

AN ABSTRACT OF THE THESIS OF

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Abstract approved: 

This study investigated how false memory syndrome may occur in children. Sixty children aged 6-8 and 9-11 years provided testimony about a theft using either general questions or both general and misleading questions. After seven weeks, both groups were interviewed using only general questions. Children correctly provided more central than peripheral features. Older children correctly provided more information than did younger children when asked general questions. Initial testimony was more accurate than seven-week reports. Initially, general questions elicited more accurate information than did misleading questions, however this effect dissipated over time. Moreover, children who were initially misled provided inaccurate peripheral details more in the delayed than in the immediate interview. Older children included inaccurate peripheral information more in the delayed than the immediate interview.

THE EFFECTS OF AGE, DELAY INTERVAL, AND TYPE OF
QUESTION ON FALSE MEMORY SYNDROME IN CHILDREN

A Thesis

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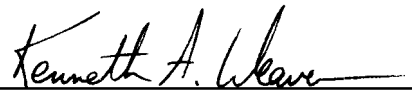
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CHAPTER 1

INTRODUCTION

The number of child abuse cases reported has escalated from 325,000 in 1985, to 500,000 in 1992 (Lamb, 1994). Society's awareness that child abuse has become a serious problem is evident by a concomitant increase in the number of news stories of abuse, court cases against abusers, and adult survivors and child victims receiving therapy by clinicians. There has also been a rise in litigation against clinicians for the implantation of false memories (Quirk & DePrince, 1996). That is, many adult clients are suing their therapists for making them believe that they were abused as children with a phenomenon called false memory syndrome (FMS). Understand the phenomenon of implanting false memories means first examining the variety of roles that clinicians have as advisors and therapists and then to consider techniques used in therapy.

Because of the increase in child abuse cases reported to social service agencies and to the police, many clinicians have been asked to assist in the investigation of allegations and to help victims cope with trauma. Social service agencies require clinicians' expertise to explain the memory process and to ascertain the details of the abuse from the victim. In addition, clinicians advise social service personnel about the appropriate actions to take in each case. That is, clinicians determine which cases should be referred to the courts for prosecution and what measures should be taken to ensure the safety of the child (e.g., the removal of the child).

The clinicians' role with the legal system is two-fold. First, they assist the police by questioning victims as a means of building a case against the perpetrator. Second, clinicians serve as advisors to both the prosecuting and defense attorneys. The district attorney wants clinicians to provide information regarding tactics for using eyewitness testimony in prosecuting the perpetrator. In contrast, the defense attorney wants clinicians to provide information about the general memory process to help discredit the testimony of the prosecution's witness (i.e., the child). Specifically, the defense attorney is interested in understanding how testimony is affected by various factors, such as age of witness, passage of time, and type of interview questions used to elicit recall.

Even when the perpetrators are not prosecuted, clinicians may be asked to provide counseling for both the perpetrators and the victims. In the most typical situations, clinicians help adult survivors of child abuse and child victims to talk about abuse situations. Many children and adults trust the safety of a clinician's office to talk about their abuse, even though relating the details may cause them to feel embarrassment or shame.

It may be helpful at this juncture to consider a typical scenario to illustrate how the therapeutic process impacts on children's memory. A 6-year-old girl Ashley tells her therapist that she is "bad." The clinician asks her, "What did you do that was bad?" The child starts crying, but does not respond. Because the child is distraught, the clinician says "Did someone hurt you?" Then, through a series of questions and answers, the child

divulges that her father has hurt her with his “special thing,” and she was not supposed to tell. Upon completion of the session, the clinician reports the abuse to the authorities.

Later, the child is asked by the courts to give eyewitness testimony regarding the event.

Clinicians use a variety of techniques to question their clients about events that may or may not have occurred. In the example, the therapist asked Ashley, “Did someone hurt you?” without justification that she was endangered. Therapists also ask their young clients who have difficulty describing their abuse to use dolls to portray what happened between themselves and their abusers (DeLoache & Marzolf, 1995). For example, the therapist may give anatomically correct dolls to Ashley and ask her to show what daddy did to her. Although using dolls to represent the client may be an effective tool for eliciting memories, these techniques bias the client’s portrayal of the events (Ceci & Bruck, 1993). Therefore, it is necessary to clarify how techniques used to elicit recall of abuse may implant false memories.

Clinical techniques are not the only way false information becomes incorporated into the client’s memories. Children are often manipulated by others to use the therapeutic setting to report falsely the occurrence of child abuse. For example, Ashley’s parents may have been in the middle of a custody battle. Children can be used as pawns to allow one parent to manipulate the situation as a means of gaining custody. For these reasons, clinicians must understand that children’s ability to report information accurately is affected by their age, the interviewing techniques used to elicit information, and the delay

interval between the original event and the retrieval of information. Age is relevant because it is used to determine whether or not the legal community considers the child capable of testifying in court. Clinicians serve as advisors by explaining their clients' age-related verbal and memory limitations. Clinicians may also guide the courts in determining whether children are too young, too traumatized, or simply incapable of telling what happened. The time lapse is important because long time delays are associated with distortions in recall (Ceci & Bruck, 1993). The techniques used by interviewers to elicit recall may jeopardize the admissibility of the testimony. That is, if the information was elicited using misleading or suggestive questions, the court will consider the evidence "tainted" and refuse to allow the witness to testify (Ceci & Bruck, 1993). To further understand the complexity of these issues, clinicians must understand clearly how the general memory process functions.

The General Memory Process

General memory processes include encoding, storage, and retrieval of information. Encoding generally refers to the information becoming registered into memory. Thus, children encode information as a way of representing it (Ceci, 1980). For example, when children participate in an event, some will encode the experience from the beginning to the end. In contrast, other children may not even understand the event and therefore, will not encode it, which precludes retrieval.

Once the information has been encoded, it is stored for future use. Storage refers

to an event being placed in an area of the brain for use at a later time. For example, once the memory process has begun, information must be stored or it will be irretrievable. The capacity refers to the length of time that information is available. Stored events can be brought back into consciousness at a later time through retrieval.

Atkinson and Shiffrin (1968) presented a model of memory that consisted of three types of memory: Sensory Memory, Short-Term Memory (STM), and Long Term Memory (LTM). Information from the environment first enters Sensory Memory through the senses (e.g., sight, sound) and can be stored for a short time, but does not necessarily need to be processed further. However, information of interest to children would next be put into short term memory (STM), whereas unimportant information is forgotten. Information is encoded into STM acoustically and is stored in chunks (i.e., groups of information) of approximately five to nine units of information for up to 30 seconds. Important event information will be transferred to LTM, encoded by meaning (Ceci & Bruck, 1995). Information that is internalized becomes absorbed into our semantic LTM (i.e., knowledge base), whereas special experiences are stored in our episodic LTM. There are no limitations in LTM's storage and capacity.

Not all information encoded, stored, and retrieved from LTM is accurate. When asked to recall information about a witnessed event, distortions in stored information may occur. Factors contributing to these distortions are the age of the witness and the amount of time that has passed since the event originally occurred. Because children of various

ages focus on different aspects of an event, discrepancies may be found during the encoding process. Encoding will be affected by selectivity and by limitations in the knowledge base. Selectivity refers to the witnesses' conscious or unconscious decision to encode certain information and to ignore other aspects of the event (Ornstein, Larus, & Clubb, 1991). Children use their event knowledge to anticipate what actions will occur in the event. In this way, they can pay attention to a variety of stimuli in the environment during the course of the event. Thus, children who have extensive event knowledge should encode the event elaboratively.

The inclusion of information encoded into LTM may be affected by the emotional level of the children at the time of the event, as well as the duration and number of experiences children have with the event. For example, if Ashley had been abused over a one-year period it is likely that she would encode the abuse. In addition, if Ashley's abuse occurred daily rather than only once, the repeated exposure would enhance the encoding process. Finally, because of the traumatic nature and high emotional level (stress) of the event, the details would be salient, which, in turn, facilitates the encoding process.

The amount of information encoded corresponds to the degree of acquired knowledge children have about an event (Ceci, 1980). For example, when very young children watch a parent clean a pot or pan in the kitchen, they are more likely to encode the pot if they understand the functions of a pot. In contrast, if they do not comprehend the functions, they are more likely to focus on and encode information that they do understand, such as

the size and shape of the object. However, encoding is not the only phase in which information becomes distorted. Memory can also be influenced while in storage due to the delay interval between the initial encoding and retrieval of information.

Over time, stored information may either increase or decrease in strength (Brainerd, Reyna, Howe, & Kingma, 1990; Ceci & Bruck, 1995; Ornstein, Larus, and Clubb, 1991). Some research indicates that frequent recall and discussion about the event will aid memory allowing children to recall the events (Principe, Ornstein, Gordon, & Baker Ward, 1994). However, if rumination or discussion about the event does not occur, then the memory will fade (Ceci, Toglia, & Ross, 1988). That is, if a witnessed event is frequently discussed, then details should stay fresh in children's minds and be easily recalled. However, if it is difficult for children to think about or talk about the event, there is an increased likelihood that the memory will weaken over time. For example, after Ashley discloses her abuse to her mother, and they discuss it several times, then the event will be more easily recalled than if they had not talked about the abuse.

In addition to affecting the strength of the memory, the passage of time can alter the memory due to interference. That is, if the child has similar experiences to the original one, the new information will compete or interfere with the original memory inadvertently altering it (Ornstein, Larus, & Clubb, 1991). For example, if Ashley sexually abused by her father for the first time in her bedroom, and in subsequent abuses in other rooms of the house. She is questioned by the social worker soon after the first event on the details of

the abuse. The clinician begins therapy with her several weeks after the initial disclosure, not realizing that more abuse has occurred since she has talked with the social worker. She questions Ashley about the information given to the social worker. The additional abuse will distort the memory of the initial abuse.

Even memories that were encoded correctly and not adversely affected in storage can be influenced later when information is retrieved (Ornstein et al., 1991). Several theories have been developed to explain how discrepancies in children's testimony occur during retrieval. Loftus, Miller, and Burns (as cited in Ceci & Bruck, 1993) purport that original memories are overwritten or changed due to a suggestive comment used to elicit recall (i.e., post event suggestion) made during the interview (Ceci & Bruck, 1993). The result is that the original memory is erased and cannot be retrieved. For example, Ashley is molested when her father is wearing a blue sweater. Later, she is asked if her father had on a red sweater. As a result of the suggestion, the original memory of the blue sweater is overwritten and replaced with a memory for a red sweater.

Bekerian and Bowers (1983) challenged Loftus and her colleagues' theory by offering an alternative approach. They contend that the original memory, once encoded, remains intact (i.e., memories are not lost) but that the post-event suggestion interferes with the retrieval of it. Thus, the information was simply inaccessible at the time the question was asked. For example, when Ashley was asked if her father wore a red

sweater, she would report that he did. However, the information that her father wore a blue sweater would still be in her memory and may be accessed at a later time.

A third explanation purported by McCloskey and Zaragoza (1985) is that post-event suggestions reflect “gap-filling” memory strategies rather than distortions of the original memory. This explanation assumes that people will complete gaps or missing information in their memory by using event schemes. Event schemes are the representations of what typically occurs in events, general knowledge about how people interact, and knowledge about how actions in events relate to one another. For example, when children attend a birthday party, they expect to sing “Happy Birthday.” If instead they sang “Old MacDonald’s Farm,” this act would not fit their expectations about what typically happens at a birthday party. Therefore, if they were questioned about what they sang at the party, they are likely to distort their memory to make it consistent with their knowledge of birthday songs and respond “Happy Birthday.”

Memories are changed to conform to people’s prior knowledge and expectations regarding an event through reconstructive processes in retrieval. That is, when witnesses fail to remember various aspects of an event, they use event schemes logically to construct the event and to fill in the gaps (Ceci & Bruck, 1995; Ornstein, et. al., 1991). For example, Ashley may talk about what happened with her father, but not recall every detail of the abuse. She may then use an event schema to fill in the gaps of her faded memory. In this way, reconstruction leads to altered, often inaccurate memories.

In addition to gap-filling strategies, distortions during the retrieval phase may occur because of social demand characteristics or the motivation of the participant (Cassel, Roebbers, & Bjorklund, 1996; McCloskey & Zaragoza, 1985). Toglia (1991) suggests that social pressures may adversely influence children's ability to recall information if they are afraid or intimidated by an adult interviewer (e.g., parent, police officer, or therapist) who carries status and power in their eyes. Children may create a false memory as a way of pleasing the adult or as an attempt to end the interview. Interviewers may unwittingly pressure children to verify certain information (Weinberg, Wadsworth, & Baron, 1983). The clinician's expectations about what occurs during sexual abuse may affect his or her tone of voice and use of suggestive questions. Misleading questions implant false memories because children comply with the suggestion in order to be viewed as cooperative. Thus, false memories are created because children begin to believe the adult's misconception about the event. In addition to demand characteristics, the motivation of the witness is a factor in false memory syndrome.

The motivation behind retrieval also influences the retrieval process. All of the individuals involved in a court case have different motives. For example, Ashley's mother may want her to retract the allegation of abuse to keep the family together. Ashley may want her father to stop hurting her but not want him to be forced to leave or for her to be taken away from her parents. The motivation of the social workers, prosecuting attorneys, and police may also differ from each other. Both the police and social workers may be

motivated to decrease overly large caseloads. In addition, social workers are motivated to reunify families while protecting the children. Attorneys may be motivated to win as a means of improving their status or to keep their jobs. The best-case scenario has the perpetrator going to prison as a way of protecting the children from further abuse. The worst-case scenario is that careers are boosted while the children's interests are lost in the system. Clinicians may be motivated by both the desire to help their clients and the pressure to increase billable revenues. In spite of many reputable attorneys and clinicians, there are those who may not serve the interests of their clients first.

Many investigators use external cues to assist witnesses in retrieving stored information (Geiselman, Saywitz, & Bornstein, 1993). That is, interviewers will use leading questions and contextual cues to facilitate the recollection of the memory. A leading question incorporates the correct information, such as "Was the color of the sweater blue?" when the sweater was blue. In contrast, misleading questions provide erroneous information such as, "Was the color of the sweater red?," when it was blue. Unfortunately, misleading questions may elicit erroneous responses in the reports given by witnesses because of demand characteristics. For example, if an interviewer asks Ashley to describe a particular item that was not present during the event, she may describe it to "help" the investigation.

