

Repeated Interviews and Children's Memory

It's More Than Just How Many

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ABSTRACT—*A crucial issue in the study of eyewitness memory concerns effects of repeated interviews on children's memory accuracy. There is growing belief that exposure to repeated interviews causes increased errors. In some situations, it may. Yet, several studies reveal increased accuracy with repeated interviewing, even when the interviews include misleading questions. We review repeated-interview research in relation to event veracity, interviewer bias, and delay. We conclude that when and how children are interviewed is at least as important for their accuracy as is how many times they are interviewed.*

KEYWORDS—*children; eyewitness testimony; interviewer bias; repeated interviews; delay; suggestibility*

Few areas of developmental psychology enjoy the dramatic, persistent influence on theory, policy, and practice as does the study of children's eyewitness memory and suggestibility. Research on child witnesses has advanced theories concerning cognitive and sociocontextual effects on reconstructive memory, trauma memory, and false memory. Research has also been cited prominently in legal cases, led to new forensic interview protocols, and contributed to fundamental changes in societal perceptions of child victims and witnesses. Despite the highly influential nature of the research, some findings remain contradictory, preventing definitive theoretical and applied conclusions. One set of conflicting findings concerns the effects of repeated interviews on children's memory, suggestibility, and false-event reports.

Consider, for example, seminal studies conducted by Ceci and colleagues cited prominently as evidence for harmful effects of repeated interviews. In the studies, 3- to 6-year-olds were interviewed repeatedly about true and false events (e.g., Bruck,

Ceci, & Hembrooke, 2002; Ceci, Huffman, Smith, & Loftus, 1994; Ceci, Loftus, Leichtman, & Bruck, 1994). An experimenter described the true and false events, saying the children had experienced all of them, and told the children one or more of the following: that the children should make a picture in their heads about what happened, that their parents (or friends) said the events had occurred, or that they should pretend and tell the experimenter what would have happened if the events had occurred. Next, the experimenter asked children whether the events had been experienced, with this procedure repeated over multiple interviews. Across studies, just under a third to well over half of the preschoolers assented to one or more false events. In some studies, children's false assents increased significantly across interviews (Ceci, Loftus, et al., 1994). In others, a high percentage of children provided false reports within the first two to three sessions (e.g., Bruck et al., 2002). Such findings helped lead to the conclusion that repeated interviews are an important source of inaccuracies in children's reports, a conclusion reflected in academic and lay circles, the popular media, and even a recent U.S. Supreme Court decision (*Kennedy v. Louisiana*, 2008). Brainerd and Reyna (2005) note that, "repeated interviewing encourages reconstructive remembering of events that cannot be clearly recollected, which . . . is a source of false memory reports" (p. 304). Also, Trudeau (1997), in describing Ceci, Huffman, et al.'s (1994) study in the media, cites Ceci as stating,

We bring 'em back a fourth, a fifth, an eighth, a 10th, a 12th week, each time just asking the same question. Think real hard, did this ever happen? . . . By the 10th, 11th week, the majority of 3- and 4-year-olds will claim that getting their hand caught in a mouse trap really happened.

Despite the lack of significant increases in children's false reports in that study, such depictions promote the view that repeated interviews themselves cause errors.

Yet, in other studies, no adverse effects of repeated interviews were detected (Baker-Ward, Gordon, Ornstein, Larus, & Clubb, 1993; Goodman, Bottoms, Schwartz-Kenney, & Rudy, 1991;

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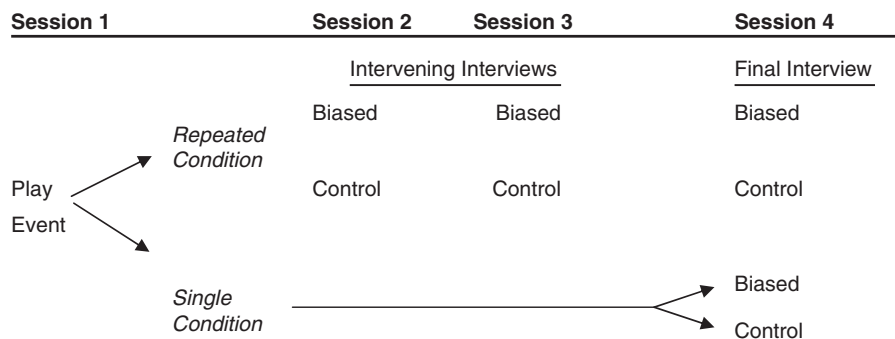


Fig. 1. A flow chart of the Quas et al. (2007) study design. All children experienced the same initial play event, which involved playing alone. Children were then exposed either to three interviews each separated by 1 week or to one interview following a 3-week delay. Interviews were conducted by either a biased interviewer who implied children played with a man or by a control interviewer.

