

Effects of Age and Delay on the Amount of Information Provided by Alleged Sex Abuse Victims in Investigative Interviews

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A total of 145 children of 4 to 5, 6 to 7, 8 to 9, and 10 to 12 years of age were interviewed within 3 days, 1 month, 1 to 3 months, or 5 to 14 months after allegedly experiencing a single incident of sexual abuse. The proportion of substantive investigative utterances eliciting new details from the children increased with age and decreased after delays of more than 1 month. Age (but not delay) was also associated with the length and richness of informative responses to individual investigative utterances of all types. Children were more likely to provide new details in response to option-posing and suggestive prompts. As in previous field studies, interviewers employed few open-ended prompts, and thus only 5% of the information obtained was elicited using free-recall prompts.

INTRODUCTION

As awareness of child sexual abuse increased in the 1980s, many researchers began to focus on the quality and quantity of information that could be obtained from alleged victims, who are often the only available sources of information. Although considerable controversy persists concerning the special suggestibility of young children (compare Ceci & Bruck, 1995, with Lyon, 1999, for example), researchers have shown that children can be reliable informants about their experiences, particularly when interviewed effectively as soon as possible after the alleged incidents (Lamb, Sternberg, Orbach, Hershkowitz, & Esplin, 1999). Younger children are typically less informative than older children and there is some evidence that forgetting proceeds more rapidly in younger children (Schneider & Bjorklund, 1998). For obvious reasons, however, most of the relevant research has been conducted in experimental and laboratory analog studies. The purpose of the present study was to examine the dynamics and informativeness of forensic interviews conducted after varying delays with children of diverse ages.

Researchers have long agreed that the amount of information recalled by children increases steadily with age (see reviews by Brown, Bransford, Ferrara, & Campione, 1983, and Schneider & Bjorklund, 1998) and that children are more likely than adults to make errors of omission rather than errors of commission (Cole & Loftus, 1987; Goodman & Reed, 1986). Although many studies of remembering and forgetting involve items or lists of items rather than autobiographical memories (Brainerd & Reyna, 1995; Howe, Brainerd, & Reyna, 1992), reviews of studies concerned with memories of witnessed or experienced events paint a consistent picture regarding the correlation between age and the amount of information recalled correctly

(Brown et al., 1983; Schneider & Bjorklund, 1998). Age differences were smaller when children were interviewed 6 weeks rather than 1 week after the final event in a study by Powell and Thomson (1996), however, and age differences in the amount of information recalled were not evident in a study of 2- to 13-year-olds who had experienced traumatic injuries (Peterson, 1996; Peterson & Bell, 1996).

Children also recall less information as the delay between the to-be-remembered (TBR) event and the interview increases (Gordon, Ornstein, Clubb, Nida, & Baker-Ward, 1991; Salmon & Pipe, 2000). The effects of delay are not completely consistent across ages and circumstances, however: Younger children appear to forget more rapidly than older children do (Baker-Ward, Gordon, Ornstein, Larus, & Clubb, 1993; Ornstein, Gordon, & Larus, 1992) and after longer delays, the accuracy of the information recalled is also adversely affected (Poole & White, 1993). In addition, perhaps because such experiences are more salient, recollections of stressful events are not affected by delays of up to 6 weeks (Merrit, Ornstein, & Spicker, 1994).

In general, then, there is consistent evidence that younger children tend to remember and recount less information than older children and that they tend to forget information faster as well. Other researchers have focused not on the total amount of information children recall but on the amount of information elicited from children by using different types of prompts. These researchers have consistently noted that open-ended questions yield more details and more accurate information than focused questions do in the laboratory, although these free recall accounts are often

incomplete (Dent, 1982; Dent & Stephenson, 1979; Goodman & Aman, 1990; Goodman, Bottoms, Schwartz-Kenney, & Rudy, 1991; Ornstein et al., 1992). In forensic contexts, open-ended prompts (invitations) likewise yield responses that are three to four times longer and three times richer in relevant details than responses to focused interviewer utterances (e.g., Lamb, Hershkowitz, Sternberg, Boat, & Everson, 1996; Lamb, Hershkowitz, Sternberg, Esplin, et al., 1996; Sternberg et al., 1996), regardless of the age of the children being interviewed.