Investigators could also provide contextual cues to facilitate recall. For example, Ashley may have been molested in a dirty room that smelled of smoke. The police

investigator may provide a contextual cue by saying, "You remember the room you were in? It was dirty and smelled of smoke, didn't it?" Victims are encouraged to return to the place, either physically or mentally, where the crime occurred as a way of facilitating the retrieval process (Ceci & Bruck, 1995; Geiselman, Saywitz, & Bornstein, 1993).

However, the environment in which children are interviewed should also be considered (Ornstein, 1990). When children are in police stations, emergency rooms, or other uncomfortable locations, their performance can be adversely affected. To further understand why false memory syndrome occurs, a review of the literature on the effects of age, delay interval, and the type of questions used to retrieve information about events was made.

The Effects Of Age

Children's ability to encode, store, and retrieve event information may be limited by their stage of cognitive development as determined by their age and/or experience (Nelson, 1986; Nelson & Hudson, 1988). Age also contributes to differences in children's knowledge base and verbalizations, thereby influencing susceptibility to suggestive questions (Ratner, Bukowski, & Foley, 1992; Saywitz, 1988). Forgetting may also play a role in the suggestibility of children of different ages. For these reasons, age is considered a mediating factor in determining whether or not children's testimony is credible (Ceci & Bruck, 1995). However, Saywitz (1988) notes that even children of the same age may not have equivalent cognitive abilities because individual differences play a role in the

development of memory processes. Moreover, the extent of event knowledge also determines whether children can accurately report their experiences.

Children's knowledge base, or the information children have acquired through experiences and through formal learning, acts as a filter to enhance or to limit their ability to converse about events. Children's difficulty in expressing their ideas may cause an adult to question the credibility of their testimony. Adults may also have unrealistic expectations of children's capacity to understand and to discuss the event. Saarnio (1993) reported that children's knowledge and their awareness of their own memory limitations change with age and experience. For example, young children may not know how to describe what occurred during an abusive situation because they did not understand what happened to them. Lack of knowledge about various activities makes it difficult for children to talk fluently about the event itself. Older children typically have more experiences with events as compared to younger children and can encode, store, and report information about individual situations more elaboratively (Bjorklund, 1987; Ornstein, et al., 1991).

Others agree that memory performance is directly related to the extent of children's knowledge (Bjorkland, 1987; Ornstein, Baker-Ward, & Naus, 1988). In an examination of the knowledge-memory relationships, Shapiro, Clubb, and Ornstein (1994) found that 5-year-old children remembered scripted features of a past physical examination with greater accuracy than non-scripted features. Scripted features, defined by Nelson and Grundel (1981), are organized sequences that specify the actions, actors, and props most likely to

occur during any given event (i.e., what typically occurs). Non-scripted features therefore refer to those activities not typically performed. Thus, children's recall was enhanced by their knowledge for specific activities in the event.

Ornstein, Shapiro, Clubb, Follmer, & Baker-Ward (1997) suggested that knowledge may act as a framework for storing experiences and may be a more important indicator in recall than is age. Chi's (1977) research comparing experts to novices showed that children who were very knowledgeable about chess had performed better on a related memory task than did adults who were just learning how to play chess. This research supports the notion that age may play a smaller role in memory than does knowledge. Thus, children living in an environment where violence and crime is prevalent should be able to provide more details about a gun used in a crime than those in non-violent neighborhoods because they have more knowledge and experience with guns.

Children's capacity for verbalizing information of events also contributes to recall. Saywitz (1988) states that the development of verbal skills influences whether children understand the questions being asked of them. Therefore, young children may be less able to provide detailed information, but that does not necessarily make their statements inaccurate. She suggested that because of the developmental differences in children's reporting skills, younger children should be questioned using shorter sentences and simpler words. Young children's poor verbal skills hinder their ability to express their ideas (i.e., elaborate). As children become older and their vocabulary and fluency increase, their skill

in describing events improves concomitantly. However, testimony by young children, although less complete than that of older children, is nevertheless as accurate (Ceci & Bruck, 1995). Thus, verbalization alone is not sufficient to explain differences in memory performance. Brainerd (1997) posits that age differences in testimony may be due to forgetting.

Brainerd, Reyna, and Howe (1985) examined forgetting with particular attention given to recognition insensitivity (i.e., something a person would not recognize), ceiling effects in retention (i.e., the maximum amount of information retained), and stages of learning (i.e., the developmental stage of the person). When incorporating the experimental modifications using these factors, they concluded that forgetting rates decreased between early childhood and young adulthood. This occurred rapidly at first and then more slowly, with the rates remaining stable throughout much of adulthood. Moreover, Brainerd (1997) stated that age differences in forgetting should set the stage for age differences in memory suggestibility.

Several studies have examined the effects of age in relation to children's suggestibility (Bjorklund, 1987; Cassel & Bjorklund, 1995; Ceci & Bruck, 1993). In a review of the literature, Ceci and Bruck (1993) found that in almost 90% of the studies prior to 1990 preschool children gave more inaccurate information than did older elementary children or did college students. However, young children were still able to give information that was pertinent (Ceci & Bruck, 1993). Newer, more extensive studies

conducted after 1990 reveal that there does not appear to be significant age differences in suggestibility (Ceci & Bruck, 1995). Preschool aged children were no more vulnerable to suggestion than were either school-age children or adults. For example, Cassel and Bjorklund (1995) compared suggestibility of children aged 6 and 8 to that of adults. Participants were interviewed about a video of a bike theft that they viewed. This study revealed that 8-year-old children were slightly better at answering leading questions (e.g., “Was the color of the bike black,” when the color of the bike was black) correctly than were 6-year-olds. However, when children were compared on responses to misleading questions (e.g., “Was the color of the bike red?” when the bike was black), both age groups made an equal number of errors.

Cohen and Harnick (1980) studied the suggestibility of children ages 9 and 12 who viewed a short film depicting a petty crime. Cohen and Harnick found that 12-year-olds answered a higher proportion of the questions accurately and were less likely than 9-year-olds to succumb to misinformation when suggested to them. Cohen and Harnick concluded that although younger children were susceptible to suggestive questions much more readily than were older children, the effects of the suggestion on actual memory was not significantly different across ages. Thus, when children were not misled, their memories were relatively equal.

With age, children’s ability to provide a more complete and accurate description of the event increases. For example, Baker-Ward et. al. (1993) found that 3-year-old and 5-

year-old children had less complete and accurate overall recall for their pediatric examination than did 7-year-old children. Bjorklund and Hock (1982) established that 9-year-old children showed lower levels of recall following a distraction task when compared to children aged 13. They concluded that 13-year-old children may be better able to organize and report information than their younger counterparts.

These studies demonstrate that preschool children are not necessarily more susceptible to false memory syndrome than are elementary school-aged children, but interviewers are more likely to have difficulty obtaining exhaustive reports from preschoolers as compared to elementary school children. Others have drawn similar conclusions when examining the effect of a delay interval on recall (Baker-Ward et al., 1993; Ornstein et al., 1992).

The Effects Of Delay Interval

The delay interval between the event and retrieval also has an effect children's ability to provide accurate and complete testimony (Baker-Ward et. al., 1993; Cassel & Bjorklund, 1995; Roberts et al., 1997). Thus, even if children report less information over time, the content can be accurate and consistent across interviews (Fivush, 1993; Fivush & Schwarzmuller, 1998).

When investigating younger children's long-term retention of a pediatric visit, Baker-Ward et al.(1993) asked children ages 3, 5, and 7 years old to recall their well-child check up. Each of the children first saw the nurse, followed by the examination of the

doctor. The children were then interviewed immediately and again at different time intervals (i.e., one, three, or six weeks). Forgetting was observed in the 3- to 5-year-old children, even though a large quantity of information was retained over even the longest delay. However, the 7-year-olds recalled approximately 90% of the features at each delay condition. These findings clearly demonstrate the excellent encoding and retrieval abilities of 7-year-olds after a six-week delay.

Cohen and Harnick (1980) examined the effect of time on recall by 9- and 12-year-old children. The children were given two cued-recall trials on separate lists of words. Children reviewed their list and then were either cued immediately or after a four-minute delay. This study, which was later replicated, established that 9-year-old children showed high levels of recall when tested immediately, but lower recall levels after a time delay compared to children aged 12. Thus, the abilities of children who are aged 12 are measurably different than those who are aged 9 after a time delay.

Cassel and Bjorklund (1995) also noted that there was a decrease in the amount of information children reported two or three times during interviews over a one month period. Although the reports during the one week and the one month interviews were accurate, evidence of forgetting had occurred.

Roberts and Blades (1996) examined the delay between experiencing an event and hearing misleading post-event information (i.e., providing inaccurate information after the event occurred). Children ages 4 and 10 and adults, either viewed a live event or two

different films. The children and an adult had their pictures taken while dressed up in costumes. Either one day or one month later the children were presented with misleading information about the event. At four weeks, the children were interviewed about the event. The children in the one month delayed condition were more confused between the actual event and the misleading information than were the children in the one day delay condition. Thus, as time passes there is more opportunity for confusion to occur.

In summary, the delay interval between when the event occurred and the interview is a key component when assessing whether children's testimony is credible. These studies showed that 7-year-old children were able to recall information with 70% accuracy after a six week delay. In addition, children became confused if competing information was introduced, and may forget the information over time leading to implantation of false memories. To minimize children's confusion through the introduction of new information, an examination of how to elicit memories would be advantageous.

The Effects Of The Type Of Question

Suggestibility has also been linked to the type of questions utilized to elicit information (Ceci & Bruck, 1995). Several investigations have tested whether false memory can be implanted in children through the use of misleading questions. In these studies, children have been asked to either participate in an event (Baker-Ward et al., 1993; Leichtman & Ceci, 1995), or to watch a video (Bjorklund et al., 1997; Cassel & Bjorklund, 1995; Memon, Holley, Wark, Bull, & Kohnken, 1996), a film (Cohen &

Harnick, 1980; Roberts & Blades, 1996), or slides of an event (Duncan, Whitney, & Kunen, 1982). The children were then asked a variety of questions to test the effect of providing misleading information on recall.

Children have shown susceptibility to suggestion, even when they were active participants in an event. Baker-Ward et al.(1993) examined 3-, 5-, and 7-year-olds recall for a pediatric examination using open-ended questions (i.e., “Tell me about when you were at the doctor’s appointment,”) followed by leading and misleading questions. They found that though children provided less information when asked open-ended questions, their reports contained few errors. In contrast, the number of errors increased in response to leading or misleading questions. This effect was more pronounced with preschoolers than for elementary school-aged children.

Leichtman and Ceci (1995) illustrated the effects of using misleading questions with preschool children, which implanted false memories of misdeeds. In this study, Sam Stone, a stranger to the children, visited the classroom. Sam spent two minutes in the classroom walking around, saying hello to the teacher, and commenting that the book the teacher was reading was his favorite. In subsequent interviews, some of the children were asked misleading information about Sam’s visit that suggested he had spilled chocolate on a teddy bear and ripped a book, neither of which had actually occurred. The results indicated that just under 40% of the 3- and 4-year-old preschool children who were given misleading information told about Sam’s misdeeds, while only a few of the 5- and 6-year-

old preschool children reported misdeeds. In contrast, children who were not exposed to misleading information rarely provided false reports at younger ages and never reported misdeeds at the older ages. Therefore, introducing misleading information affected children's ability to reflect accurately on an event.

Several studies have shown that children who witness events will provide false information in their testimony that is consistent with information prompted by misleading questions. Cohen and Harnick (1980) studied the suggestibility of children ages 9 and 12 who viewed a short film depicting two petty crimes. They were immediately asked a series of leading and misleading questions about the event. One week later, they were administered a multiple-choice test to examine the degree to which the suggested information was processed into memory. Younger children were more likely to provide incorrect information when asked leading questions than were older children. However, children at both ages gave erroneous reports when misleading questions were used.

Cassel, Roebbers, and Bjorklund (1996) investigated the use of increasingly specific questions on recall by kindergarten, second grade, and fourth grade children. The children viewed a bike theft video and were interviewed using either an open-ended, leading, or misleading questions one week later. The results revealed that open-ended questions elicited the most accurate information with basically no incorrect responses. However, when leading and misleading questions were used, kindergartners gave more inaccurate than accurate information. In contrast, the second and fourth grade children gave accurate

responses, even when leading and misleading questions were used. Therefore, this study reveals that the least amount of errors occurred at the open-ended question level.

Moreover, older children are better at resisting misleading information. Similarly, Roberts and Blades (1996) found that as age increased from preschool to adulthood, the use of open-ended questions resulted in a higher amount of correct information reported. These findings demonstrate that errors in children's testimony are affected by the degree of specificity in the questions used to elicit recall.

An open-ended question format was the most effective at eliciting accurate testimony. In addition, children were more likely to succumb to false memory syndrome when misleading questions rather than open-ended questions were used.

Summary

The current literature reveals that age is related to children's knowledge base, verbal skills, and forgetting rates, all of which can affect their ability to recall an event. Age differences were found in several studies that compared children in early childhood to those in middle childhood or children in elementary school to those in high school or college. In addition, the literature indicated that preschool children can provide as much accurate information as do elementary school-aged children when an open-ended question format is used. However, preschool children's reports became increasingly inaccurate when leading and misleading questions are used. Due to the limited amounts of research

conducted within the elementary school-aged children, it would be beneficial to examine the differences within this age group.

Moreover, the time delay between the event and when children are interviewed played a significant role in obtaining accurate information. However, the point at which accuracy during the latter part of middle childhood is hindered by an increased time delay is not clear.

The literature also provides a consistent foundation confirming that the use of open-ended questions elicits the most accurate information across ages. In contrast, the use of leading and misleading questions may compel children to report events inaccurately due to social demands or to please the interviewer. Several studies found that children who were given misinformation after a time delay were more likely to include suggestive information into subsequent reports. However, it is not clear whether information can be implanted if misleading questions are asked immediately following an event. Thus, it is necessary to investigate the differences between when the misinformation is introduced (i.e., immediately or after a delay).

This study attempted to address these gaps by comparing eyewitness testimony by children at different ages within middle childhood after a seven-week delay. Of critical importance was whether or not adults can mislead children into reporting inaccurate information by questioning them in a suggestive manner. That is, would false memory syndrome occur because of the way a child was questioned by an authority figure?

This study attempted to determine which factors may affect the implantation of false memory. The first four issues focus on how individual factors contributed to accuracy in eyewitness testimony. The first issue raised was whether age alone affected accuracy. The second issue posed was whether the amount of time delay for the interview influenced accuracy. The third issue of interest was whether type of questions used to elicit recall would affect accuracy. The fourth issue of concern was whether children's ability to report information accurately was affected by the type of information requested. That is, children could focus on core features of an event (i.e., central to the theme) or on peripheral details (i.e., arbitrary aspects). The next set of issues address how different combinations of these factors affect eyewitness testimony. The fifth concern was whether children may be vulnerable to suggestion because of their age. The sixth issue was whether children would be prone to suggestion over time. The final issue was whether the type of feature recalled was affected by the time delay.

