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Eyewitness Identification by 5- to 6-Year-Old Children

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Thirty-four 5- to 6-year-old children participated in a unique event in which children interacted with 4 individuals—2 for a long period of time and 2 for a brief period only. Each child was interviewed 1 to 2 days later with photographic lineups that contained the target individuals (target-present) or with lineups that did not (target-absent). When tested with target-present lineups, 5- to 6-year-old children were very accurate in identifying individuals with whom they had prolonged exposure, and were also accurate when asked to identify an individual who was present only briefly, but who was part of a salient aspect of the same event. In contrast, when tested with target-absent lineups, children's performance was very poor regardless of whether the to-be-identified individual had been seen briefly or for a prolonged period of time. These data have important implications for eyewitness identification by young children in clinical and legal settings.

Adults have the capacity to remember thousands of individual faces and distinguish between them regardless of their degree of physical similarity or changes in their appearance due to the passage of time (Diamond & Carey, 1977). When it comes to identifying a suspect in a crime they have witnessed, however, adults' performance drops significantly (Goodman, Hirschman, Hepps, & Rudy, 1991b; Loftus, 1979; 1993). Increasingly, children as young as three or four are becoming involved in police investigations and hence are being required to give evidence in court (Yuille & Wells, 1990). Traditionally, it has been assumed that young children are incapable of being reliable, trustworthy, and accurate witnesses; however, contemporary research has shown that, under some circumstances, children as young as 3 can provide reliable narrative accounts of past events even when interviewed after long retention intervals (Butler, Gross, & Hayne, 1995; Salmon, Bidrose, & Pipe, 1995; for reviews see Fivush & Hudson, 1990; Fivush & Shukat, 1995; Goodman & Bottoms, 1993; Pipe, 1993; Saywitz, 1990; Spencer & Flin, 1993). Researchers

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know much less about how young children perform on eyewitness identification tasks in particular. Given that adults are notoriously inaccurate when asked to identify people in eyewitness situations, what is the likelihood that children will provide accurate and reliable evidence?

Historically, the empirical study of children's recognition memory for faces has involved a laboratory-based task in which children are shown a set of photographs of faces for a short period of time and their recognition memory is subsequently assessed. In a standard multiple-choice test, children are presented with a larger set of "test" photographs that include the original set, and they are asked to identify faces they have seen before. In a standard sequential test, the child sees only one photograph at a time and is required to judge whether they have seen that face before or not (Chance & Goldstein, 1984; Cole & Loftus, 1987). Studies conducted using these paradigms have frequently shown that children's recognition memory for unfamiliar faces improves as they get older (Blaney & Winograd, 1978; Carey & Diamond, 1977; Carey, Diamond, & Woods, 1980; Diamond & Carey, 1977; Flin, 1980; 1983; Sophian & Stigler, 1981). When accuracy levels are compared across age groups ranging from preschool children to college undergraduates, the rate of correct identifications improves with age. For preschool children, for example, accuracy typically ranges from 35% to 40% but increases to between 70% and 80% for 12- to 14-year-olds and adults (for a review, see Chance & Goldstein, 1984). Correspondingly, the tendency to make false identifications decreases with age (Cole & Loftus, 1987; Flin, 1980).

Although laboratory studies make it clear that there are developmental differences in face recognition, the ecological validity of these studies may be limited. Over the last decade, some researchers have argued that the methodologies involved in face recognition studies bear little resemblance to what occurs in real-life situations where an eyewitness identification may be required (Davies, 1993; Goodman, Rudy, Bottoms, & Aman, 1990). Increasingly, children are being called upon to identify kidnappers, or sexual or physical abuse perpetrators. Clearly, these kinds of real-life eyewitness events differ dramatically from traditional laboratory studies in a number of important respects. First, the level of participation in a real eyewitness event may be fundamentally different from the level of participation in an event contrived within the laboratory. In traditional laboratory studies, for example, children are generally passive observers; in real eyewitness events such as sexual or physical abuse, they are likely to be more active (albeit unwilling) participants. Second, real crimes against children generally involve extended contact between the child and the perpetrator. Laboratory studies, however, have generally focused on children's memory for events that are brief. Third, when children are required to make identifications in clinical or legal settings, it is likely that they will not only be asked to make identifications from lineups that contain the suspect (target-present), but that they will also be asked to make identifications from lineups that are composed only of distractors (target-absent). Traditional laboratory studies of face recognition in children have typically tested children only with lineups that contain the target.