Motivated by findings such as these, a number of professional groups and experts have recommended that interviewers should attempt to obtain as much information as possible by using open-ended prompts to elicit information; only after such prompts have apparently exhausted the child's memory are investigators supposed to use more focused questions to elicit further forensically important information (American Professional Society on the Abuse of Children [APSAC], 1990, 1997; Bull, 1992, 1996; Jones, 1992; Lamb, Sternberg, & Esplin, 1998; *Memorandum of Good Practice*, 1992; Poole & Lamb, 1998; Raskin & Esplin, 1991; Yuille, Hunter, Joffe, & Zaparniuk, 1993).

Despite these consistent recommendations, field studies of forensic interviews demonstrate that focused utterances are much more common than open-ended questions are (Craig, Scheibe, Kircher, Raskin, & Dodd, 1999; Davies, Westcott, & Horan, 2000; Lamb, Hershkowitz, Sternberg, Boat, et al., 1996; Lamb, Hershkowitz, Sternberg, Esplin, et al., 1996; Sternberg et al., 1996; Sternberg, Lamb, Esplin, & Baradaran, 1999; Stockdale, 1996; Walker & Hunt, 1998; Warren, Woodall, Hunt, & Perry, 1996). In the field sites studied, for example, more than 80% of the interviewer utterances were focused, whereas only 6% were invitations, even though individual focused questions yielded 2½ to 8 times less information from children than individual invitations did. Research in the United States, the United Kingdom, Sweden, and Israel shows that the overreliance on focused questions is evident regardless of the children's age, the nature of the offenses, the professional background of the interviewers, or the use of props and tools like anatomical dolls. Meanwhile, other researchers have documented that training—even intensive training—affects the interviewers' knowledge but not their actual questioning strategy (Aldridge & Cameron, 1999; Stevenson, Leung, & Cheung, 1992; Warren et al., 1999). Recent studies involving structured interview protocols that guide interviewers through forensic interviews of children under 7 years of age have shown dramatic increase in the proportion of utterances that are open-ended, however (Orbach et al., in press; Sternberg, Lamb, Es-

plin, Orbach, & Hershkowitz, in press). In these studies, at least half of the information was elicited by using open-ended prompts. Although less information was elicited from younger (preschool-aged) than from older children by using open-ended questions (58% versus 50%), these findings illustrate that open-ended questions can be useful even when young children are being interviewed. Nevertheless, the effects of age and delay on children's responses to various investigative prompts remain largely unexplored.

Because it is important to understand how age and delay affect interviewer questioning style and the richness of children's responses in forensic settings, we sought a potential data set large enough to examine the effects of these two factors. Researchers working in applied or field contexts have been constrained hitherto by the small numbers of young children interviewed and by the lack of information about the delays between interviews and the TBR events. In the present study, by contrast, we were able to select cases from among thousands of video-recorded investigative interviews conducted at a single center over an 8-year period. This enabled us to examine (1) the effects of age and delay on the amount of information provided by alleged victims in response to different types of interviewer utterances, (2) the dynamics of the investigative interviews, and (3) children's responsiveness to different types of utterances. Informed by the experimental literature reviewed above, we predicted that both age and delay would systematically affect informativeness, with younger children providing less information than older children, and with less information provided the greater the delay. The effects were expected to be modest, however, because the relative salience of the TBR events (sexual abuse) should have facilitated encoding and impeded forgetting. Because less information was retained in the children's memories, we also expected that investigators would "push harder" to elicit information from younger children and children interviewed after longer delays—that they would rely more heavily on focused questions rather than invitations. On the basis of previous field and laboratory research, finally, we expected that open-ended questions would elicit more information than focused questions, regardless of age.

METHOD

Participants

The data were obtained from videotaped interviews conducted between 1986 and 1994 by trained forensic investigators at a large facility in the South-