Hypothesis 1a stated that older children would provide a greater amount of correct information than would younger children.

Hypothesis 1b stated that younger children would provide a greater amount of incorrect information.

Hypothesis 2a was that children would provide a greater amount of correct information during the immediate interview than during seven-week interview.

Hypothesis 2b was that children would provide a greater amount of incorrect information during the seven-week interview than during the immediate interview.

Hypothesis 3a predicted that children would provide a greater amount of correct information when questioned using a general format than a specific format.

Hypothesis 3b predicted that children would provide a greater amount of incorrect information when questioned with a specific format than a general format.

Hypothesis 4a was that children would recall a greater amount of correct core features than peripheral features.

Hypothesis 4b was that children would recall a greater amount of incorrect peripheral features than core features.

Hypothesis 5a was that no age differences in correct information reported would be found, regardless of question format.

Hypothesis 5b was that no age differences would be found when a general format was used, but younger children would provide a greater amount of incorrect information than older children when a specific format was used.

Hypothesis 6a was that a smaller amount of correct information would be provided by children who were interviewed immediately with the specific format than with the general format. Moreover, this condition difference was expected to be maintained over time, although at a lower level indicating forgetting occurred.

Hypothesis 6b was that children would provide a greater amount of incorrect information during the initial interview when questioned using the specific rather than the general format. Additionally, this condition effect was expected at the seven-week interview but to a higher degree for those in the specific condition and at the same level or lower for those in the general condition.

Hypothesis 7a predicted that children would provide a greater amount of correct peripheral features initially than during the seven week interview.

Hypothesis 7b predicted no differences in the amount of incorrect core features reported, but that children would provide a greater amount of incorrect peripheral features seven-week interview than during immediate interview. Moreover, this effect would be mediated by condition over time such that those interviewed with specific questions would report a greater amount of incorrect peripheral features than those interviewed with general questions.

CHAPTER 2

METHOD

Participants

Sixty-nine children ages 6 to 8 years, ($M = 6;11$ months, range = 6 years 0 months to 8 years 0 months, $SD = 7$ months) and 9 to 11 years, ($M = 10$ years, range = 9 years, 0 months to 11 years, 2 months, $SD = 7$ months) participated. However, nine of the children (two younger and seven older) were dropped because they did not show up for the second interview. An equal number of male and female children were selected from those whose parents had provided consent. There was 1 child from a lower class family, whereas 41 children were from middle-class families, and 18 children were from upper class families. The majority of children were Caucasian, with only two children being of Caucasian/Asian and African American/Caucasian ethnic blends. Participants were recruited from two sources. First, university faculty and staff were asked to volunteer their children. Second, parental consent letters were sent home with children at the local elementary schools. All participants who completed this study were given a certificate of research participation.

Design

A 2 (Age) x 2 (Delay interval) x 2 (Condition) x 2 (Feature) design was used. The independent variables included age (6- to 8-year-old or 9- to 11-year-old children), a delay interval (immediate and seven weeks), and condition (general or specific question format) and feature (core and peripheral details of the event). Both age and condition served as

the between subject factors, whereas delay interval and feature served as the within subject factors.

The dependent variables were the memory scores which measured the overall amount of correct and incorrect information that children provided in their reports. Thirty-four features of the videotaped event were identified and rated by five lab members using a Likert scale ranging from 1 (very core) to 4 (very peripheral). Six features were dropped because they received scores 3.5 or higher and were considered too peripheral for this study. Using the averaged scores, the remaining 28 features constituted 13 core features (i.e., information central to the event and to the characters; rated from 1 to 2.24) and 15 peripheral features (i.e., nonessential details; rated from 2.25 to 3.49). Table 1 contains a list of core and peripheral features.

Correct memory represented the information portrayed in the film, whereas incorrect memory consisted of false memories (i.e., accepting misleading information as factual). The protocols for the general and specific interviews were coded using a system created by the Child Study Team (1998; see Appendix F). For the general interviews, both the correct scores and the error scores were created by using a completion score of 1, 2, or 3 points (partial, full, elaborated, respectively) multiplied by a question weight score of 1, 2 or 4 points to indicate the hierarchical level (leading, more specific open-ended questions, respectively) at which the responses were made. For the specific interviews, correct answers provided in response to open-ended questions were scored the same way as were general interviews. However, adjustments were made to the error scores when children provided incorrect answers in response to the misleading questions in accordance

with the chart in the coding scheme. In contrast, if no features were correctly mentioned in response to the open-ended questions, then correct and incorrect scoring was based on children's responses to the misleading questions as indicated on the chart in the coding scheme.

The correct and incorrect features were then tallied separately as either core (13 total) or peripheral (15 total) to the event. These scores were divided by the total number of possible points in either the correct core (140), correct peripheral (172), incorrect core (144) and incorrect peripheral (172) scores, which derived a percentage of correct or incorrect scores. These percentages were utilized for the analyses. Inter-rater reliability was established for the master coder and faculty advisor by initially obtaining a minimum of $r = .90$. Then the master coder scored all of the interviews. The faculty advisor scored 20% of the interview protocols. Inter-rater reliability ranged from $r = .86$ to $r = 1.00$.

Materials

A VHS videotape of a trip to the zoo with an embedded theft scene was developed and utilized specifically for this project. The videotape was 12 minutes in length and featured female twin coeds who visited the zoo. There was a two-minute sequence at the beginning of the film in which the twins witnessed a bike theft. Despite several attempts to borrow the younger girl's bike, a teenage boy was repeatedly denied permission to use it. The boy leaves the scene, sneaks back, and steals the bike. The videotape was created at the Swope Park Zoo in Kansas City (Shapiro, 1997).

Procedure

Approval from the Institutional Review Board was obtained (see Appendix A). Each child was brought to the university by a parent. The child was introduced to two

experimenters and then brought by one of them to a room to watch a movie (see Appendix B). While the child was watching the film, a second interview was scheduled with the parent. The parent was then asked to complete demographic information (see Appendix C).

Children were interviewed two times, immediately after the film and again in seven weeks (less 2 days to 3 days later). Within each age group, children were randomly assigned to either a control group or to a suggestive group. In the initial interview, the questions for the children in the control group followed the general format (see Appendix D), whereas questions for those in the suggestive group used the specific format (see Appendix E).

The general format interviews consisted of open-ended questions (e.g. "Tell me everything that happened.") followed by positive leading and misleading questions (counterbalanced to minimize bias) when necessary to elicit information not previously provided. A positive leading question (PLQ) suggests the correct response in the question (e.g., "Was the color of the bike black?" when the color of the bike was black). A misleading or negative leading question (NLQ) suggests incorrect information in the question (e.g., "Was the color of the bike red?" when the color of the bike was black). The specific format interview consisted of open-ended questions followed by only misleading questions. The interview questions focused on various aspects of the bike theft event and specifically gave information about (a) the bike characteristics, (b) the actions portrayed, (c) the actors' physical characteristics, and (d) the actors' clothing. All interviewers were trained by an experienced faculty member. In the delayed interview, the questions employed the general format for children in both groups.

Table 1

Core and Peripheral Features

Core Features	Peripheral Features
1. The bike is stolen by the perpetrator.	1. The victim moves the bike.
2. The children argue over the bike.	2. The victim is sitting on a bench.
3. The victim is the owner of the bike.	3. The perpetrator mimicked the action "slit his throat" when denied permission to use the bike.
4. The perpetrator's name is Frankie.	4. The victim's name (not mentioned).
5. The perpetrator's shirt is black	5. The victim's hair is blond.
6. The perpetrator's hair is brown.	6. The victim wears jeans.
7. The perpetrator has short hair.	7. The victim wears sneakers.
8. The perpetrator is male.	8. The perpetrator wears boots.
9. The perpetrator is older than the victim.	9. The perpetrator wears a big, black watch.
10. The perpetrator is taller than the victim.	10. The perpetrator touches the bike.
11. A mountain bike is stolen.	11. The perpetrator touches the victim.
12. The bike is black.	12. The perpetrator calls the victim "a stupid jerk."
13. The children struggle over the bike.	13. The victim becomes angry when the bike is stolen.
	14. The father approaches the victim after the bike is stolen.
	15. The father's hair is brown.

CHAPTER 3

RESULTS

Memory scores were analyzed using separate 2 (Age: younger or older) x 2 (Delay interval: immediate and at seven weeks) x 2 (Condition: general or specific interview) x 2 (Feature: core and peripheral) mixed model analysis of variance. Age and condition served as the between-subject factors, whereas delay interval and feature served as the within factor variables. Tukey post-hoc tests were performed on all significant interactions ($p < .05$), except where otherwise noted.

Hypothesis 1 a stated that older children would provide a greater amount of correct information than would older children. A significant main effect for age, $F(1,56) = 28.41$, $p < .01$) was found. This hypothesis was confirmed, rejecting the null hypothesis.

Hypothesis 1b stated that younger children would provide a greater amount of incorrect information. This hypothesis was not confirmed, therefore the null was accepted.

Hypothesis 2a was that children would provide a greater amount of correct information during the immediate interview than during seven-week interview. This was not confirmed, therefore the null was accepted.

Hypothesis 2b was that children would provide a greater amount of incorrect information during the seven-week interview than during the immediate interview. The null was rejected, $F(1,56) = 37.71$, $p < .01$, but is interpreted within a three-way interaction.

Hypothesis 3a predicted that children would provide a greater amount of correct information when questioned using a general format than a specific format. The null was accepted as it was related to 2b.

Hypothesis 3b predicted that children would provide a greater amount of incorrect information when questioned with a specific format than a general format. This was not confirmed and therefore the null was accepted.

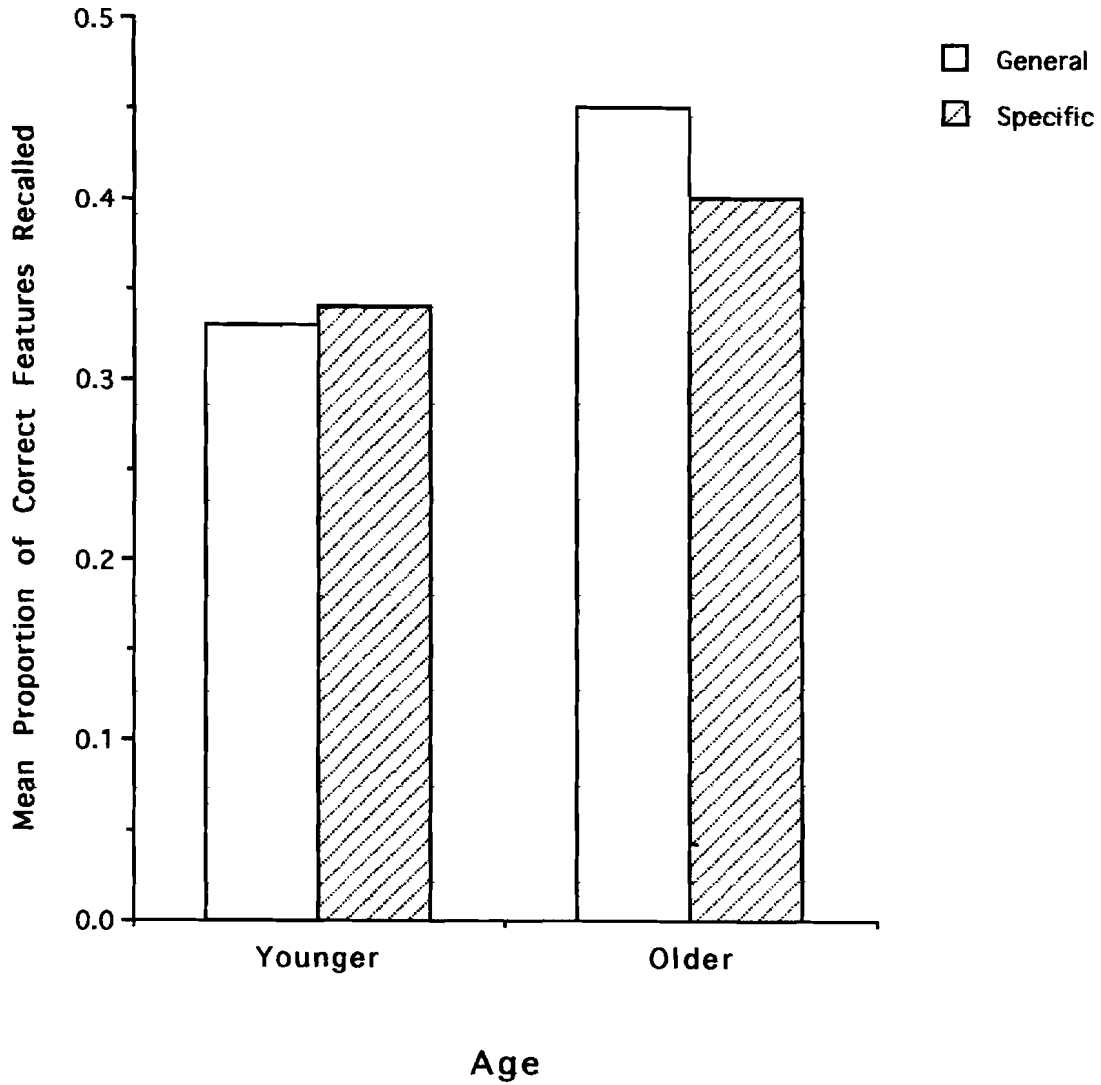
Hypothesis 4a was that children would recall a greater amount of correct core features than peripheral features. This was confirmed and the null hypothesis was rejected. There was a significant main effect for feature, $F(1,56) = 343.64, p < .01$, showed that children recalled a higher proportion of core information ($M = .47, SD = .07$) than peripheral information ($M = .30, SD = .05$).

Hypothesis 4b was that children would recall a greater amount of incorrect peripheral features than core features. A main effect of feature, $F(1,56) = 26.19, p < .01$, was found. Therefore the null was rejected and hypothesis was confirmed.

Hypothesis 5a was that no age differences in correct information reported would be found, regardless of question format. A significant Age x Condition interaction, $F(1,56) = 4.42, p < .05$. As shown in Figure 1, older children reported more information than did younger children, but only for the general condition. That is, there were no age differences for the specific condition. Moreover, there were no effects of condition at each age. This hypothesis was not confirmed as the null hypothesis was rejected

Hypothesis 5b was that no age differences would be found when a general format was used, but younger children would provide a greater amount of incorrect information than older children when a specific format was used. The null was accepted and therefore this hypothesis was not confirmed.