More recently, children's memory has been tested under conditions that closely match some aspects of real-life events (for reviews see Fivush & Hudson,

1990; Goodman, Bottoms, Schwartz-Kenney, & Rudy, 1991a; Pipe, 1993; Saywitz, 1990; Spencer & Flin, 1993; Zaragoza, Graham, Hall, Hirschman, & Ben-Porath, 1995). Several studies, for example, have shown that children's narrative accounts improve when they participate in an incident rather than merely observe it. Baker-Ward, Hess, and Flannagan (1990) compared first- and fourth-grader's spontaneous recall for activities they either performed or simply observed. Children of both ages recalled significantly more information about the self-performed activities than about the activities performed by others. Tobey and Goodman (1992) also found that participation increased the amount of information 4-year-old children reported in response to direct questions about an event. Although Rudy and Goodman (1991) found no relation between participation and the accuracy of children's spontaneous recall, participation did lower young children's susceptibility to suggestive questioning. Baker-Ward et al. have argued that participation increases encoding of an event. Consistent with this, Tobey and Goodman have also argued that participation may increase attention, which, in turn, will lead to more active processing of the event during initial encoding.

While there is some indication that participation aids memory retrieval in general, there is a paucity of research examining the effect of participation on recognition memory in particular. Although no single study has assessed developmental changes in recognition memory in bystanders and participants, there is some suggestion that children, at least by the age of 6 or 7, can make reliable identifications if they are actual participants in an event. Goodman and Reed (1986), for example, recruited 3- and 6-year-old children and adults to participate in a game with a male confederate. The game involved performing a number of arm movements. When tested 4 to 5 days later, 95% of the 6-year-old children correctly identified the confederate from a photographic lineup. In fact, the performance of these children was better than that of adults tested under the same conditions (78% accurate). Goodman and Reed also found, however, that the performance of the younger children was very low (38% accurate). Taken together, these results suggest that for children over the age of 6, accuracy can be quite high when they actively participate in an event. The positive effect of participation, however, may not generalize to younger children.

Most crimes against children, such as kidnapping or sexual assault, involve a long period of contact with the assailant. Although it is reasonable to assume that a child's memory would improve as a function of the time spent in direct contact with the target individual (Davies, Tarrant, & Flin, 1989), few studies have addressed the effect of exposure duration on the accuracy of children's eyewitness identifications. In the Goodman and Reed (1986) study described above, for example, the authors hypothesized that the low accuracy rate displayed by the younger children in their study may have been a function of the time the children spent looking directly at the confederate. Using videotape recordings of the target event, Goodman and Reed scored the length of time each subject spent looking at the confederate. Three-year-old children spent significantly less time looking directly at the confederate than did either of the two remaining age groups (6-year-olds and adults). Goodman and Reed proposed that this age-related change in attention may have contributed to the low rates of accuracy displayed by the younger children.

Leippe, Romanczyk, and Manion (1991) provided additional evidence that exposure duration influences identification accuracy. In this study, the authors compared children's identification accuracy for two individuals—one experimenter who was in direct contact with the subjects for a significant period of time, and another experimenter who spent only a brief time with the subjects. Leippe et al. staged an event in which children, ages 5 to 6 and 9 to 10 years old, and adults participated in a touching activity with a male experimenter for approximately 6 minutes. During this exercise, another adult (female) briefly interrupted the experimenter. She was present for about 9 seconds. Subjects' recognition accuracy was tested after a brief retention interval (30 minutes) using lineups for both the experimenter and the intruder. All subjects, regardless of age, were significantly more accurate when asked to identify the experimenter than when asked to identify the intruder. That is, the individual who was present for a long period of time was identified more often than the individual who was present only briefly.