western United States. This center began routine video taping of forensic interviews in 1986, and the majority of the interviews we studied were conducted between 1986 and 1991, with 14, 3, and 5 in 1992, 1993, and 1994, respectively. For purposes of this study, we selected interviews of 4- to 12-year-old children who had not been interviewed previously about this or any other abusive incident and who were believed (on the basis of their accounts and those of collateral witnesses and material information) to have been sexually abused on only one occasion. We sought interviews of 48 children in each of 4 age groups (4 to 5, 6 to 7, 8 to 9, and 10 to 12 years) with 12 children at each age having been interviewed within 72 hr, 1 month, 1 to 3 months, or between 5 and 14 months of the alleged incident. Cases were excluded when the videotape was missing or too poor to be transcribed, when it was unclear whether the child had been abused only once, and when doubt about the timing of the alleged incident made it impossible to estimate the length of delay, which was determined on the basis of the children's reports and those of collateral witnesses and other investigative materials. The final sample included 145 rather than 192 interviews because there were too few cases that fit the criteria in many of the age-by-delay cells, despite the thousands of cases considered for inclusion (see Table 1 for a complete account of the number of children in each of the cells). The final sample included 16 boys and 129 girls, interviewed by one of at least 25 different social workers who each interviewed between 1 and 16 of the children. Eight interviewers interviewed only 1 child, two interviewed 2, four interviewed 4, two interviewed 6, two interviewed 8, one interviewed 10, one interviewed 11, three interviewed 12, one interviewed 14, and one interviewed 16. Two interviewers were not identified. The children interviewed reported a variety of abusive experiences, including exposure ($n = 4$), touching over ($n = 17$)

and under clothing ($n = 80$), and oral, genital, or anal penetration ($n = 44$).

Procedure

After the cases had been selected, the videotapes were transcribed and the transcripts were checked for accuracy by another researcher, who also ensured that nonverbal signals (e.g., gestures, head nods or shakes, demonstrations using dolls) were fully described on the transcript and that all information that might have identified the children, interviewers, or alleged perpetrators was removed before the transcripts were coded.

One of three trained raters reviewed each of the transcripts and categorized each utterance made by the interviewer during the substantive portion of the interview, operationally defined as the portion of the interview during which the incidents under investigation were discussed. The 13 categories differentiated by the coders were the same as those coded by Lamb and his colleagues (Lamb, Hershkowitz, Sternberg, Boat, et al., 1996; Lamb, Hershkowitz, Sternberg, Esplin, et al., 1996), although some of the labels have been changed to avoid confusion with labels used by other researchers.

1. *Introductory comments.* Although the introductory, nonsubstantive portions of the interviews were not coded, interviewers occasionally interjected introductory comments, procedural instructions, or comments designed to clarify the meaning of certain terms (e.g., "You need to speak up so we can hear you!").

2. *Nonsubstantive utterances.* Utterances, other than introductory comments, not related to the incident being investigated.

3. *Anchors.* Nonsubstantive statements (usually questions) designed to help specify the time when the alleged incidents took place by reference to extraneous events (e.g., "Do you remember Christmas?" usually followed by "Was it before or after Christmas?").

4. *Positive emotional referents.* References to a current positive emotional state or to the emotional state at the time of the disclosure or possible disclosure, such as "I bet it felt good to tell someone!" References to a positive emotional state at the time of the incident were coded as directive, option-posing, or suggestive utterances.

5. *Negative emotional referents.* References to a current negative emotional state (e.g., "You seem pretty sad") or to the emotional state at the time of disclosure or possible disclosure. References to a negative emotional state at the time of the incident were coded as directive, option-posing, or suggestive utterances.

6. *Facilitators.* Nonsuggestive encouragements to

Table 1 Distribution of Participants across Age and Delay Conditions

Age	Delay				Total
	<72 hr	<1 month	1-3 months	5-14 months	
4-5 years	8	13	8	11	40
6-7 years	9	9	8	12	38
8-9 years	5	10	9	8	32
10-12 years	9	10	9	7	35
Total	31	42	34	38	145

continue with a response. For example, utterances like "ok," restatements (echoing) of the child's previous utterance, and nonsuggestive words of encouragement ("You're doing fine") were included in this category.

7. *Verbalizations*. Attempts by the interviewer to state in words what the child had demonstrated by actions, gestures, or with dolls. For example, the interviewer might say, "So he touched your bottom," after this was demonstrated by the child. This code was used only if the interviewer's restatement did not obviously go beyond the demonstration. Such restatements were deemed suggestive verbalizations.

8. *Invitations*. Open-ended utterances (using questions, statements, or imperatives) used to elicit free recall responses from the child. Invitations could be general, like "Tell me everything that happened from the very beginning to the end," relate to the issue just mentioned by the child ("Tell me more about that"), or relate to an issue mentioned earlier ("Earlier you mentioned x. Tell me everything about that.").