Peterson, Parsons, & Dean, 2004). In these studies, after experiencing an event, some children were interviewed repeatedly (e.g., at 2- and 4-week delays) and others only once (e.g., at a single 4-week delay), with equivalent delays between the initial event and final interview (Fig. 1 provides an example). Children exposed to repeated interviews were not more prone to error. In fact, performance often *improved* across repeated interviews, as indexed via reduced forgetting and increased resistance to misleading questions (Goodman et al., 1991). For instance, Peterson et al. (2004) reported that, for children repeatedly interviewed about traumatic injuries, misleading questions asked during an earlier interview increased children's accuracy 1 year later.

Although at face value the two sets of studies have produced what seem to be contradictory findings, important factors varied across the studies, and these may explain divergent results. Moreover, although repeated interviewing occurred in the studies, some experimental designs precluded causal inference about effects of repeated interviews per se (i.e., number of interviews was not experimentally manipulated). Systematic investigation is needed to draw definitive conclusions about precisely how repeated interviews affect children's eyewitness capabilities. Several of our studies address conditions under which repeated interviews are more likely versus less likely to lead to inaccuracies. The results not only account for some discrepancies across former studies but also allow for clearer inferences to be drawn regarding repeated interviews and children's eyewitness capabilities.

REPETITION AND TYPE OF FALSE INFORMATION

One potential difference between studies showing beneficial versus deleterious effects of repetition concerns whether the studies probed for false details of a true experience or for an entirely false event. Repeated probing of false details of true experiences could lead to enhanced memory, for example, as a result of reminder cues, retrieval practice, reminiscence, hypermnnesia, or "inoculation effects" (stabilizing the initial

representation). Repeated probing of entirely false events could lead to increased errors due to source confusion or social pressure (Brainerd & Ornstein, 1991; Howe, Brainerd, & Reyna, 1992; Johnson, 2006). To compare directly children's reports of false details versus a false event, Quas and Schaaf (2002) had 3- and 5-year-olds play in a room alone or with an adult ("Todd"). Children then completed three separate, weekly interviews. The interviews contained multiple closed-ended (including misleading) questions about the play event (e.g., "Did you color a picture in that room?") and the man ("He wore a magic cape, didn't he?").

Of primary interest was the accuracy of children's final interview free-recall narratives and answers to closed-ended (specific and misleading) questions. Regarding free recall, the proportion of correct and incorrect information children provided did not differ depending on their play experience. Further, and in contrast to studies in which children were interviewed about a false event, very few children who played alone provided any information in free recall that implied Todd had been present. In fact, children's free recall remained highly accurate across interviews, despite repeated exposure to misleading questions. Children's closed-ended question performance also points to few differences: Their accuracy on misleading questions did not differ across play-experience conditions. However, young children who played alone were less accurate when answering specific questions than were young children who played with the man: For younger preschoolers, being asked repeatedly about the entirely false event may have led to increased source confusion and subsequently more errors, at least as reflected on one measure. Thus, part of the discrepancies across former studies could be due to asking about false details of a true event versus asking about entirely false events (see also Baker-Ward et al., 1993).

That said, determining when questions ask about false details of a true event and when they ask about an entirely false event can be somewhat arbitrary. Furthermore, even when events are considered entirely false, children may be thinking of another, possibly similar event and answer interview questions accordingly. For example, when asked about the false event of going to

Disneyland, children might accurately recount their trip to the Disney Store (Schaaf, Alexander, & Goodman, 2008). Given this, and the fact that Quas and Schaaf's (2002) findings did not point to large effects based on whether children were asked about true versus false events, other factors must also be operative.

REPETITION AND INTERVIEWER BIAS

One such factor concerns the suggestive or biased nature of the interviewer's statements. Specifically, in many studies cited to support the view that repeated interviews cause errors, not only were children asked about entirely (or largely) false events, but children were also told at the start of the interviews that the false events occurred. The nature of the pre-interview instructions varied, but typically included some derivation of the following: interviewers telling children that their parents indicated the events took place, interviewers telling children at the start to imagine the events occurring, or interviewers saying that the session was just a game and/or that their friends already confirmed that the events had occurred (e.g., Bruck et al., 2002; Ceci, Loftus, et al., 1994). Such highly biased interviewer statements can lead to false reports in a single interview (e.g., Quas et al., 1999), and possibly even more so following multiple interviews. Accordingly, the biased statements, in addition to or instead of the actual interview repetition, may have led to the high false-assent rates.