In legal contexts, children are often required to make identifications from both target-present and target-absent lineups. The majority of studies on eyewitness identification, however, have only examined developmental differences in recognition memory for memory events using lineups where the target was always present. When tested with target-present lineups, children over the age of 5 perform as well as adults (Goodman & Reed, 1986; Marin, Holmes, Guth, & Kovac, 1979; Parker, Haverfield, & Baker-Thomas, 1986). When performance on target-absent lineups is examined, a somewhat conflicting developmental picture emerges. On one hand, some researchers have shown that children's performance on target-absent lineups is alarmingly low (Parker & Carranza, 1989; Peters, 1991; Yarmey, 1988). Davies, Stevenson-Robb, and Flin (1988), for example, found that only 12% of the 7 to 8 year olds and 44% of the 11 to 12 year olds were correct when tested with a target-absent lineup. Additionally, Beal, Schmitt, and Dekle (1995) tested 5-year-old children with a target-absent lineup immediately following a staged event (slide presentation). Only 1 child (6%) correctly rejected the lineup; 15 children (94%) incorrectly identified a foil. Even when the 5 year olds were tested with a target-absent lineup that contained a "Not Here" selection option, 50% of the children made a false identification. On the other hand, some researchers have found children's performance on target-absent lineups to be somewhat better (Davies et al., 1989; Jones & Krugman, 1986; Leippe et al., 1991). Goodman et al. (1991a), for example, found that children's performance on target-absent lineups could be improved if they received prior training with both target-present and target-absent lineups.

The present experiment was designed to examine eyewitness identification by 5- to 6-year-old children. All subjects participated in a unique event in which they encountered four individuals. Two of the individuals were present for a long period of time and two were present only briefly. Children were interviewed about the event 1 to 2 days later. The purpose of the experiment was twofold: First, we compared children's accuracy when they were tested with photographic lineups that contained (target present) or did not contain (target absent) the target individual. Second, we compared children's accuracy on both lineups as a function of the target's duration of exposure during the event.

METHOD

Subjects

Thirty-four children, 17 male and 17 female (*M* age = 65 months, *SD* = 3.2, Range = 60–72), were recruited from a local primary school in Dunedin, New Zealand. The children were predominantly Pakeha (New Zealanders of European descent) and came from middle-class socioeconomic backgrounds. This research project received ethical approval from the University of Otago Human Ethics Committee and all children had parental consent to participate.

Memory Event

A female confederate, dressed in a fire-fighting uniform, came to the children's classroom and invited them to visit the fire station. The children traveled with her by bus to the fire station, where they were greeted by a male confederate, who was also dressed in a fire-fighting uniform. He showed the children around the station and explained the kinds of things that firefighters did there. A third confederate interrupted the fireman at one point during the tour. This confederate, dressed as a workman, excused himself and asked if anyone had seen his toolbox. The fireman then pointed to a toolbox located on the opposite side of the room. The confederate worker crossed directly in front of the children, retrieved the toolbox, and left the room. The entire interaction between the fireman and the workman lasted approximately 30 seconds. The fireman then showed the children the firepoles. At this point, a fourth confederate, a female also dressed as a worker, slid down the pole (poleslider). The fireman reprimanded her and explained that the pole was only to be used by firefighters in emergencies. The confederate said that she was in a hurry and apologized. This interaction lasted approximately 30 seconds. The children were then shown the firefighting clothes and tried them on. Finally, the children were allowed to climb on the fire engines before returning to the bus. The entire interaction between the fireman and the children lasted approximately 1 hour. As each child got on the bus, the first confederate (the firewoman) thanked him or her for being so good at the fire station and placed a brightly colored cardboard medal around the child's neck. The children were allowed to take this medal home. The entire interaction between the firewoman and the children lasted approximately 1 hour.