Hypothesis 6a was that a smaller amount of correct information would be provided by children who were interviewed immediately with the specific format than with the general format. Moreover, this condition difference was expected to be maintained over



**Figure 1: Mean Proportion of Correct Features
Recalled by Age and by Condition**

time, although at a lower level indicating forgetting occurred. Condition also interacted with delay interval, $F(1,56) = 5.203$, $p < .05$. Although the Tukey post-hoc test did not reveal significant differences, it is apparent from the means that differences exist. As shown in Figure 2, children in the general condition recalled more information during the initial interview than during the seven week interview. Moreover, children in the general condition reported more information initially than those in the specific condition. The null was rejected thereby confirming the hypothesis.

Hypothesis 6b was that children would provide a greater amount of incorrect information during the initial interview when questioned using the specific rather than the general format. Additionally, this condition effect was expected at the seven-week interview but to a higher degree for those in the specific condition and at the same level or lower for those in the general condition. The null was accepted as there was no significant interaction for delay interval by condition. However, there was a delay by condition by feature interaction which will be discussed later in this chapter.

Hypothesis 7a predicted that children would provide a greater amount of correct peripheral features initially than during the seven week interview. The null was accepted.

Hypothesis 7b predicted no differences in the amount of incorrect core features reported, but that children would provide a greater amount of incorrect peripheral features seven-week interview than during immediate interview. Moreover, this effect would be mediated by condition over time such that those interviewed with specific questions would report a greater amount of incorrect peripheral features than those interviewed with general questions. The significant delay interval x feature interaction rejected the null hypothesis, $F(1,56) = 9.55$, $p < .01$, and is interpreted within two significant three way interactions. The Delay Interval x Condition x Feature interaction, $F(1,56) = 4.76$, $p <$

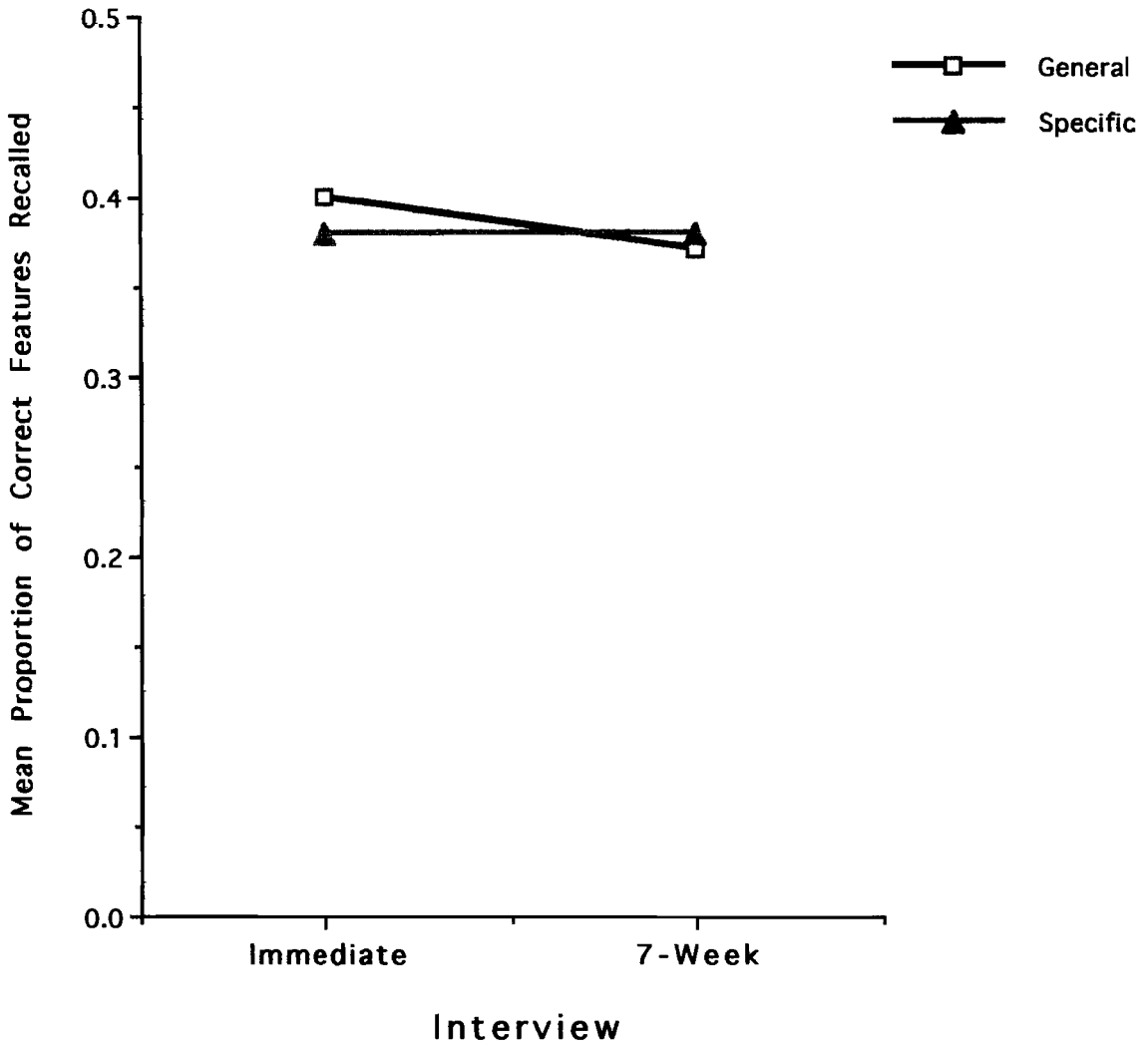


Figure 2: Mean Proportions of Correct Features Recalled by Delay Interval and by Condition

.05, shown in Figure 3, indicates that children in the specific condition reported a higher proportion of incorrect peripheral information at the seven week interview than at the immediate interview. No other significant differences between interviews were found. A higher proportion of incorrect information about peripheral than core features was found, but only when comparing children in the different conditions. That is, children in the general condition reported more incorrect peripheral information at both interviews than did children in the specific condition when reporting core information.

The Age x Delay Interval x Feature interaction, $F(1,56) = 5.42, p < .05$, is shown in Figure 4. Older children provided a greater amount of incorrect peripheral information during the seven week interview than during the immediate interview. The Delay Interval x Condition x Feature interaction, $F(1,56) = 4.76, p < .05$, shown in Figure 3, indicates that children in the specific condition reported a higher proportion of incorrect peripheral information at the seven week interview than at the immediate interview. No other significant differences between interviews were found. A higher proportion of incorrect information about peripheral than core features was found, but only when comparing children in the different conditions. That is, children in the general condition reported more incorrect peripheral information at both interviews than did children in the specific condition when reporting core information.

The Age x Delay Interval x Feature interaction, $F(1,56) = 5.42, p < .05$, is shown in Figure 4. Older children provided a greater amount of incorrect peripheral information during the seven week interview than during the immediate interview. No age or feature effects or other time differences were found.

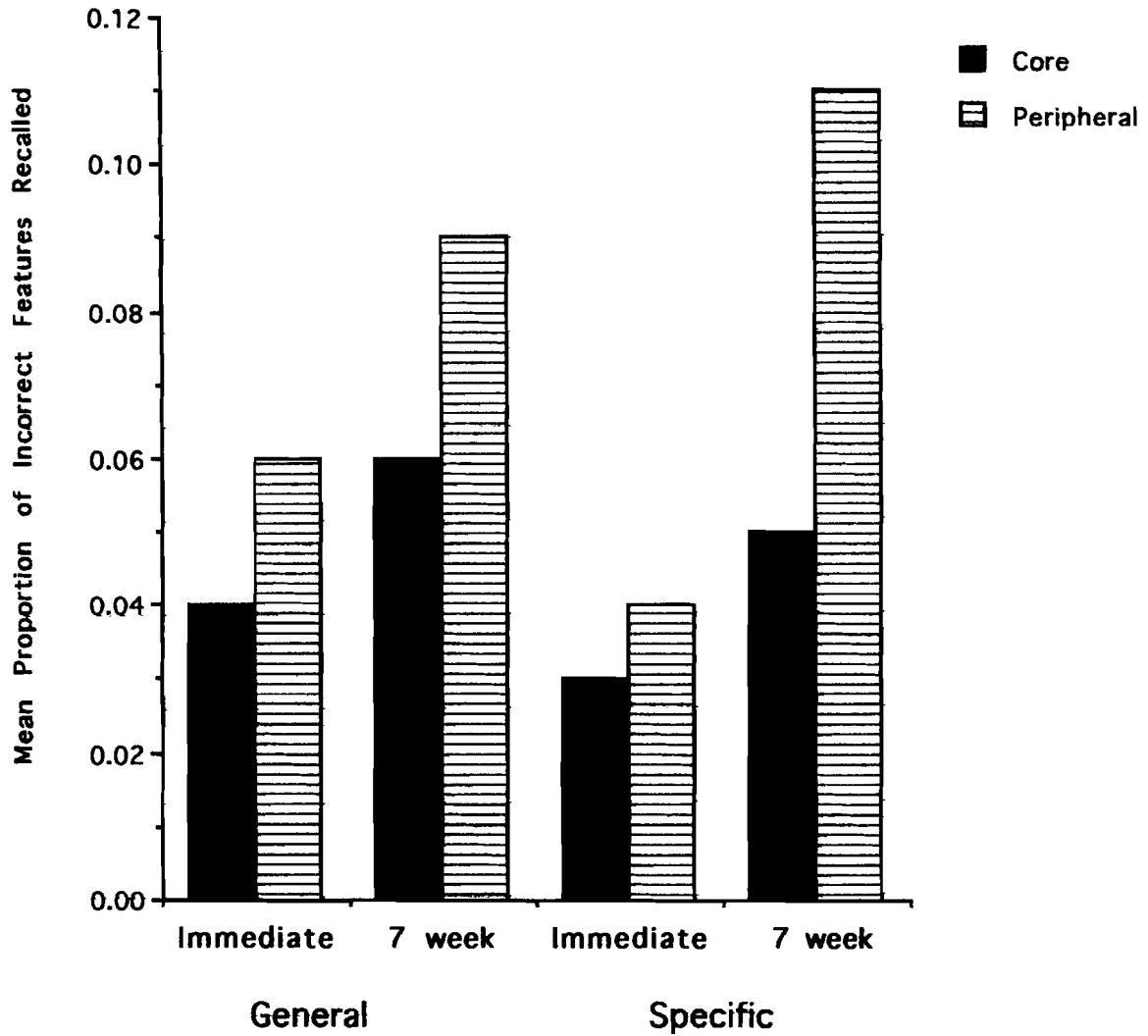


Figure 3: Mean Proportions of Incorrect Core and Peripheral Features Recalled by Delay Interval and by Condition

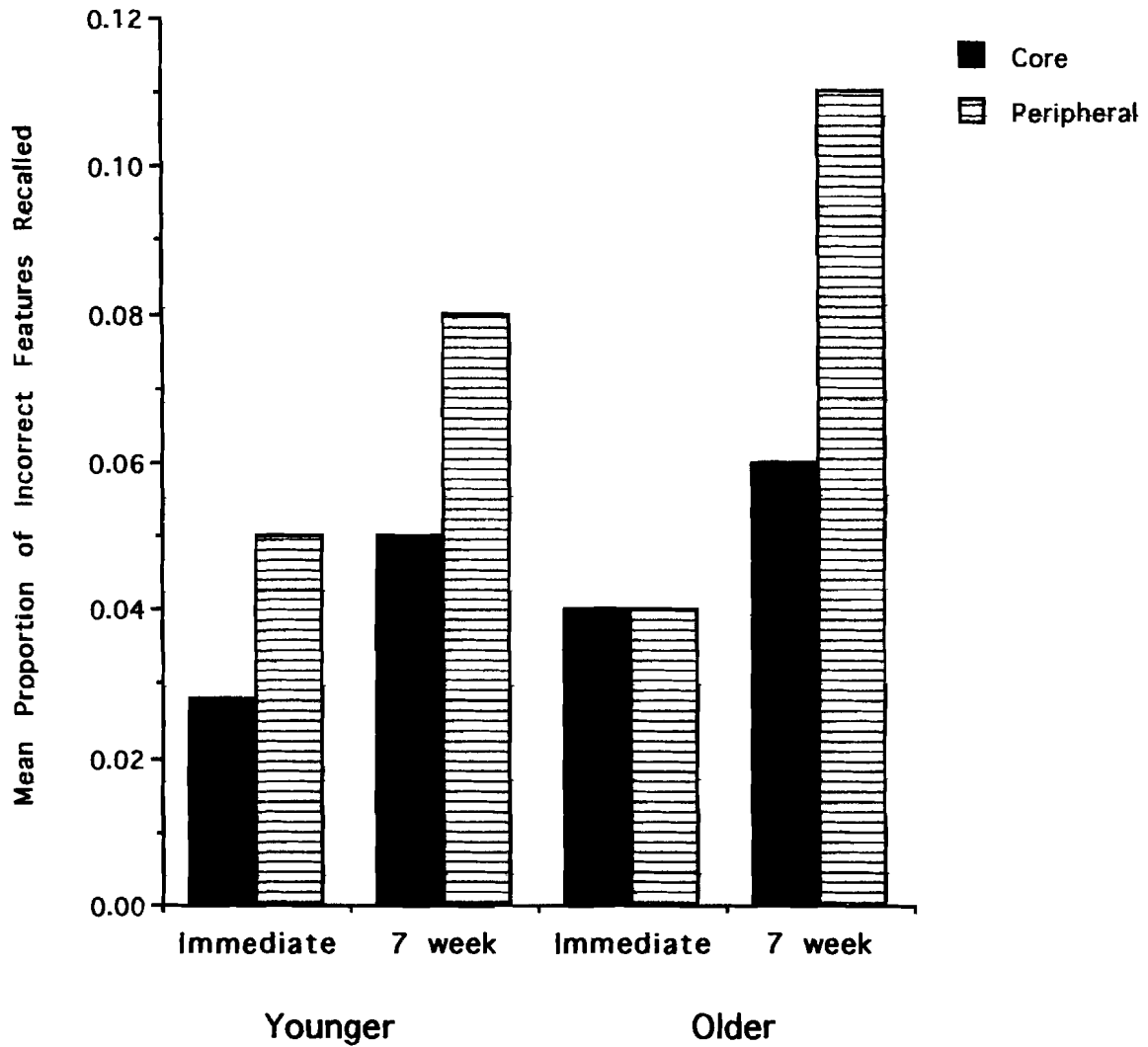


Figure 4: Mean Proportion of Incorrect Core and Peripheral Features Recalled by Age and By Delay Interval

CHAPTER 4

DISCUSSION

The purpose of this study was to explore whether adults can mislead children into reporting false information by questioning them in a suggestive manner. Three factors were proposed to have an effect on this phenomenon, including age, interval delay between event and interview, and the type of questions. In particular, this study compared two levels of elementary school age children using either a general or specific question format for immediate and seven week interviews. Also of interest was whether certain types of false information are more easily implanted than others. That is, children may be more susceptible to suggestion about details they never knew or had forgotten about than for central aspects of the event. The findings are discussed in terms of issues clinicians must consider when interviewing children in abuse cases.

