taylor, M., Esbensen, B. M., & Bennett, R. T. (1994). Children's understanding of knowledge acquisition: The tendency for children to report they have always known what they have just learned. *Child Development, 65*, 1581-1604.
- Terr, L. (1991). Childhood traumas: An outline and overview. *American Journal of Psychiatry, 148*, 10-20.
- Thierry, K. L., & Spence, M. J. (2002). Source-monitoring training facilitates preschoolers' eyewitness memory performance. *Developmental Psychology, 38*(3), 428-437.
- Welch-Ross, M. (2000). A mental-state reasoning model of suggestibility and memory source monitoring. In K. P. Roberts & M. Blades (Eds.), *Children's source monitoring* (pp. 227-255). Mahwah, NJ: Lawrence Erlbaum.
- Wimmer, H., Hogrefe, G. J., & Perner, J. (1988). Children's understanding of informational access as source of knowledge. *Child Development, 59*(2), 386-396.

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