Memory Interview

One to two days after the event,[3] two female experimenters who were not present during the event talked to the children about what they had done at the

[3]Approximately half of the children were interviewed 1 day after the event and half were interviewed 2 days after the event. Although we did not systematically compare their performance, unpublished data in our laboratory have shown that children interviewed after as long as one month show patterns of accuracy similar to those reported here.

fire station. To establish rapport, the experimenters spent two mornings at the school prior to the interview getting to know the children. The interviews took place in a room adjacent to the child's classroom. Each child was interviewed individually. Each interview began with the experimenter and child playing with Lego. The child was also engaged in conversation about their pets, brothers and sisters at home, and the kinds of things they had done at school that day. When the child appeared comfortable, the experimenter suggested they put the Lego away and do something else.

The interview itself was divided into three phases; during each successive phase the interviewer asked progressively more specific questions. Prior to presenting the lineups, each child was shown a medal identical to the one they had received during the event and was asked a series of general and specific questions about the target event. This portion of the interview was part of a larger study on children's memory development (Butler et al., 1995) and will not be discussed further here.

Photographic Person Lineups

Each child was tested with two target-present and two target-absent lineups. For each lineup, the child was asked to indicate which of the four photos, if any, showed a person who had been present during the memory event. For example, with the fireman lineup the experimenter said, "I heard that a fireman showed you around the firestation. Is he here?" If the child answered yes, the experimenter then asked "Can you point to him?" If the child answered no, he or she was shown the next lineup. Similar questions were asked for the remaining three lineups.

The four target-present lineups used were each composed of four 5-inch by 7-inch, color, head and shoulder, frontal-view photographs. One photograph showed the target, the other three, distractors. The position of the target face was varied so that for each of the four lineups the target was in a different position. The target-absent lineups were identical to the target-present lineups except a fourth distractor replaced the target. Distractors were chosen on the basis of their similarity to the target. The targets and the distractors were photographed with the same neutral facial expression and were wearing clothing identical to the clothing that had been worn during the event—a firefighter's uniform for the fireman and firewoman and white overalls for the workman and the poleslider.

As described before, there were four target actors who participated in the memory event, two male and two female. Two of the actors spent a long period of time interacting with the children (i.e., the fireman and firewoman were present for approximately one hour) and two were present only briefly (i.e., the poleslider and the workman were present for approximately 30 seconds). Children were tested with one target-absent and one target-present lineup of actors from each exposure condition (long or brief). That is, if a child was tested with the target-absent lineup for the fireman, he or she was always tested with the target-present lineup for the firewoman. Across all subjects, each lineup appeared first, second, third, or fourth during the interview an equal number of times and no subject was tested with two

lineups of the same type one after the other. That is, if a child received a target-present lineup first, this was always followed by a target-absent lineup.

Photographic Item Lineups

Three additional photographic lineups were also constructed. These were each composed of four 5-inch by 7-inch color, frontal-view photographs. The subject of these lineups were items that were present during the memory event. The target items included the bus the children rode on the way to the firestation, a fire engine, and a firefighter's hat. Distractor items were again chosen on the basis of their general similarity to the target item. A photographic item lineup was presented after each of the person lineups to minimize interference and boredom. All these item lineups had the target present and the identifications were, deliberately, made very easy. As predicted, children were 100% accurate on these lineups.

RESULTS

Preliminary log-linear analyses revealed that there were no significant effects associated with the interviewer or the child's gender on any measure of accuracy. Moreover, these variables did not enter into any significant interaction. Given these findings, the data were collapsed across interviewer and child's gender for subsequent analysis. Figure 1 shows the children's accuracy for each of the four actors (fireman, firewoman, poleslider, and workman) as a function of test condition (target-present or target-absent). In Fig. 1, a correct identification consisted of identifying the target in a target-present lineup or rejecting all of the targets in the