The first hypotheses addressed whether age alone affected accuracy. As predicted, reports by older elementary school aged children did contain a greater proportion of correct information than those by younger elementary school aged children. However, no age differences were found for incorrect information. This result was consistent with other researchers (Baker-Ward et al., 1993; Cassel & Bjorklund, 1995; Ceci & Bruck, 1993) who found that elementary school children reported information more accurately than did preschool children. The finding also suggests that it is important to consider the developmental stage of the child when obtaining testimony. That is, investigators should avoid lumping elementary school age children together into one category for age comparisons.

The second hypotheses focused on whether the delay interval for the interview influenced accuracy. As predicted, the amount of incorrect information reported increased

over time indicating that as forgetting occurred, children provided additional erroneous testimony. Other investigators have also indicated that false memories implanted through incorrect post-event suggestions have persisted over time (Brainerd, Reyna, & Brandse, 1995). Although several researchers have reported a decrease in the amount of correct information recalled over time (Cassel & Bjorklund, 1995; Cohen & Harnick, 1980; Ornstein et al., 1997; Roberts & Blade, 1996), this study did not. Consistent with this finding, there is evidence that the content of children's reports remains accurate and consistent over one week to three years later (Baker-Ward et al., 1993; Ceci & Bruck, 1995; Dent & Stephenson, 1979; Fivush, 1993; Fivush & Schwarzmueller, 1998).

The third hypotheses considered whether the type of questions used to elicit recall would affect accuracy. Contrary to expectation, the questioning format alone did not contribute to differences in accuracy. Past research did indicate that the wording of questions affected the amount of accurate information recalled (Loftus & Palmer, 1974). Ceci and Bruck (1995) explain, however, that the effect of interview questions may be mediated by the age of the witness. This idea is presented later in the discussion section.

The fourth hypotheses focused on whether children's ability to report information accurately was affected by the type of information requested. As predicted, children were able to recall the central features of the event with a higher degree of accuracy than the peripherally related aspects of the event. Cassel and Bjorklund (1995) also reported that children recalled information that was central to the bike theft more accurately than peripheral information. The finding lends credence to the importance of determining whether the information provided by witnesses is central or peripheral to the event. The results indicate that about 70% of obscure details about a crime were forgotten, whereas almost half of the main event features were well remembered. That is, it is important that

researchers categorize the information given in testimony rather than simply reporting the amount of information recalled by the witness.

Although these individual factors do affect accuracy to some degree, they also have a mediating effect in different combinations. The fifth hypotheses addressed whether children may be vulnerable to false memory syndrome because of their age. Age differences in the amount of both correct and incorrect information provided were absent when specific questions were used. This finding indicates that older elementary school children were as susceptible as their younger counterparts to the detrimental effects of misleading questions. Several researchers also reported no age differences in susceptibility to misleading questions (Baker-Ward et al., 1993; Fivush, 1993; Marin, Homes, Guth, and Kovac, 1979), whereas Cassel et al. (1996) found that kindergartners made more errors about the bicycle theft than did fourth graders. In contrast, older children reported a greater amount of correct information than did younger children when general questions were used. Roberts and Blades (1996) also found an increase in the amount of correct information reported with age when open-ended questions were used to elicit recall.

The sixth hypotheses examined whether children would be susceptible to suggestion over time. Contrary to expectation that the type of questions used to elicit recall would affect the amount of incorrect information reported, no differences were found. However, children did report a smaller amount of correct information over time, but only when testimony was elicited with general questions. Delay interval effects were absent from the specific condition because the amount of correct information reported did not decrease. This finding suggests that the initial effects of misleading suggestions does not last over time. A similar conclusion was reached by Dent and Stephenson (1979). They found that the type of questions used initially led to differences in the amount of

correct and incorrect information provided by elementary school children, but this effect dissipated two months later.

The final hypotheses addressed whether the type of feature recalled was affected by the delay interval. Children did report more incorrect details about the theft over time. They also provided more incorrect information about peripheral features than core features during the seven-week interview. However, in this study, the delay interval's effect on the amount of incorrect core and peripheral features recalled was mediated by age and by the type of questions used. Older children reported a greater amount of incorrect peripheral information in the delayed interview than in the immediate interview. In contrast, there were no difference in the amount of errors made by younger children. It is possible that more errors about details were made by older children because they provided more information about the theft in general. This explanation is congruent with conclusions made by Saywitz (1988) and by Baker-Ward et al. (1993). They indicated that older children have greater knowledge and better verbal skills than do younger children. The results also revealed that children were more likely to make errors about peripherally related information after a seven week delay than immediately when given the specific interview.

Conclusions

This study provides support for Bekerian and Bower's (1983) theory that memories are not overwritten as was suggested by Loftus et al. (as cited in Ceci & Bruck, 1993). As predicted by Bekerian and Bowers, children's testimony contained errors congruent with post-event suggestions made during their immediate interviews. However, children were able to report information correctly at the seven week interview despite previous attempts to implant false memories. Thus, the use of misleading questions does

interfere with retrieval of original information but these original memories are still present and can be accessed using general, open-ended questions.

Future research on false memory syndrome should consider manipulating the number of times children are given suggestive, misleading interviews. Although one interview is not sufficient to create false memory syndrome, repeated exposure would enhance children's ability to remember the false information and make it difficult to retrieve the original memory. Another manipulation that should be performed would be to use different authoritative figures, such as the child's mother or a police officer, to give suggestive interviews to the children. Victims typically report crimes initially to parents and/or to police officers. Currently, people believe that parents are using their children to influence the results of custody hearings by falsely accusing the other parent of abuse. In addition, techniques used by police officers heavily rely on specific questions that may mislead witnesses and implant false memories of events.

Clinical Interpretations

The findings from this study can also be used to provide clinicians with advice on interviewing strategies for elementary school aged children. First, older elementary school children are better at providing accurate testimony compared to younger elementary school children, but only when interviewed with open-ended questions. That is, even the older children will acquiesce to misleading questions when suggestive techniques are used. Therefore, clinicians should rely on general, open-ended questions to gather information from clients and avoid using specific questions that may be suggestive or misleading. Second, the longer the delay interval between the event and the interview, the higher the chance that forgetting will occur. Thus, clinicians should be made aware that children who have not talked about events for a long period of time will have difficulty providing

accurate and exhaustive accounts of what happened. As indicated in this study, memory for central aspects of an event will be strong over time, but peripheral details fade quickly. In addition, older children may provide more errors about peripheral details over time, but only because they talk more about events than do younger children. Finally, when asked by attorneys to provide expert testimony, clinicians should be aware that children may report peripheral information incorrectly but that does not infer that their testimony about central features will be inaccurate as well. Moreover, the results of this study show that even when children are given a misleading interview initially, their testimony should be untainted if the subsequent interviews are non-leading.

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Appendix A

INSTITUTIONAL REVIEW BOARD FOR
TREATMENT OF HUMAN SUBJECTS

Project Title: Eyewitness Testimony of Children: The Effects of Age, Time, and Type of Question in an Eyewitness Event

Investigator: Cheryl Blackford

1. Brief description of projects:

a. Purpose. For this research, children will view a 10-minute film portraying two coeds who go to the zoo for the day. There is a two-minute sequence in which two children argue over the use of the younger child's bike and it is then taken by the older child without permission. The zoo scene is considered a distraction task. This project focuses on children's recall of the two-minute sequence only. This study uses open-ended (e.g., "What happened?"), leading questions (e.g., "Was the bike green?" when it was green) and misleading questions (e.g., "Was the bike red?" when it was green) to examine age differences in amount and accuracy of recall (6 - 7 years, and 9 - 10 years).

b. Procedure. This project utilizes children attending public schools in Emporia. Parents will be asked to return consent forms acknowledging permission for children to participate. Parents will be asked to bring their children to the Child Study Team Lab on the third floor of Visser Hall at Emporia State University. During the visit, children will individually view a twelve minute film and then interviewed about their memory for the two-minute sequence. Interviews will be videotape recorded and transcribed verbatim. The question format for the children will be hierarchically organized. That is, children will

be asked general, open-ended questions and elaboration questions (e.g., “Tell me more”), followed by structured, positive, and negative leading questions about information not provided in response to the open-ended questions. While the children are watching the film and being interviewed, parents will fill out background information sheets. Children will be thanked for their assistance.

2. Participants.

a. Age, sex, and approximate number: A total of 60 children (ages as previously outlined) will serve as participants in this research. An equal number of boys and girls will participate.

b. Method of recruiting. I will ask the superintendent of the district and subsequently the principals of several public elementary schools in Emporia for permission to send home parental letters describing the project. Participants will be randomly selected from those children whose parents indicate permission on the consent form and who themselves agree to participate. These parents will be notified of this research in a letter inviting them to consider participating in this project.

3. Are subjects at risk? I do not believe that children are at risk.

4. Steps taken to minimize risk: I designed the interview task to be within the realm of children’s abilities. In addition, only interviewers experienced in working with children will be used. Interviewers will be trained to respect (i.e., be sensitive to) children’s rights to ensure that the interview process will be as enjoyable and non-threatening as possible. Children will be reminded that they may withdraw from the interview at any time.

5. Is deception involved? No.

6. Anticipated benefit to subjects or to society: The results of this research will allow us to understand differences in recall accuracy and completeness due to age.
7. How will informed consent be obtained? Parents will provide written consent and children will provide verbal consent.
8. Security procedures for privacy and confidentiality: To maintain privacy, participants' surnames on various forms will be replaced with identification numbers following the interviews. During the interviews, participants will only be referred to by their first name. Only identification numbers will appear on the videotape and on coding sheets. A master list containing participants' names and numbers, consent forms, and other identifying information will be kept in locked file cabinets. The focus of the final report will be on group results and any examples used will be referred to only by identification number to ensure confidentiality.

Appendix B

Instruction Sheet

Instructions to children for introducing experimenters:

Hello. My name is _____ and this is _____. S/he is going to talk to you later. S/he is almost finished with his/her work.

Instructions to children for watching the movie: **Your parents told me that you like watching movies. I'm going to show you a short home movie that someone took when my friends went to the zoo. Then go to the room with the child and say, I want you to watch the movie--while I do my work. But, please don't talk to me about it because I won't be able to get my work done, ok? Any questions? Good. Enjoy the film.**

Instructions to children to go with interviewers: *After the film ends, the interviewer will enter the room and ask each child to follow him/her to another room for the next phase of the experiment (i.e., the memory interview).*

Guidelines for Obtaining Child Consent: *Note to interviewers: It is absolutely mandatory that each child, regardless of age, be given the opportunity to decline participation in the research. The following script provides a suggested way to obtain verbal consent from the children. Of course, this suggested procedure must be used with flexibility to accommodate the characteristics of children's styles of interaction. However, each child must be explicitly asked whether or not he or she wishes to take part*

in the interviews. Moreover, if the child does not want to continue, he or she may quit.

The child's wishes must be respected.

Hello _____. My name is _____. Your mommy/daddy said it would be okay if we talk for a little while in a nearby room. I'll tell you a little more about it when we get there, ok?

>>if the child says, 'yes': **Good. Let's go there. [skip to p. 3]**

>>if the child hesitates, but does not decline or indicates he or she is not sure, then say: **It's ok if you want to think about it before you tell me. I'll be talking to lots of children your age. Would it be ok if we go and talk?**

>>if the child needs reassurance from the parents, then take the child to the waiting room and let him or her see the parents. Parents will be told not to pressure the children. After a couple of minutes, then say: **Ok. Do you feel better now? Are you ready to go and talk in the other room? Your parents will wait here while we talk.**

>>if the child declines participation, then say: **That's ok. Sometimes children don't feel like talking. Thanks for coming. Have a good day.**

Interactions with the child during the interview process: **>>During the interview, a child who asks to stop may be told: We are almost done, let's just finish these last few questions, ok?**

>>If the interview is not near completion, the interviewer may say: **This doesn't take too long. It would help me if you could talk to me a little more. If you want, we could take a little break and get a drink of water or something.**

>> *After the break: Are you ready to talk to me some more?* >> *If the child resists continuing after a couple of attempts to regain involvement, the interview should be terminated. The interviewer should say, **That's ok. Sometimes children don't feel like talking. Thanks for coming. Have a good day.***

>> *At the end of the interview, the child will be praised for his or her performance and thanked for helping.*

Appendix C

Parental Background Information

Instructions: *In order to interpret children's memory performance, it would be very helpful for you to provide us with some background information. Of course, you are under no obligation to fill in every question, but we would appreciate it if you would complete the form.*

Please provide the following information.

Child's name: _____ Gender _____

Age: _____ years _____ months Date of Birth: _____

Number of hours per day child watches educational t.v. _____

Your relationship to the child:

_____ Mother _____ father _____ grandparent _____ Guardian

_____ Other (specify _____)

Mother's Occupation: _____

Years of Education (indicate highest level):

- _____ completed graduate degree
- _____ college graduate
- _____ some college, no degree
- _____ high school graduate or vocational school graduate
- _____ partial high school (more than 9th grade)
- _____ junior high school (completed 7th through 9th grade)
- _____ less than seven years of school

Father's Occupation: _____

Years of Education (indicate highest level):

- _____ completed graduate degree
- _____ college graduate
- _____ some college, no degree
- _____ high school graduate or vocational school graduate
- _____ partial high school (more than 9th grade)
- _____ junior high school (completed 7th through 9th grade)
- _____ less than seven years of school

Family Income:

Less than \$10,000 _____ \$10000-20000 _____ \$21000-30000 _____
 \$31000-40000 _____ \$41000-50000 _____ \$51000-60000 _____
 \$61000-70000 _____ More than \$70000 _____

Do you have other children in your family? _____ If so, please indicate the date of birth, sex, and name of each child below.