We recently experimentally manipulated, within a single study, repetition and interviewer bias to determine how each affected children's false reports of having played with a man (Quas et al., 2007). In the study, preschool children came to a laboratory and played alone in a room. No man was present. They were then randomly assigned to a single or repeated interview condition and to a biased or control interviewer condition. Children in the repeated-interview condition returned for three weekly interviews, whereas children in the single-interview condition returned once for an interview following a 3-week delay (Fig. 1).

In the biased interviewer condition, the female interviewer explicitly told children that they had interacted with a man during the play event. She provided details about what children played, mentioned that some play was inappropriate, and said that children's mothers confirmed that the children had played with a man. She repeatedly reminded children of these false facts throughout the interview. In the control interviewer condition, the interviewer did not imply in her initial statements that the children had interacted with a man but instead simply reminded children to say "I don't know" if they did not know the answer. Finally, for all children, the interview(s) contained free-recall and direct questions, the latter of which included numerous misleading queries about having interacted with the man (e.g., "Why did the man get in trouble?" "Did the man give you a kiss?").

The most consistent finding was that the children questioned *once* by the biased interviewer, who basically told children that they had played with the man, performed the most poorly.

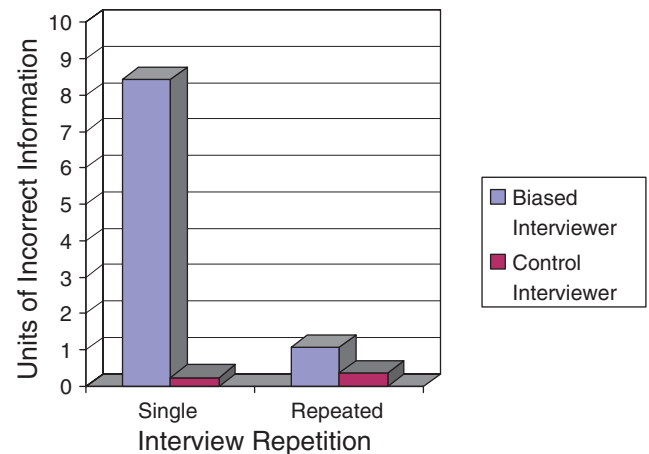


Fig. 2. Free-recall units incorrect when preschool children were interviewed a single time 3 weeks after a play event versus when they were interviewed weekly over that duration (Quas et al., 2007). The interviewer either misled them at the start of each interview (biased interviewer condition) or did not (control).

Compared to children questioned singly or repeatedly by the control interviewer and children questioned repeatedly by the biased interviewer, children questioned once by a similarly biased interviewer provided more errors in free recall, as indexed via the total amount of inaccurate information provided (Fig. 2) and via a dichotomous variable indicating whether children falsely implied having played with the man. Because free-recall responses are often considered highly accurate, children's statements about the man could have considerable consequences, for instance, by leading parents or authorities to assume that the alleged interaction took place. Thus, these data point to the powerful adverse effect that biased interview statements, rather than repeated interviews, can have on young children's accuracy.

REPETITION AND DELAY

A third reason for discrepant findings concerns effects of delay in conjunction with repeated interviews. Quas et al.'s (2007) results provide relevant insight. They also help unravel an otherwise apparent mystery: Why did children interviewed just once by the biased interviewer make the most errors? Surely, repeated misleading interviewing should have increased and not decreased inaccuracies. The answer lies partly in forgetting. Subsequent analyses compared all children's performance in their first interview (for children in the repeated-interview condition, the delay was 1 week; for children in the single-interview condition, the delay was 3 weeks), thereby eliminating the repetition component but creating a delay factor (Fig. 1). Children interviewed once by the biased interviewer after 3 weeks made substantially more errors in free recall, again in general and in falsely referencing the man, than did children interviewed once by the biased interviewer after 1 week. The latter children performed comparably to children questioned by the control interviewer, regardless of delay. Thus, when the first interview occurred relatively quickly, children

maintained accuracy over time, even in the face of a highly biased interviewer and misleading questions, perhaps because their memory was still strong enough to counter the repeated blatant misinformation (Loftus, 1979).