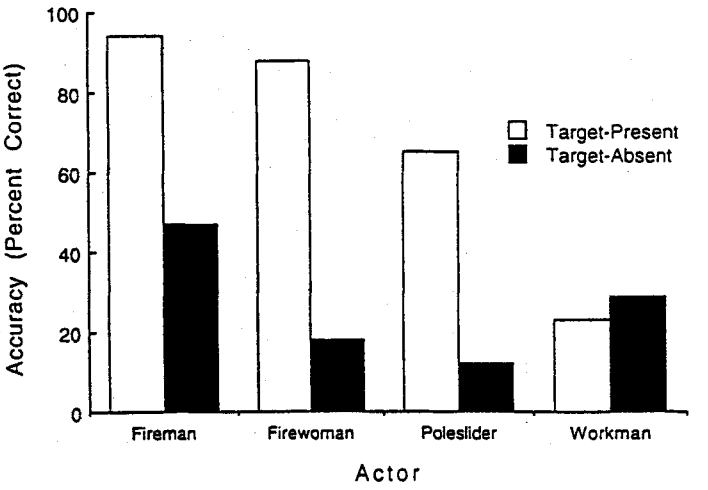

Fig. 1. The mean percentage of correct identifications of each actor as a function of test condition (target-present or target-absent).

target-absent lineup. Log-linear analyses indicated that there was a main effect of test condition, $\chi^2(1, N = 136) = 32.51, p < .0001$. Overall, subjects were more accurate when tested on target-present lineups. There was also a main effect of exposure time, $\chi^2(1, N = 136) = 16.59, p < .0001$. In general, subjects were more accurate at identifying individuals with whom they had prolonged contact. These main effects, however, were qualified by a significant test condition by exposure time interaction, $\chi^2(1, N = 136) = 5.97, p < .01$.

To evaluate the test condition by exposure time interaction, separate χ^2 analyses (Yates Correction Factor) between the two test conditions (target present and target absent) were carried out for each actor. The results of these analyses demonstrated that 5- to 6-year-old children were more accurate when tested with target-present lineups containing the fireman, $\chi^2(1, N = 34) = 6.94, p < .01$, the firewoman, $\chi^2(1, N = 34) = 13.98, p < .001$, and the poleslider, $\chi^2(1, N = 34) = 7.97, p < .005$, than they were when tested with the corresponding target-absent lineups. For the workman, however, children were equally inaccurate when tested with either type of lineup.

It is important to consider not only the effect of test condition (target present and target absent) on overall accuracy, but also whether the kinds of errors children made differed as well. Within the legal system, errors of commission (identifying an innocent person) are generally considered to have more serious consequences than errors of omission (failure to identify the perpetrator, Goodman et al., 1991a, 1991b; Parker & Carranza, 1989). With few exceptions, researchers have found that young children generally make large numbers of commission errors relative to omission errors on both target-present (Beal et al., 1995; Goodman et al., 1991b; Leippe et al., 1991) and target-absent (Beal et al., 1995; Parker & Carranza, 1989) lineups. The number and type of errors that children made in the present experiment are

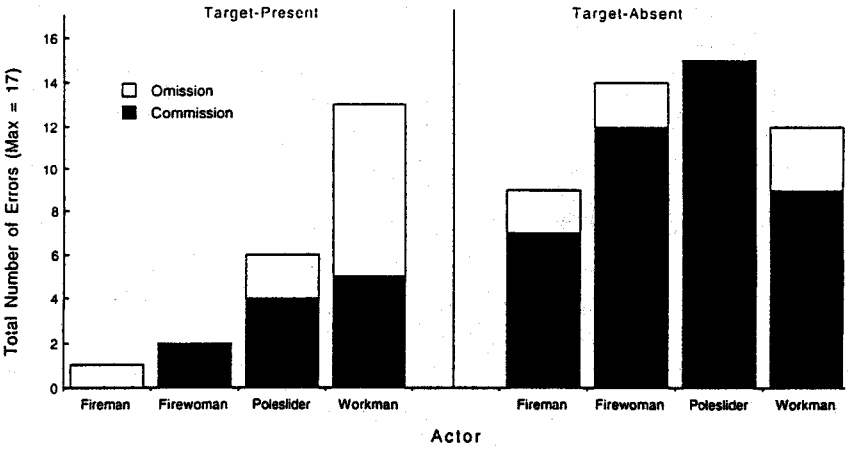

Fig. 2. The total number and type of errors committed as a function of test condition (target-present or target-absent).

shown in Fig. 2 as a function of test condition. On both lineups, children could make an error of commission by falsely identifying the wrong person. On target-present lineups, children could make an error of omission by saying that the target was not present or by answering that they did not know whether the target was present or not. On target-absent lineups, however, children could make an error of omission only by indicating that they did not know whether the target was present or not.