9. *Directive utterances*. These focused the child's attention on details already mentioned by the child and requested further elaboration (for example, "Where were you when that happened?").

10. *Option-posing utterances*. These focused the child's attention on incident-related issues that the child had *not* previously mentioned but did not imply that a particular response was expected. For example, the interviewer might ask "Did you see his penis?" or "Did he do anything with his penis?" These utterances were labeled "leading" by Lamb, Hershkowitz, Sternberg, Boat, et al. (1996) and Lamb, Hershkowitz, Sternberg, Esplin, et al. (1996) but have been relabeled to avoid confusion with utterances labeled as leading by lawyers, judges, and other researchers.

11. *Suggestive verbalizations*. This code was used (1) when the nonverbal cues were not mentioned by the transcriber but were referred to by the interviewer or (2) when nonverbal cues were not described by the transcriber in as much detail as the interviewer implied. (For example: "Interviewer: Where did he touch you? Child: [points to lower part of body.] Interviewer: On your private.")

12. *Suggestive utterances*. These were stated in such a way that the interviewer strongly communicated what response was expected (for example: "He forced you to do that, didn't he?"), or assumed details that had not been revealed by the child (for example: Child: "We laid on the sofa." Interviewer: "He laid on you or you laid on him?")

13. *Suggestive actions*. This code was used when the interviewer demonstrated something with the dolls that the child had not demonstrated or described ver-

bally. This code would be used, for example, if the interviewer removed the doll's clothes before asking (or being told) whether the perpetrator's or child's clothes were on or off at the time of the alleged incident.

When a single turn in the dialogue included two or more statements or questions that could be coded differently, the highest category defined by the numerical label in the list above was applied, with an adverbial modifier (M) used to indicate that this was a "mixed" utterance. We created a data set that included only those utterances that fell readily into one category, but similar results were obtained when mixed utterances were included and the results reported here involved the larger more complete data set, in which "mixed" utterances were included. As suggested by Lamb, Hershkowitz, Sternberg, Esplin, et al. (1996), we combined utterances in categories 11, 12, and 13 into a single category of suggestive utterances, and focused attention in our analyses on invitations, facilitators, directive utterances, option-posing utterances, and suggestive utterances, which made up nearly 90% of the recorded utterances. Directive, option-posing, and suggestive utterances were viewed in combination as focused utterances.

Coders then tabulated the number of words in each of the children's responses and employed a technique developed by Yuille and Cutshall (1986, 1989; Cutshall & Yuille, 1990) and elaborated by Lamb and his colleagues (Lamb, Hershkowitz, Sternberg, Boat, et al., 1996; Lamb, Hershkowitz, Sternberg, Esplin, et al., 1996) to tabulate the number of new details conveyed by the child. By definition, details involved the identification of individuals, objects, and events and descriptions of their features (e.g., appearance, actions, locations). Details were counted only when they added to understanding of the target incident and its immediate disclosure, so restatements of facts were not counted.

Interrater reliability. All ratings were conducted by one of three coders who trained on an independent set of transcripts until they agreed with one another concerning the rating of at least 85% of the utterances of each type. During the course of rating, 25% of the transcripts were independently coded by two or more of the raters to ensure that they remained equivalently reliable. In these assessments, they agreed regarding the classification of 83% of the interviewer utterances and 88% of the details. The rates of agreement were somewhat lower in this study than in our other studies because the raters occasionally had difficulty distinguishing between substantive and nonsubstantive utterances, particularly when dolls and other props were being used. When they agreed that the utterances were substan-

tive, rates of agreement exceeded 90%, as they did in other studies.

RESULTS

Interviewer Utterances

The substantive sections of the 145 interviews we examined included a total of 14,156 interviewer utterances ($M = 97.7$, $SD = 34.4$). In the average interview, interviewers posed 2.7 ($SD = 2.1$, 3% of the total number of utterances) invitations, 16.7 ($SD = 15.5$, 17%) facilitators, 29.7 ($SD = 13.7$, 31%) directive prompts, 29.9 ($SD = 11.7$, 31%) option-posing prompts, and 5.0 ($SD = 3.3$, 5%) suggestive prompts. These five types of interviewer utterances thus accounted for 12,183, or 86% of the total number of utterances recorded. The other types of interviewer utterances occurred infrequently, except that 1,555 (11%) of the total were nonsubstantive utterances that were interjected into the substantive portion of the interviews. All subsequent analyses involve the 12,183 substantive interviewer utterances and responses to them.