Date of Birth Sex of child Name

Appendix D

General Memory Interview Questions

Male Consistent (N-P version)

Instructions: *Be certain to start with questions #1 and #2. Write down the features on the checklist as they are mentioned. For Q#1, ask the children to elaborate on each feature that is mentioned after they list all features (e.g., Tell me more about ____). For Q#2 and the specific questions, follow up with elaboration immediately. For most items listed on the checklist, there is a corresponding question in the Specific Questions section. Write down OE answers next to the appropriate item (i.e., in response to question #1 or #2). If mentioned at the Open-ended level, **DO NOT** ask the corresponding Specific Questions. The number of the Specific Question is located to the right of the checked item. Write "Y" for yes and "N" for no to represent child's response to leading questions.*

Instructions to children for the memory interview:

[Turn on camcorder]

I am going to put on this camera to help me remember everything you say.

____ (child's first name) everyone who works with me gets a special number and yours is ____ (subject number), but you don't have to remember that.

Sometimes something happens to people and they need to call the police to get some help. The police officers' job is to find out more information. So they go around asking if anyone saw what happened. If people know any information, they are supposed to tell the police what they saw. You just saw a movie about twins who

went to the zoo. I was told that the twins saw something happen to a bike. So if the police asked them about that, they would have to tell everything they saw. My job is also important because I want to find out how much children can remember about activities that they see.

I don't know what happened in the movie because I didn't watch it. So I want you to tell me everything you REALLY REALLY remember about what happened to the bike. But, I don't need to know anything about what the twins did at the zoo. I will be asking you lots of questions. If you don't understand a question, just say, "I don't understand what you mean." Also, if I ask a question and you don't remember or you are not sure about your answer, just tell me, "I don't know." I'm going to write down everything you say so try not to talk too fast. OK, are you ready?

General Questions

1. Tell me about what happened to the bike. OE1

[Let the child list all the features before you go back through the list to ask for elaboration.]

What else happened with the bike? [ask until list is completed.]

[When the child's list seems exhausted, ask]

Was there anything else that happened to the bike?

For each feature mentioned, but not elaborated, ask:

You said _____. Tell me more about _____. [ELAB]

EX: Tell me more about the bike.

If the child says "Took it" then ask clarification question:

What did the boy do when he took the bike (how did he take it)?

2. Good Job. You told me some (a bunch of) things I needed to know. Now I want you to think about what happened with the boy and the girl again. But this time, I want you to start from the beginning and go all the way to the end. Try not to leave anything out.

[Remember to follow up IMMEDIATELY on any NEW features]

What was the first thing that happened? TOE1

If the child says IDK, I don't remember, or I already told you, then you may respond:

a). **Think about all the things you told me about. Which one happened first?**

OR

b). **You told me a lot of things. Think about which one was the first thing.**

What happened next (after that)? [repeat as often as necessary.]

For each feature mentioned, but not elaborated, ask:

You said _____. Tell me more about _____. [ELAB]

EX: Tell me more about the bike.

If the child says "Took it" for the 1st time, then ask clarification question:

What did the boy do when he took the bike (how did he take it)?

[When the child seems finished, ask]

Is that the last thing that happened?

When the child has told you all that she or he can, proceed to Leading Questions and ask

about those items not already mentioned.

You did a good job. I have some more questions for you. I want you think about what happened with the bike again.

Go to Leading questions if you have your checklist complete, or else say:

I just need a minute to check my notes.

On the checklist, mark an X next to LQ child has already provided at the OE level--do not ask those questions.

General Interview Format Leading Questions

NLQ = negative leading question; PLQ = positive leading questions

On the checklist--write down answers to OE3 questions on the line provided. If you need to ask the follow-up questions, write down Y for yes, N for no, and IDK for I don't know or remember next to each one.

For these questions, I need you to tell me only what you REALLY, REALLY remember. If you don't remember or you are not sure about your answer, just tell me, "I don't know."

** Only ask these questions if the answers were NOT mentioned in response to the General Questions.*

Even if the child provides the Wrong Answer at OE1 level, ask OE3 question

FOR ACTIONS ONLY.

**Also, if kids just nod or shake their head, tell them "It is really important that you tell me your answers in words."*

**Also, if kids are responding with "I think" or "Maybe" then remind them, "It is*

really important that you only tell me what you really, really remember about what happened in the movie.” *Don’t let kids infer information, have them report ONLY what they saw. Be sure to ask them if they remember whether it happened or not, by saying, “Do you remember_____?”*

**If child is asked first LQ question and gives a spontaneous response before you can ask the second LQ question, then say: “So, ...” and then state the question.*

** If a child does not respond, or answers, “I don’t know” to the OE3 question, ask both the positive and negative leading questions that follow.*

** IF THE CHILD SAYS, “YES” to both the NLQ and PLQ, repeat both options and then ask the child to choose ONE: “Which one was it?”*

BICYCLE

I need to know more about the bike that was taken.

3. Tell me whose bike it was. OE3

If the child does not understand the question, ask the Alternative question.

Who did it belong to?

If the child tells you boy or girl, skip to #4.

IF the child responds I don’t know or doesn’t respond, then ask:

NLQ: 1. Did the bike belong to the boy?

PLQ: 2. Did the bike belong to the girl?

Be sure to get clarification if child responds YES to both a & b.

4. Tell me the color of the bike. OE3

IF the child responds I don’t know or doesn’t respond, then ask:

NLQ: 1. **Was the bike red?**

PLQ: 2. **Was the bike black?**

Be sure to get clarification if child responds YES to both a & b.

5. Tell me what type of bike it was. OE3

If the child tells you some type (even the wrong one) skip to #6.

If the child tells you it was a ten speed, ask C1 and C2. IF the child responds I don't know or doesn't respond, then ask

NLQ: 1. **Was it a ten speed bike?**

PLQ: 2. **Was it a mountain bike?**

Be sure to get clarification if child responds YES to both a & b.

IF the child responds IDK to A or B, or YES to ten speed, ask:

NLQ 1c. **Was it a bike only for boys?**

PLQ 2c. **Was it a bike for both boys and girls?**

Be sure to get clarification if child responds YES to both a & b.

IF the child responds NO to A or B, go to #6.

ACTIONS

I need to know a little more about what happened between the girl and the boy.

6. Tell me what the girl was doing when the boy first came up to her. OE3

You may accept sitting (without bench) and singing (without songs) as correct responses (in these cases, don't ask LQ),

Go to #7.

If the child provided partial answer during OE1/TOE1, ask the Alternative question.

You may repeat the question, if necessary, before going on to ask the leading questions.

You told me _____, what else was the girl was doing when the boy first came up to her?

For each NEW feature mentioned, but not elaborated, ask:

You said _____. Tell me more about _____.

IF the child provides answers for only one pair at the OE3 level, ask the alternative before asking the second leading question pair.

IF the child responds nothing, I don't know or doesn't respond ,ask:

A. NLQ: 1. Was she swinging on a swing?

PLQ: 2. Was she sitting on a bench?

Be sure to get clarification if child responds YES to both a & b.

B. NLQ: 1. Was the girl eating crackers?

PLQ: 2. Was the girl singing songs?

Be sure to get clarification if child responds YES to both a & b.

7. What songs did someone sing in the movie? OE3L

If child says the correct songs, skip to #8.

If child only mentions one song, ask the alternative question and repeat as necessary:

You said ___ sang ____, can you tell me if _____ sang another song?

If the child says, YES:

What other song did she sing?

If child can not remember the name of the other song, ask leading questions for set containing other song.

If the child responds nothing, I don't know or doesn't respond, ask leading questions for both set A and set B.

A. NLQ: 1. **Did someone sing 'Itsy Bitsy Spider'?**

PLQ: 2. **Did someone sing 'Bingo'?**

Be sure to get clarification if child responds YES to both a & b.

B. NLQ: 1. **Did someone sing 'Mary Had a Little Lamb'?**

PLQ: 2. **Did someone sing 'Row Row Row Your Boat'?**

Be sure to get clarification if child responds YES to both a & b.

If the child claims not to know the songs mentioned, just say,

"That's ok."

8. Tell me what the boy did when he first saw the bike? OE3L

If child says touch it, skip to #9.

If the child mentions look or took it, then ask alternative question:

You said the boy ___ when he first saw the bike, did he do anything else?

For each NEW feature mentioned, but not elaborated, ask:

You said _____. Tell me more about _____.

You told me ___ when the boy first saw the bike. Did he do anything else?

If child responds "nothing", "I don't know" or doesn't respond; or says "look" or "took it," then ask:

NLQ: 1. **Did the boy kick it with his foot?**

PLQ: 2. **Did the boy touch it with his hand?**

Be sure to get clarification if child responds YES to both a & b.

9. Tell me, did the boy and the girl argue about anything? OE3

If the child responds, yes, then ask elaboration question:

Tell me what they argued about.

If it is not clear that the child did not want the older one to use the bike, then ask the leading questions:

IF child responds no, I don't know or doesn't respond, then ask:

NLQ: 1. **Did the girl want the boy to sit somewhere else?**

PLQ: 2. **Did the girl want the boy to leave the bike alone?**

Be sure to get clarification if child responds YES to both a & b.

10. Tell me, did the boy touch the girl? OE3

If child says yes, ask elaboration question,

Tell me how the boy touched the girl (what did he do).

IF the child responds no, I don't know or doesn't respond, then ask:

NLQ: 1. **Did the boy pat the girl's head?**

PLQ: 2. **Did the boy punch the girl's arm?**

Be sure to get clarification if child responds YES to both a & b.

11. Tell me what the girl did when the boy first tried to walk off with the bike. OE3L

If the child tells you one feature, then ask alternative:

You said the girl _____, tell me what else the girl did when the boy first tried to walk off with the bike.

** If the child provides answers for only one pair, then ask the other leading question pair.*

** IF the child responds nothing, I don't know or doesn't respond, then ask both set A & B of the leading questions:*

A. NLQ: 1. **Did the girl kick over the bench?**

PLQ: 2. **Did the girl struggle over the bike?**

Be sure to get clarification if child responds YES to both a & b.

B. NLQ: 1. **Did the girl push the bike under the bench?**

PLQ: 2. **Did the girl move the bike to the other side of the bench?**

Be sure to get clarification if child responds YES to both a & b.

12. **Tell me what the boy did when the girl wouldn't let him use the bike.** OE3L

IF the child says one feature, ask the alternative question:

You told me the boy _____, tell me what else the boy did when the girl wouldn't let him use the bike.

If the child says "Took it" then ask clarification question:

What did the boy do when he took the bike (how did he take it)?

IF the child provides answers for only one pair, then ask the other leading question pair.

IF the child responds nothing, I don't know or doesn't respond, then ask both leading questions:

A. NLQ: 1. **Did the boy stick out his tongue at the girl?**

PLQ: 2. **Did the boy pretend to slit his throat with his finger?**

Be sure to get clarification if child responds YES to both a & b.

B. NLQ: 1. **Did the boy knock the bike down and walk away?**

PLQ: 2. **Did the boy grab the bike and ride away?**

Be sure to get clarification if child responds YES to both a & b.

13. **Tell me, did the boy call the girl a name? OE3**

If the child responds, YES, ask:

Tell me the name he called her.

If the child tells you a name, even the wrong one, (“jerk will be accepted as the right answer), go to #14.

If the child responds NO, I don’t know or doesn’t respond, then ask:

NLQ: 1. **Did he call her “ a dumb baby?”**

PLQ: 2. **Did he call her “ a stupid jerk?”**

Be sure to get clarification if child responds YES to both a & b.

14. **Tell me, did the girl do anything when the boy rode away on the bike? OE3**

ALT: You told me the girl _____, did the girl do anything else when the boy rode away on the bike?

If the child answers YES, then ask:

“ Tell me what she did.”

If the child responds no, I don’t know or doesn’t respond, then ask:

A. NLQ: 1. **Did the girl get sad?**

PLQ: 2. **Did the girl get angry?**

Be sure to get clarification if child responds YES to both a & b.

B. NLQ: 1. **Did the girl begin to cry?**

PLQ: 2. **Did the girl stomp her foot?**

Be sure to get clarification if child responds YES to both a & b.

15. **Tell me who came up to the girl when she was upset.** OE3L

If the child responds, Dad, then skip to #16.

If the child responds nobody, I don't know or doesn't respond, then ask:

NLQ: 1. **Did her mother come up to her?**

PLQ: 2. **Did her father come up to her?**

Be sure to get clarification if child responds YES to both a & b.

16. **Tell me what the girl's father/mother did when s/he saw the girl was upset.** OE3L

For this question, refer to #15 above. Use 'mother' if the child indicated the mother comforted the victim. If the child indicates the father comforted the victim, or the child does not know, use the word "father." If the child indicate mother, then say 'she,' whereas you should use 'he' for the father.

For each NEW feature mentioned, but not elaborated, ask:

You said _____. Tell me more about _____.

If the child says, "arm around shoulder" skip to #17.

If the child responds nothing, I don't know or doesn't respond, then ask:

NLQ: 1. **Did s/he go running after the boy?**

PLQ: 2. **Did s/he put a hand on the girl's shoulder?**

Be sure to get clarification if child responds YES to both a & b.

PHYSICAL CHARACTERISTICS

I need to know a little more about the boy.

17. Tell me the boy's name. OE3

If the child responds I don't know or doesn't respond, then ask:

NLQ: 1. Was the boy's name Ashley?

PLQ: 2. Was the boy's name Frankie?

Be sure to get clarification if child responds YES to both a & b.

18. Tell me, what color was the boy's hair?. OE3

If the child responds I don't know or doesn't respond, then ask:

NLQ: 1. Was the boy's hair light blonde?

PLQ: 2. Was the boy's hair dark brown?

Be sure to get clarification if child responds YES to both a & b.

19. Tell me, how did the boy wear his hair? OE3

Modify if child said medium or long at OE1/TOE1 level,

You told me the boy had medium (long) hair. Can you tell/show me how he wore it?

If necessary, use the alternative question:

Tell/show me what length (how long) it was?

If child responds I don't know or doesn't respond, then ask:

NLQ: 1. Did he wear it long?

PLQ: 2. Did he wear it short?

Be sure to get clarification if child responds YES to both a & b.

** If the child responds "short" or No to A, then skip to #20.*

** If the child responds "medium" or "long," I don't know, or doesn't respond, then ask:*

NLQ: 1. Did he wear it down?

NLQ: 2. Did he wear it in a pony-tail?

Be sure to get clarification if child responds YES to both a & b.