Separate log-linear analyses were conducted for omission and commission errors. For errors of omission, there was no main effect of test condition or exposure time. There was, however, a significant test condition by exposure time interaction, $\chi^2(1, N = 136) = 5.33, p < .02$. As shown in Fig. 2 (open bars), children made the most errors of omission when tested with target-present lineups containing the two brief-exposure actors (poleslider and workman). For errors of commission, there was a significant main effect of test condition, $\chi^2(1, N = 136) = 42.77, p < .0001$. As shown in Fig. 2 (shaded bars), children made significantly more errors of commission when tested with target-absent lineups than when tested with target-present lineups. There was also a main effect of exposure time, $\chi^2(1, N = 136) = 6.01, p < .01$. Overall, children made more errors of commission on the lineups containing the two brief-exposure actors (poleslider and workman). There was no significant interaction. In summary, the number of commission errors or false identifications increased when target-absent lineups were presented or when children were asked to identify individuals who were present only briefly. The number of omission errors, on the other hand, increased only when children were tested with target-present lineups and were asked to identify individuals who were present only briefly.

Recall that there were two ways in which children could make errors of omission. On target-present lineups, children could make errors of omission if they indicated that the target was not present or if they answered "I don't know." On target-absent lineups, children could make errors of omission only if they answered "I don't know." It has been argued that one reason children (and adults) may not perform well in some memory tests is because they would rather provide an answer that is incorrect than indicate that they do not know the answer (Ceci & Bruck, 1993; Dent & Stephenson, 1979). In the present experiment, "don't know" responses accounted for only 17% of the total number of errors that children committed. This finding is consistent with the argument that children are more likely to provide a false response than to admit that they may not know. The reluctance of children to say "I don't know" may also contribute to the extremely high commission error rate exhibited by children in the target-absent condition.

In summary, the results of the present experiment indicate that when tested with target-present lineups, 5- to 6-year-old children were very accurate in identifying individuals they had prolonged exposure to (see Fig. 1, fireman and firewoman). In addition, children were also highly accurate when asked to identify an individual who was present only briefly, but who was part of a salient aspect of the event (see Fig. 1, poleslider). In contrast, when tested with target-absent lineups, children's performance was very poor regardless of whether the to-be-identified individual had been seen briefly or for a prolonged period of time. Furthermore, not

only were more total errors committed when children were tested with target-absent lineups, the numbers of commission errors, in particular, increased dramatically.

DISCUSSION

The results of the present experiment demonstrated that, under some conditions, children were remarkably accurate when asked to identify individuals with whom they had interacted on the previous day. The results also demonstrate, however, that under other conditions, children were remarkably inaccurate. From a practical perspective, what are the conditions that are most likely to tip the balance one way or the other?