In another study, we also found advantages of repetition and disadvantages of delay. Goodman et al. (1991) examined effects of repeated interviews on 3- to 7-year-olds' memory for an inoculation endured for medical purposes. Children were interviewed either once after 4 weeks or twice following 2 and 4 weeks. Repeated interviews supported more accurate memory. Consistent with Quas et al.'s (2007) findings, when all children's performance at the 4-week interviews was considered, children interviewed twice were more accurate in response to specific questions than were children interviewed once. From a legal perspective, abuse-related questions (e.g., "Did she touch your bottom?") are critical. Even on such questions (including misleading ones), children interviewed twice were *more* accurate. When all children's performance in their first interview was compared, children interviewed the first time after 4 weeks made more errors to specific questions than did children interviewed the first time after 2 weeks. Thus, children interviewed repeatedly even with misleading questions were more accurate than children interviewed once after a longer delay. The latter children likely forgot more about what had happened.

SUMMARY

Together, studies directly investigating effects of repeated interviews on children's accuracy indicate that, although children's (like adults') memory is malleable under a variety of experimental manipulations, the boundaries of that malleability must be delineated. Biased statements, social pressure, questioning about false events, long delays, lack of personal significance, younger age, individual differences, and more can all affect these boundaries (Goodman, 2006). Without taking such factors into account, the simple conclusion that repeated interviews cause errors in children's reports rests on weak ground.

CONCLUSIONS

Findings from several lines of research, including our own, reveal conditions under which repetition, even when paired with biased interviewer statements and misleading questions, does not uniformly increase children's errors. Instead, when exposure to highly biased interviews or questions occurs while memory for an event is still strong, young children can show substantial resistance to misleading suggestions across multiple interviews. Also, insofar as interviews occur relatively soon after an alleged event, which happens in a sizable number of legal cases (e.g., Goodman et al., 1992), initial interviews can serve as a buffer, inoculating original event representations and reducing inaccuracies. In contrast, with delay, even a single highly biased interview can increase errors. Whether such errors would be

maintained or increased with further questioning is not yet clear but is certainly an important issue in need of direct empirical investigation. Another critical direction for research concerning repeated interviews is to identify whether children's inaccuracies reflect actual false memories (as opposed, for example, to social acquiescence).

It is crucial to emphasize that we are *not* asserting that interviewers should ask misleading questions or that repeated interviewing never has adverse effects. Under certain conditions, misinformation (including when repeatedly presented) can potentially contaminate children's reports. Additionally, individual differences (e.g., in susceptibility to social pressure) may lead some children to be adversely affected by repeated interviews and other children not—another topic in need of future research. Finally, repeated interviews can lead to emotional distress and thus may need to be avoided on this basis (e.g., Quas et al., 2005).

In closing, our claim, based on existing research, is that children's reports should not be summarily discounted just because of repeated interviewing, even if some misleading questions have been asked. Given the ubiquity of repeated interviews in forensic contexts, with the number typically spanning between two and five (Cross, Jones, Walsh, Simone, & Kolko, 2007; Goodman et al., 1992; Malloy, Lyon, & Quas, 2007), a more important question when evaluating children's eyewitness accuracy may be how and when children were interviewed rather than simply how many times.

Recommended Reading

- Bruck, M., Ceci, S.J., & Principe, G. (2006). The child and the law. In K.A. Reninger & R. Lerner (Eds.), *Handbook of child psychology* (Vol. 4, 6th ed, pp. 776–816). New York: Wiley. A review of literature concerning children's suggestibility and false memory and the implications of memory errors for children's participation in legal contexts.
- Goodman, G.S. (2006). (See References). An overview, along with a commentary, about research and legal cases in the study of children's eyewitness testimony.
- Lamb, M.E., Hershkowitz, I., Orbach, Y., & Esplin, P.W. (2008). *Tell me what happened: Structured investigative interviews of child victims and witnesses*. Chichester, UK: John Wiley & Sons. A summary of literature concerning children's eyewitness accuracy, offering concrete suggestions regarding interview strategies that should decrease errors in children's accounts.
- Lyon, T. (2002). Applying suggestibility research to the real world: The case of repeated questions. *Law and Contemporary Problems*, 65, 97–126. A review of empirical evidence and theoretical debate regarding whether repeated questions actually lead to increased inaccuracies in children's eyewitness accounts.
- Quas, J.A., Malloy, L., Melinder, A.M., D'Mello, M., Goodman, G.S., & Schaaf, J. (2007). (See References). An empirical investigation in which repeated interviews and interviewer bias were systematically manipulated to determine their independent and combined effects on children's memory and suggestibility.
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REFERENCES