Now I need to know about the girl.

20. Tell me the girl's name. OE3L

If the child says, kid or sport or we never learn it, then skip to #21

If the child responds I don't know or doesn't respond, then ask:

NLQ: 1. Was the girl's name Frankie?

NLQ: 2. Was the girl's name Ashley?

Be sure to get clarification if child responds YES to both a & b.

21. Tell me, what color was the girl's hair? OE3

If the child tells you a color, skip to #22.

If the child responds I don't know or doesn't respond, then ask:

NLQ: 1. Was her hair dark brown?

PLQ: 2. Was her hair light blonde?

Be sure to get clarification if child responds YES to both a & b.

22. Tell me which child was taller. OE3L

If the child doesn't understand, then ask the alternative:

Which of the children was taller (when they were both standing).

If the child responds I don't know or doesn't respond, then ask:

NLQ: 1. **Was the girl taller?**

PLQ: 2. **Was the boy taller?**

Be sure to get clarification if child responds YES to both a & b.

23. Tell me which child was older. OE3L

If the child doesn't understand, then ask the alternative:

Which of the children was older?

If the child responds I don't know or doesn't respond, then ask:

NLQ: 1. **Was the girl a few years older than the boy?**

PLQ: 2. **Was the boy a few years older than the girl?**

Be sure to get clarification if child responds YES to both a & b.

Now let's talk about the father.

24 a. Tell me what the father looked like. OE3

If the child answers the question, use elaboration questions after each NEW feature, such as "Tell me more about ____"

b. Tell me, what color hair did the father have?

(ask if not answered in A)

IF the child responds I don't know or doesn't respond, then ask:

NLQ: 1. **Was the father's hair light blonde?**

PLQ: 2. **Was the father's hair dark brown?**

Be sure to get clarification if child responds YES to both a & b.

CLOTHING

Now I need to know about the clothes the children were wearing.

25. Tell me everything the boy was wearing. OE3

If the child mentioned clothes already, then ask the alternative question as often as necessary before asking leading questions.

“You said the boy was wearing _____. Can you tell me what else he was wearing?” “Was he wearing anything else?”

If the child answers the question, use elaboration questions after each NEW feature, such as “

Tell me more about _____”

If the child responds I don't know or doesn't respond, then ask:

NLQ: 1. Was he wearing a pink shirt?

PLQ: 2. Was he wearing a black shirt?

Be sure to get clarification if child responds YES to both a & b.

26. What type of shoes was he wearing?

If the child responds I don't know or doesn't respond, then ask:

NLQ: 1. Was he wearing sandals?

PLQ: 2. Was he wearing hiking boots?

Be sure to get clarification if child responds YES to both a & b.

27. Tell me what the girl was wearing. OE3

If the child mentioned clothes already, then ask the alternative question as often as necessary before asking leading questions.

**“ You said the girl was wearing _____. Can you tell me what else she was wearing?”
“Was she wearing anything else?”**

If the child answers the question, use elaboration questions after each NEW feature, such as

Tell me more about ____.

DO NOT ASK the leading question pair that the child has already answered (either correctly or incorrectly).

If the child responds I don't know or doesn't respond, then ask:

A. NLQ: 1. **Was she wearing shorts?**

PLQ: 2. **Was she wearing jeans?**

Be sure to get clarification if child responds YES to both a & b.

B. NLQ: 1. **Was she wearing sandals?**

PLQ: 2. **Was she wearing sneakers?**

Be sure to get clarification if child responds YES to both a & b.

28. Tell me, who was wearing a watch? OE3L

If the child answers the question, use elaboration questions after each NEW feature, such as “ Tell me more about ____ ”

If the child responds no one, father, I don't know or doesn't respond, then ask

A. NLQ: 1. **Was the girl wearing a watch?**

PLQ: 2. **Was the boy wearing a watch?**

Be sure to get clarification if child responds YES to both a & b.

If yes, I don't know or doesn't respond for BOY, then ask:

NLQ: 1. **Was it a small gold watch?**

PLQ: 2. **Was it a big black watch?**

Be sure to get clarification if child responds YES to both a & b.

29. Tell me, was the older child a girl or a boy?

THANK YOU FOR HELPING ME. YOU DID A GREAT JOB!!

Appendix E

Specific Memory Interview Questions

Male Consistent (N-P version)

Instructions: *Be certain to start with questions #1 and #2. Write down the features on the checklist as they are mentioned. For Q#1, ask the children to elaborate on each feature that is mentioned after they list all features (e.g., Tell me more about ____). For Q#2 and the specific questions, follow up with elaboration immediately. For most items listed on the checklist, there is a corresponding question in the Specific Questions section. Write down OE answers next to the appropriate item (i.e., in response to question #1 or #2). If mentioned at the Open-ended level, **DO NOT** ask the corresponding Specific Questions. The number of the Specific Question is located to the right of the checked item. Write “Y” for yes and “N” for no to represent child’s response to leading questions.*

Instructions to children for the memory interview:

[Turn on camcorder]

I am going to put on this camera to help me remember everything you say.

____ (child’s first name) everyone who works with me gets a special number and yours is ____ (subject number), but you don’t have to remember that.

Sometimes something happens to people and they need to call the police to get some help. The police officers’ job is to find out more information. So they go around asking if anyone saw what happened. If people know any information, they are supposed to tell the police what they saw. You just saw a movie about twins who

went to the zoo. I was told that the twins saw something happen to a bike. So if the police asked them about that, they would have to tell everything they saw. My job is also important because I want to find out how much children can remember about activities that they see.

I don't know what happened in the movie because I didn't watch it. So I want you to tell me everything you REALLY REALLY remember about what happened to the bike. But, I don't need to know anything about what the twins did at the zoo. I will be asking you lots of questions. If you don't understand a question, just say, "I don't understand what you mean." Also, if I ask a question and you don't remember or you are not sure about your answer, just tell me, "I don't know." I'm going to write down everything you say so try not to talk too fast. OK, are you ready?

Tell me about what happened to the bike. OE1

[Let the child list all the features before you go back through the list to ask for elaboration.]

What else happened with the bike? [ask until list is completed.]

[When the child's list seems exhausted, ask]

Was there anything else that happened to the bike?

For each feature mentioned, but not elaborated, ask:

You said _____. Tell me more about _____. [ELAB]

EX: Tell me more about the bike.

If the child says "Took it" then ask clarification question:

What did the boy do when he took the bike (how did he take it)?

Good Job. You told me some (a bunch of) things I needed to know. Now I want you to think about what happened with the boy and the girl again. But this time, I want you to start from the beginning and go all the way to the end. Try not to leave anything out.

[Remember to follow up IMMEDIATELY on any NEW features]

What was the first thing that happened? TOE1

If the child says IDK, I don't remember, or I already told you, then you may respond:

a). **Think about all the things you told me about. Which one happened first?**

OR

b). **You told me a lot of things. Think about which one was the first thing.**

What happened next (after that)? [repeat as often as necessary.]

For each feature mentioned, but not elaborated, ask:

You said _____. Tell me more about _____. [ELAB]

EX: Tell me more about the bike.

If the child says "Took it" for the 1st time, then ask clarification question:

What did the boy do when he took the bike (how did he take it)?

[When the child seems finished, ask]

Is that the last thing that happened?

When the child has told you everything s/he can, proceed to Negative Leading Questions and ask ALL the items regardless of their previous answers.

You did a good job. I have some more questions for you.

I have interviewed several children who told me what happened, but I need more information, so I need you to tell me only what you REALLY, REALLY remember. If you don't remember or you are not sure about your answer, just tell me, "I don't know." Think about what happened to the bike again.

Ask All of the Negative Leading Questions REGARDLESS of their previous answers.

If the children just nod or shake their head, tell them It is really important that you tell me your answers in words.

BICYCLE

I need to know more about the bike that was taken.

- 3. The bike belonged to the boy, didn't it?**
- 4. Was the color of the bike red?**
- 5. The bike was a ten speed, wasn't it?**

IF the child responds YES or IDK to ten speed, ask-
Was it a bike only for boys?

IF the child responds NO, go to #6.

ACTIONS

We need to know a little more about what happened between the girl and boy.

- 6. Think about what the girl was doing when the boy first came up to her.**
 - A. The girl was swinging on a swing, wasn't she?**
 - B. Was the girl eating crackers?**
- 7. Think about the song someone sang in the movie.**
 - A. Did someone sing the Itsy Bitsy Spider?"**
 - B. Someone sang "'Mary Had a Little Lamb," is that right?**
- 8. Now I want you to think about when the boy first saw the bike.**
 - A. Did the boy kick it with his foot?**

9. The boy and girl were arguing about something. Was it that the girl wanted the boy to sit somewhere else?
10. The boy patted the girl's head, didn't he?
11. I want you to think about when the boy first tried to walk off with the bike.
- A. Did the girl kick over the bench?
- B. The girl pushed the bike under the bench, didn't she?
12. Think about when the girl wouldn't let the boy use the bike.
- A. Did the boy stick out his tongue at the girl?
- B. The boy knocked the bike down and walked away, didn't he?
13. The boy called the girl " a dumb baby," didn't he?
14. Now think about when the boy rode away on the bike.
- A. The girl got sad, didn't she?
- B. Did the girl begin to cry?
15. Who came up to the girl when she was upset - it was her mother, wasn't it?

For the following questions use 'mother' whether the child indicated the mother or not.

16. When the mother saw the girl was upset, did she go running after the boy?

PHYSICAL CHARACTERISTICS

I need to know a little more about the boy.

17. The boy's name was Ashley, wasn't it?
18. Was the boy's hair light blonde?
19. Think about the boy's hair.

A. The boy wore his long hair down, didn't he?

B. Was his long hair in a pony-tail?

Now I need to know about the girl.

20. Was the girl's name Frankie?

21. Her hair was dark brown, wasn't it?

22. The girl was taller than the boy, wasn't she?

23. Was the girl a few years older than the boy?

Now let's talk about the mother.

24. Was the mother's hair light blonde?

CLOTHING

Now I need to know about the clothes the children were wearing.

25. First, think about what the boy was wearing.

A. Was he wearing a pink shirt?

B. He was wearing sandals, wasn't he?

26. Now, think about what the girl was wearing.

A. The girl was wearing shorts, wasn't she?

B. Was the girl wearing sandals?

27. The girl was wearing a watch, wasn't she?

IF YES or IDK or NR to the above ask:

Was it a small gold watch?

Thank you for helping me. You did a great job.

Appendix F

MALE CONSISTENT GENERAL AND SPECIFIC CODING SCHEME

The Child Study Team members will score the correct and erroneous information on individual coding sheets. The information elicited from the children will be given two scores, which will be multiplied together to ascertain a total correct or error score. The first value will reflect the completeness of the answer. The response will then be coded based upon the prompt level at which the information is given (i.e., OE-1, TOE-1, OE-3, and LQ). After the two point values are assigned the coder multiplies the scores to ascertain a total correct or erroneous score for each feature.

The first numeric score will indicate how completely the children answered the question. The coding for correct point values will be assigned at all open-ended levels as follows: Elaborated credit (3 points) will be given when the children gives correct information with details (e.g., curly brown hair) and/or dialogue, Full credit (2 points) will be given when the children gives correct information alone, and Partial credit (1 point) will be given when they give some correct information (e.g., detail or correct dialogue). Credit for elaboration is given for information provided in any part of the interview. That is, elaboration does not have to be given at the time the correct response is given. For example, children can provide this information at the OE-1, OE-3, or even in response to an NLQ in the specific interview. The point value of 0 will be assigned when the children do not respond with an answer, or if they indicate they do not know the answer.

The second numeric score will reflect the weight for the level (i.e., OE-1, TOE-1, or LQ) at which the children responds correctly. For example, if they correctly respond at the open-ended level (OE-1 or TOE-1) the weighted point value assigned will be 4. In addition, the OE-3 prompt level weighted point value assigned will be 2. Finally, if the correct response is supplied at the LQ level the weighted point value assigned will be 1. The prompt level point value will reflect the level at which the correct information is given, not based on the level the elaboration is given. For example, should the children give correct dialogue at the OE-1 level, but not give the correct answer until the OE-3 level the weighted point value assigned will be 2 points reflecting the level where the correct information was obtained. However, if the correct response is not given at all the children will still receive credit for the elaborated response and assigned a weighted point value based reflective of the level at which the elaboration is given. The point values are weighted to reflect the difficulty of the task. The error score sheet will be coded in a like manner.

The first and second scores will then be multiplied to reveal a total correct or error score for each question. For example, if a child gives a partial credit answer at the OE-1 level the child would receive 1 point for the partial credit answer multiplied by 4 points for weight because the question was answered at the OE-1 level for a total of 4 points. The features are subdivided into four categories regarding the bike, the children's actions,

physical characteristics, and clothing. Each category will indicate a subtotal of points for the aforementioned features.

Special cases

1.) If children initially give the wrong answer but later, during the interview, correct themselves, it is considered a spontaneous correction and will be coded as if the wrong answer had not been given. For example, when a child provides the correct information when asked about another feature. Another example is when a child responds affirmatively to both the PLQ and the NLQ and is subsequently asked to choose which one is the correct response and he or she correctly responds that the answer is the PLQ. In contrast, if the children give the correct response and later give erroneous information spontaneously, then code the information as error only.

2.) Both the gist dialogue and the verbatim statement will be scored as elaboration whether it is given as a direct quote or given indirectly. For example, it is not necessary for the children to remember the exactly wording of “Get back here, stop, stop, that’s my bike, come back, come back,” it would be acceptable for children to state that the girl yelled to come back, or to state “She said, come back with my bike.”

3.) In all cases, the children will be given the maximum number of points. For example, if a child gives correct dialogue at the OE-1 level, but does not receive credit for the specific feature until the LQ level the coder will figure the score both ways and allow the child the maximum point value. However, if no information is provided for a feature

due to an experimenter/interviewer error (IE) no credit will be given unless the correct response is given prior to the error. Further, if the child provides information at the OE-1 or TOE-1 level, but the interviewer mistakenly asks for information for the same feature at the OE-3 or LQ level, coders should ignore the OE-3 or LQ level response.

General interview scoring

A.) Open-ended responses: See pages 6 to 13 to score OE-1, TOE-1, and OE-3 responses.

B.) For the leading questions use the following chart to assign numeric scores.