First, increased contact with an unfamiliar individual appears to increase children's accuracy, at least when they are tested with target-present lineups. In the present experiment, children were highly accurate (88%–94%) when asked to identify the fireman and firewoman. These high rates of accuracy were achieved even though subjects had no prior contact with the target individuals and the test distractors were physically similar to the targets (i.e., same hair color and style, same clothing, and same facial expression). These findings are highly consistent with those from other laboratories where children of the same age have been tested following prolonged contact with a target (Goodman & Reed, 1986; Leippe et al., 1991). Taken together, research findings support the conclusion that children as young as 5 or 6 can make highly accurate identifications when questioned even several days later if they have had extended contact with the perpetrator. In contrast, when children were asked to identify an individual who was present only briefly, they were generally less accurate. This finding is also consistent with past research on eyewitness identification by both children (King & Yuille, 1987; Leippe et al., 1991; Marin et al., 1979; Parker et al., 1986) and adults (Goodman et al., 1991b; Loftus, 1979; Spencer & Flin, 1993). In the present study, however, there was one exception to the overall finding that children performed poorly when asked to identify an individual who was present only briefly. When tested on the target-present lineup containing the poleslider, 65% of the children correctly identified this individual. From the children's perspective, the poleslider played a significant role in the memory event. This actor slid down the fire pole and was sternly reprimanded by the fireman in front of the children. A hushed silence fell over the fire station. Not only was this aspect of the event salient at the time it occurred (indicated by the children's reaction at the time), when interviewed as long as 1 month later, children provided highly detailed narrative accounts of both the poleslider's behavior and the fireman's response (Butler et al., 1995). In contrast, not one child spontaneously reported any information about the workman. Taken together, our findings suggest that children's performance cannot be predicted solely on the basis of exposure duration; instead, variables that increase the salience of the initial event, such as high emotional content, will also influence accuracy (Goodman, Aman, & Hirschman, 1987).

Second, the results of the present experiment indicated that high levels of accuracy may be limited to target-present lineups only. The present experiment

demonstrated that 5- to 6-year-old children were highly inaccurate on the target-absent trials (12%–47%). This result is consistent with several other studies that have compared children's performance on target-present and target-absent lineups (Beal et al., 1995; Davies et al., 1988; King & Yuille, 1987; Parker & Carranza, 1989; Peters, 1990; Shapiro & Penrod, 1986). Interestingly, accuracy on target-absent lineups did not differ as a function of exposure duration. That is, there was no difference in the number of correct identifications children made of the actors with whom they had prolonged contact and the actors with whom they had only brief contact when they were tested in the target-absent condition. Given that children were generally accurate when tested with target-present lineups, why were they so inaccurate when tested in the target-absent condition? There are several possible answers to this question. First, different memory processes may be required to make an identification from a target-present versus a target-absent lineup. When a child is tested with a target-present lineup, for example, all that he or she needs to do is recognize whether anyone of the lineup members is familiar. This task is a classic example of recognition memory. That is, the appropriate retrieval cues are physically present, the child need only map those cues to a representation of the target individual. On target-absent lineups, on the other hand, the target is not present and therefore must first be recalled from memory before an identification can be made. The number of potential retrieval cues present in this test situation, therefore, is minimal. Although recall memory is generally thought to develop later than recognition memory, and to be more complex (Kail, 1990), the equally low performance of adult subjects on target-absent trials suggests that children's performance on target-absent trials in the present experiments is more a reflection of the overall difficulty of the task rather than of their immature memory-processing capabilities per se (Loftus, 1979; Malpass & Devine, 1981).

A second explanation for children's poor performance on target-absent trials is that when children are questioned, they generally attempt to provide answers they think will please the interviewer (Ceci & Bruck, 1993) and will attempt to answer adults' questions no matter how bizarre they may be. When Hughes and Grieve (1983) asked 5- and 7-year-old children questions such as "Is red wider than yellow?" both age groups invariably provided some sort of answer. In the case of lineup identifications, the mere presentation of a lineup by an adult may create an implicit demand for the child to pick someone even if the target is not present (Beal et al., 1995; Davies, 1993; King & Yuille, 1987; Parker & Carranza, 1989; Raskin & Yuille, 1989; Spencer & Flin, 1993). King and Yuille (1987) found that even when 8- to 11-year-old children were explicitly warned that the target person may not be present in the lineup, the number of false identifications remained high on target-absent trials (74%). In the present study, we attempted to decrease children's tendencies to guess by asking two questions for each lineup. Children were first asked whether or not the target individual was present. Only after the child responded in the affirmative was he or she asked to point to someone. In spite of this manipulation, however, performance remained low on the target-absent trials. In fact, children were much more likely to guess than to say "I don't know." It is possible, therefore, that children's poor performances on target-absent trials are not always a reflection of a memory deficit, but rather may reflect the child's in-

creased attempt to comply with what he or she perceives to be the social demands of the task (Spencer & Flin, 1993).