- Baker-Ward, L., Gordon, B.N., Ornstein, P.A., Larus, D.M., & Clubb, P.A. (1993). Young children's long-term retention of a pediatric examination. *Child Development*, 64, 1519–1533.
- Brainerd, C.J., & Ornstein, P.A. (1991). Children's memory for witnessed events: The developmental backdrop. In J. Doris (Ed.), *The suggestibility of children's recollections* (pp. 10–20). Washington, DC: American Psychological Association.
- Brainerd, C.J., & Reyna, V.F. (2005). *The science of false memory*. Oxford, UK: Oxford University Press.
- Bruck, M., Ceci, S.J., & Hembrooke, H. (2002). The nature of children's true and false narratives. *Developmental Review*, 22, 520–554.
- Ceci, S.J., Huffman, M.L.C., Smith, E., & Loftus, E.F. (1994). Repeatedly thinking about a non-event: Source misattributions among preschoolers. *Consciousness & Cognition*, 3, 388–407.
- Ceci, S.J., Loftus, E.F., Leichtman, M., & Bruck, M. (1994). The role of source misattributions in the creation of false beliefs among preschoolers. *International Journal of Clinical and Experimental Hypnosis*, 62, 304–320.
- Cross, T.P., Jones, L.M., Walsh, W.A., Simone, M., & Kolko, D. (2007). Child forensic interviewing in Child Advocacy Centers: Empirical data on a practical model. *Child Abuse & Neglect*, 31, 1031–1052.
- Goodman, G.S. (2006). Children's eyewitness memory: A modern history and contemporary commentary. *Journal of Social Issues*, 62, 811–832.
- Goodman, G.S., Bottoms, B.L., Schwartz-Kenney, B., & Rudy, L. (1991). Children's memory for a stressful event: Improving children's reports. *Journal of Narrative and Life History*, 1, 69–99.
- Goodman, G.S., Taub, E.P., Jones, D.P.H., England, P., Port, L.K., Rudy, L., & Prado, L. (1992). Testifying in criminal court: Emotional effects on child sexual assault victims. *Monographs of the Society for Research in Child Development*, 57 (No. 5).
- Howe, M.L., Brainerd, C.J., & Reyna, V.F. (Eds.). (1992). *Development of long-term retention*. New York: Springer-Verlag.
- Johnson, M.K. (2006). Memory and reality. *American Psychologist*, 61, 760–771.
- Kennedy v. Louisiana*, _ U.S. _, 128 S. Ct. 2641, 171 L. Ed. 2d 525 (2008).
- Loftus, E.F. (1979). *Eyewitness testimony*. Cambridge, MA: Harvard University Press.
- Malloy, L., Lyon, T.D., & Quas, J.A. (2007). Filial dependency and recantation of child sexual abuse allegations. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46, 162–170.
- Peterson, C., Parsons, T., & Dean, M. (2004). Providing misleading and reinstatement information a year after it happened: Effects on long-term memory. *Memory*, 12, 1–13.
- Quas, J., Goodman, G.S., Bidrose, S., Pipe, M-E., Craw, S., & Ablin, D. (1999). Emotion and memory: Children's remembering, forgetting, and suggestibility. *Journal of Experimental Child Psychology*, 72, 235–270.
- Quas, J.A., Goodman, G.S., Ghetti, S., Redlich, A., Edelstein, R., Alexander, K., et al. (2005). Childhood sexual assault victims: Long-term outcomes of testifying in criminal court. *Monographs of the Society for Research in Child Development*, 70(2, Serial No. 280).
- Quas, J.A., Malloy, L., Melinder, A.M., D'Mello, M., Goodman, G.S., & Schaaf, J. (2007). Developmental differences in the effects of repeated interviews and interviewer bias on young children's event memory and false reports. *Developmental Psychology*, 43, 823–837.
- Quas, J.A., & Schaaf, J. (2002). Children's memories of experienced and nonexperienced events following repeated interviews. *Journal of Experimental Child Psychology*, 83, 304–338.
- Schaaf, J., Alexander, K.W., & Goodman, G.S. (2008). Children's false memory and true disclosure in the face of repeated questions. *Journal of Experimental Child Psychology*, 100, 157–185.
- Trudeau, M. (1997, June 26). Children's memories. *Morning Edition*. Retrieved November 11, 2008, from <http://www.npr.org/templates/story/story.php?storyId=1028938>

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