Positive LQ	Negative LQ	Score	Specific Terms
IDK	No	1C point	Correct Denial
IDK	Yes	1E point	False Alarm
No	IDK	1E point	Miss
Yes	IDK	1C point	Hit
No	No	1E/1C	Miss + Corr. Denial
Yes	Yes	1C/1E	Hit + False Alarm
Yes	No	2C points	Hit & Correct Denial
No	Yes	2E points	Miss & False Alarm

Specific interview scoring

The specific interview will be scored in the same manner for answers given at the OE-1, TOE-1 level. In addition, the following chart will assist in clarifying the scoring process for the specific interview only.

A.) For open-ended responses (see general interview scoring).

B.) For NLQ responses use the following chart:

OE-1 and TOE-1	NLQ	Correct	Error
Feature is Present and CORRECT	“No” and gives incorrect detail	OE-1	1 point
	“No” and gives correct response	OE-1	0 points
	“No” only	OE-1	0 points
	I Don’t Know (IDK) or IDK	OE-1	1 point
	“Yes” with correct elaboration	1 point	2 points
	“Yes” with incorrect elaboration	0 points	3 points
	“Yes” only	0 points	2 points
OE-1 and TOE-1	NLQ	Correct	Error
Feature is Present and INCORRECT	“No” and gives corrected response	3 points	0 points
	“No” and gives correct elaboration	1 point	OE-1
	“No” and gives an incorrect elaboration	0 points	OE-1
	“No” only	0 points	OE-1
	IDK	0 points	OE-1
	“Yes” with correct elaboration	1 point	OE-1
	“Yes” with incorrect elaboration	0 points	OE-1
“Yes” only	0 points	OE-1	
Feature is absent	“No” and gives correct response/elaboration	3 points	0 points
	“No” and gives an incorrect elaboration	2 points	1 point
	“No” only	2 points	0 points
	IDK	0 points	0 points
	“Yes” with correct elaboration	1 point	2 points
	“Yes” with incorrect elaboration	0 points	3 points
	“Yes” only	0 points	2 points

Open-ended scoring - Use the following to score OE-1, TOE-1, and OE-3 responses.

FEATURE	BIKE	
3.	Owner	
Full credit: Girl or her bike or girl's bike		2 points
ERROR		
Error full credit: Boy or Dad or anyone else.		2 points
4.	Color Of The Bike	
Elab: Black bike with...Trek written on it		3 points
Full credit: Black		2 points
Partial credit: dark or blackish blue or purple		1 point
ERROR		
Error partial credit: incorrect detail		1 point
Error full credit: red or any other color not listed above		2 points
Elab error credit: Incorrect color and incorrect detail		3 points
5.	Model Of The Bike	
Full credit: Mountain bike, or straight handlebars or other correct features		2 points
Partial credit: 15 speed or for both girls and boys		1 point
ERROR		
Error partial credit: incorrect feature of bike		1 point
Error full credit: 10 speed or curved handlebars or for boys or girls		2 points
Elab error credit: 10 speed and an incorrect feature		3 points
FEATURE	ACTIONS	
6.	What Was The Victim Doing Prior To The Perp's Arrival	
6a. Response A.	Sitting	
Elab: Sitting on a bench or at a table		3 points
Full credit: Sitting		2 points
Partial credit: In a picnic area or the bike was next to her		1 point
ERROR		
Error partial credit: incorrect detail		1 point
Error full credit: swinging, or any other answer not listed		2 points
Elab error credit: Incorrect answer and incorrect detail		3 points
6b. Response B	Singing	
Elab: Singing a song and ...clapping		3 points
Full credit: Singing a song		2 points
Partial credit: Rhymes or clapping		1 point
ERROR		
Error full credit: eating crackers or anything other than listed		2 points
Elab error credit: 2 or more incorrect answers		3 points

- 7. Songs**
- 7a. Response A First Song**
- Elab: Bingo AND she clapped (DO NOT count 2x)
or gives serial position (1st song) or she only sang part of the song 3 points
- Full credit: Bingo, B-I-N-G-O, or sings the song. 2 points
- Partial credit: Something about a farmer AND a dog 1 point
- ERROR**
- Error full credit: any other song that is not Bingo. 2 points
- Elab error credit: Incorrect song and indicates incorrect serial position or action 3 points
- 7b. Response B Second Song**
- Elab: Correct song AND gives serial position (2nd song) 3 points
- Full credit: Row, Row, Row; Row, Row your boat; or sings it. 2 points
- Partial credit: Something about a boat 1 point
- ERROR**
- Error full credit: any other song 2 points
- Elab error credit: Incorrect song and indicates incorrect serial position or action 3 points
- 8. Perp First Sees Bike**
- Elab: Touches it and...tells where (seat, breaks) or looked at tires 3 points
- Full credit: Touches it, grabs it, wheels away,
tried to take it away, or plays with the handlebars or brakes . 2 points
- ERROR**
- Error full credit: Walked up to the bike or kicked the bike 2 points
- 9. What Were They Arguing About**
- Elab: Use of bike AND Dialogue on why she said no 3 points
- Full credit: The use of the bike or an implication of wanting to take it. 2 points
- ERROR**
- Error partial credit: incorrect dialogue 1 point
- Error full credit: She wanted the boy to sit somewhere else. 2 points
- Elab error credit: Incorrect answer and incorrect dialogue 3 points
- 10. Did The Boy Touch The Girl**
- Elab: Punched her in the left arm or with right hand 3 points
- Full credit: punched her in the arm, 2 points
- Partial credit: punched, slugged or hit her 1 point
- ERROR**
- Error full credit: hit her anywhere else other than the arm, pushed her. 2 points
- 11. Victim's Response When Boy First Tried To Take Bike**
- 11a. Response A: Struggled**
- Elab: Struggled and ...Some form of the dialogue 3 points

Full credit: Struggle, wrestle, grabbed bike away, tried to take the bike	2 points
Partial credit: Stood in front of it, pulling on bike, took it back	1 point
ERROR	
Error partial credit: incorrect dialogue	1 point
Error full credit: anything that does not include a struggle	2 points
Elab error credit: Incorrect answer and incorrect dialogue	3 points

11b. Response B: Moved Bike

Elab: Moved the bike to the ...Right side of the bench	3 points
Full credit: Moved bike to the other side of her (bench)	2 points
Partial credit: Moved Bike	1 point
ERROR	
Error partial credit: incorrect dialogue	1 point
Error full credit: anything that does not include moving the bike	2 points
Elab error credit: Incorrect answer and incorrect dialogue	3 points

12. Perp Response When She Wouldn't Let Him Use It

12a. Response A: Slit Throat

Full credit: Slit throat, by verbal response or action	2 points
ERROR	
Error full credit: Anything that does not include that specific action	2 points

12b. Response B: Took Bike

Elab: Rode off...to the right side of the screen or gives dialogue or sneaks up from behind	3 points
Full credit: Grabbed bike and rode away or stole or took bike	2 points
Partial credit: Used bike or borrowed bike or dialogue or sneaked up	1 point
ERROR	
Error partial credit: incorrect dialogue	1 point
Error full credit: Gave the bike back or other incorrect information	2 points
Elab error credit: Incorrect answer and incorrect dialogue	3 points

13. Boy Call Girl A Name

Full credit: Stupid jerk	2 points
Partial credit: stupid or jerk	1 point
ERROR	
Error partial credit: incorrect dialogue	1 point
Error full credit: Any other name	2 points
Elab error credit: Incorrect answer and incorrect dialogue	3 points

14. Victim's Reaction When The Boy Took The Bike

14a. Response A: Victim's Emotional Response

Elab: Angry and ...Gives dialogue	3 points
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Full credit: Angry, mad	2 points
Partial credit: Upset or gives dialogue	1 point
ERROR	
Error partial credit: incorrect dialogue	1 point
Error full credit: Sad or anything that does not imply anger	2 points
Elab error credit: Incorrect answer and incorrect dialogue	3 points

14b. Response B: Victim's Behavioral Response

Elab: Stomps foot and...Shakes fist or gives dialogue (DO NOT score 2x)	3 points
Full credit: Stomps foot, kicks the ground	2 points

ERROR

Error partial credit: incorrect dialogue	1 point
Error full credit: anything that does not imply a kicking motion	2 points
Elab error credit: Incorrect answer and incorrect dialogue	3 points

15. Who Came Up To The Girl

Elab: father andgives dialogue	3 points
Full credit: father, dad	2 points
Partial credit: A man	1 point

ERROR

Error partial credit: incorrect dialogue	1 point
Error full credit: Any other person than as described above	2 points
Elab error credit: Incorrect answer and incorrect dialogue	3 points

16. Father's Reaction

Elab: Hand on shoulder and gives dialogue (Do not score 2X), or they went to look for the bike	3 points
Full credit: Hand on her shoulder, around her, hand on her back	2 points
Partial credit: Comforted her or correct dialogue	1 point

ERROR

Error partial credit: Incorrect dialogue	1 point
Error full credit: Hugged her or ran after the boy	2 points
Elab error credit: Incorrect answer and incorrect dialogue	3 points

FEATURE PHYSICAL CHARACTERISTICS

****ONLY GIVE ELABORATION POINTS IF IT HELPS CODE THE ANSWERS OR IT ASSISTS THE INVESTIGATOR IN THE IDENTIFICATION OF THE PERP.**

- 17. Perp's Name**
 Full credit: Frankie, Frank 2 points
ERROR:
 Error full credit: ANY other name 2 points
- 18. Perp's Hair Color**
 Full credit: Dark Brown, Brown, Black 2 points
 Partial credit: dark 1 point
ERROR
 Error full credit: Blonde or light anything 2 points
- 19. Perp's Hair Length**
 Elab: Gives length and ...Bangs, or curled around face, wavy 3 points
 Full credit: Short, shows length to the bottom of the chin, states like mine (and it falls within the parameters) 2 points
ERROR:
 Error full credit: Any length implied that falls beneath the chin 2 points
 Elab error credit: Long and in a ponytail 3 points
- 19a. Response A Ponytail/Long**
 No points are scored for the Male Consistent interview
- 20. Victim's Name**
 Full credit: Sport, kid, didn't say the name, 2 points
 Partial credit: Correct denial of Ashley AND Frankie or Correct denial and IDK 1 point
ERROR:
 Error full credit: Ashley, Frankie, or any other name 2 points
- 21. Victim's Hair Color**
 Elab: Blonde and ...gives length, wavy, or bangs 3 points
 Full credit: Blonde, light blonde, blondish, yellow 2 points
 Partial credit: light, blondish brown or gives length 1 point
ERROR
 Error partial credit: incorrect detail 1 point
 Error full credit: Incorrect color 2 points
 Elab error credit: Incorrect color and incorrect detail 3 points
- 22. Which Child Taller**
 Elab: Boy and...specify by 6-10 inches 3 points
 Full credit: boy 2 points
ERROR
 Error full credit: girl 2 points
 Elab error credit: Incorrect gender and incorrect detail 3 points

23.	Which Child Older	
Elab: Boy and...specify age range for boy 13-15 or girl 8-10.		3 points
Full credit: boy		2 points
ERROR		
Error full credit: girl		2 points
Elab error credit: Incorrect gender and incorrect detail		3 points
24.	Father's Hair Color	
Elab: Color and...Receding hairline, mustache, short hair, glasses		3 points
Full credit: Black, Dark brown, Brown		2 points
Partial credit: Dark or any other correct feature		1 point
ERROR		
Error partial credit: Incorrect feature of dad		1 point
Error full credit: Incorrect color		2 points
Elab error credit: Incorrect color and incorrect feature		3 points

FEATURE CLOTHING

25.	Perp's Clothing	
25a. Response A	Perp's Shirt	
Elab: Black and ...with white lettering, wore jeans		3 points
Full credit: Black Shirt		2 points
Partial credit: Dark, wore jeans, or white letters on shirt		1 point
ERROR		
Error partial credit: One incorrect item		1 point
Error credit: any other color or incorrect items		2 points
Elab error credit: two or more incorrect items		3 points
25b. Response B	Perp's Shoes	
Elab: Hiking boots and...brown		3 points
Full credit: Boots, Hiking boots		2 points
Partial credit: Brown Shoes		1 point
ERROR		
Error partial credit: Incorrect color of shoes		1 point
Error credit: any other type of shoes		2 points
Elab error credit: Incorrect type and color of shoes		3 points
26.	Victim's Clothing	
26a. Response A	Victim's Pants	
Elab: Wore jeans...and white t-shirt		3 points
Full credit: Jeans, blue jeans		2 points
Partial credit: Pants or slacks or a white t-shirt		1 point

ERROR

Error partial credit: Wrong color of shirt or an incorrect item	1 point
Error full credit: Wore shorts	2 points
Elab error credit: Incorrect type of pants and an incorrect item	3 points

26b. Response B Victim's Shoes

Elab: Sneakers and...White	3 points
Full credit: Sneakers, Tennis Shoes, Tenny Runners	2 points
Partial credit: White shoes	1 point

ERROR

Error partial credit: Incorrect color	1 point
Error credit: Any other type of shoe	2 points
Elab error credit: Incorrect type and color of shoes	3 points

27. Watch

Elab: Boy's AND big AND black	3 points
Full credit: Boy's AND big OR black	2 points
Partial credit: Boy's OR big OR black	1 point

ERROR

Error partial credit: girl's, dad's or describes as small or gold	1 point
Error full credit: Girl's or dad's AND small gold watch	2 points

28. Father's Clothing

Elab: Mentions two or more correct items	3 points
Full credit: Mentions one correct item	2 points
Partial credit: White shirt	1 point

ERROR

Error full credit: One incorrect item	2 points
Elab error credit: Two or more incorrect items	3 points

29. Gender of Perp

Full credit: Boy	2 points
ERROR	
Error full credit: Girl	2 points

CORRECT FEATURES**Boy**

Frankie

Brown/ black short hair

Black shirt w/ white lettering

Jeans

Brown/black hiking boots

Big, black watch

Ring on fourth finger

Punched w/ right hand in left arm

Slit throat action

Bike

Black

Mountain bike

"Trek" on the bike

"Antelope" on the bike

Water bottle

Brakes on the handlebars

Black seat

Girl

Sport or kid

Blonde short hair

White t-shirt

Jeans

White sneakers

No watch

No jewelry

No action

No action

Father

Brown/ black hair


Receding Hairline

Brown/black boots

White blue-striped shirt

Jeans

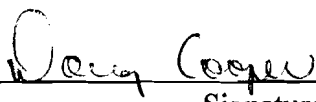
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Signature of the author

8-3-2000
Date

THE EFFECTS OF AGE, DELAY INTERVAL,
AND TYPE OF QUESTION ON FALSE MEMORY
SYNDROME IN CHILDREN

Title


Signature of Graduate
Office Staff Member

August 9, 2000
Date

[Handwritten scribble]