A third explanation for children's performance on target-absent trials may involve the way in which the lineup itself was presented. There are two ways in which lineups can be presented. Simultaneous presentation, used in the present experiment, involves the presentation of all lineup members at the same time followed by one witness decision. Sequential presentation, on the other hand, involves the presentation of one lineup member at a time with a witness decision being made after each member (Parker & Ryan, 1993). Lindsay and Wells (1985) have argued that when all the lineup members are presented simultaneously, subjects make a relative judgment, choosing the member who looks most like the target, relative to the other members. When the lineup members are presented one at a time, however, subjects must compare each member to their recollection of the target and make an absolute judgment. There is growing evidence to suggest that guessing behavior by children (and adults) on target-absent lineups is increased if the mode of presentation of the lineup is simultaneous as opposed to sequential (Cutler & Penrod, 1988; Lindsay & Wells, 1985; Loftus, 1993; Parker & Ryan, 1993; Wells, 1993; cf. Leippe et al., 1991; but see Beal et al., 1995).

It is important to note that children may not always perform poorly when tested with target-absent lineups (Davies et al., 1989; Leippe et al., 1991). A real-life case, described by Jones and Krugman (1986), for example, clearly demonstrates that accuracy on target-absent lineups may not be a simple function of age, exposure duration, or task demands. A 3-year-old child, "Susie," was abducted, sexually assaulted, and subsequently abandoned in a cesspit. Five days after the abduction, she was interviewed by police and was able to make an identification from a target-present lineup. Nine days later, she was presented with an array of photographs from which the suspect's photo was missing. The authors stated that Susie "studied the photos in matter-of-fact fashion, then firmly stated he was not among the photographs" (p. 254). The suspect's photograph was then reintroduced to the lineup and when Susie encountered it, she appeared shocked and frightened. Finally, with all the photos spread out on the table the interviewer pretended to have lost the photo of the suspect. Susie was reported to have looked exasperated, picking out the photo and holding it up in front of the interviewer. The suspect that Susie had repeatedly identified later confessed to the crime. This case description demonstrates that, under some conditions, young children can make accurate identifications even on lineups where the target is not present. Future research is required to assess the conditions under which this is most likely to occur.

Within the legal profession, errors of commission are generally considered to be more harmful than errors of omission. Making an error of commission not only incriminates an innocent person, it may also allow a guilty person to go free (Malpass & Devine, 1981). The results of the present study yield a clear pattern of erroneous responding. That is, 5- to 6-year-old children made a greater number of commission errors than omission errors on both lineups and a dangerously high number of commission errors on target-absent lineups in particular. This finding is consistent with several other studies that have compared errors made on target-

present and target-absent trials (Beal et al., 1995; Davies et al., 1988; Goodman et al., 1991b; Parker & Carranza, 1989; Parker & Ryan, 1993; Peters, 1991).

In summary, what are the implications of the present findings for children's eyewitness identification? The results of the present study indicate that the probability of making a correct identification is increased when witnessing conditions are prolonged or when children are tested using target-present lineups. Correspondingly, there is a greater risk of false identification when the witnessing conditions are brief or children are tested using target-absent lineups. Future research, therefore, needs to investigate ways to assist young children in making greater numbers of correct identifications under circumstances in which they have been shown to have some difficulty. Although the present study approximated several of the conditions that children are likely to encounter in real eyewitness situations, we acknowledge that other conditions were not simulated. First, in the present study, children interacted with individuals who were otherwise unfamiliar to them; we might expect that familiarity would have an impact on children's identification, particularly under brief-exposure conditions. Second, the present memory event was designed to be entertaining for young children. As such, it did not simulate the fear or stress that would be present under real-life conditions. Finally, during our interview, there were no consequences associated with false identifications (i.e., no one went to jail or lost their job). We do not know whether or not children's responses would be different if they understood the potential impact of their choice. These questions remain to be answered.

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