Option-posing and suggestive prompts not only occurred frequently but were also employed from near the beginning of the substantive phases of the interviews. On average, only 5.22 ($SD = 6.12$) utterances (7% of the total number of substantive utterances in the substantive section) were asked before the interviewers offered their first option-posing or suggestive prompt. Analyses of variance revealed significant interactions between utterance type and age $F(12, 516) = 2.45$, $p < .01$ as well as between utterance type and delay $F(12, 516) = 3.97$, $p < .001$. Post hoc contrasts revealed that investigators offered proportionally more directive prompts to children aged 4 to 5 than 10 to 12 years of age ($ps < .05$). More facilitators appeared in interviews of children who were interviewed after a delay of less than 72 hours than in interviews of children interviewed after a delay of more than 1 month.

Children's Responses

Nearly 60% (7208) of the 12,183 interviewer utterances elicited new details from the children. Of those responses that did not elicit new details, 26% repeated details that had already been reported, whereas the others were nonresponsive digressions, unclear, or involved no response. Table 2 contains information about the number and proportion of interviewer utterances of each type that elicited new information from the children.

Table 2 Interviewer Utterances Eliciting New Details

Utterance Type	Number of Utterances Asked	Utterances Eliciting New Details (%)
Invitation	394	49 _a
Facilitator	2,426	52 _a
Directive	4,299	50 _a
Option-posing	4,342	74 _b
Suggestive	722	56 _c
Total	12,183	59

Note: Different subscripts denote significant differences by post hoc Scheffé tests, $p < .05$.

Subsequent Age (4) \times Delay (4) \times Investigative Utterance Type (5) analyses of variance (ANOVA) revealed significant effects for Age $F(3, 109) = 8.87$, $p < .001$, Delay $F(3, 109) = 6.48$, $p < .001$, and Interviewer Utterance type $F(4, 436) = 27.17$, $p < .001$ on the proportion of utterances that elicited new details. As shown in Tables 3 and 4, post hoc contrasts revealed that 4- and 5-year-olds and children interviewed after delays of 5 to 14 months were significantly less likely to provide new details in response to interviewer questions than older children and those interviewed after brief delays (<1 month). Analyses focused on Utterance Type revealed that children were significantly more likely to respond informatively to option-posing and suggestive utterances than to invitations, facilitators, or directive prompts (see Table 4). A significant interaction between Utterance type and Delay $F(12, 436) = 1.93$, $p < .05$ was also evident. Post hoc contrasts revealed that children who were interviewed 5 to 14 months after the alleged incident responded informatively less frequently ($p < .05$) to invitations than children interviewed within 72 hr (see Table 4). Inspection of the means reveals a linear trend, even though only the difference between the shortest and longest delays was statistically significant.

Table 3 Effects of Age on the Proportion of Interviewer Utterances Eliciting Details

Age	Number of Children	<i>M</i>	<i>SD</i>
4–5	40	.52 _a	.11
6–7	38	.60 _b	.10
8–9	32	.63 _b	.10
10–12	35	.66 _b	.10

Note: Different subscripts denote significant differences by Scheffé test, $p < .01$.

Table 4 Effects of Delay on the Proportion of Interviewer Utterances that Elicited Informative Responses

Delay	Invitations Eliciting Any Details (%)		Facilitators Eliciting Any Details (%)		Directives Eliciting Any Details (%)		Option-Posing Eliciting Any Details (%)		Suggestives Eliciting Any Details (%)		Total Utterances Eliciting Any Details	
	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>
<72 hr	.60 _a (.35)	28	.53 (.22)	30	.51 (.16)	31	.77 (.09)	31	.62 (.27)	30	.62 _a (.12)	31
<1 month	.53 (.37)	34	.52 (.26)	42	.54 (.15)	42	.74 (.16)	42	.62 (.25)	41	.62 _a (.11)	42
1–3 months	.41 (.40)	33	.43 (.21)	34	.51 (.15)	34	.78 (.10)	34	.56 (.36)	32	.60 (.10)	34
5–14 months	.32 _b (.35)	37	.42 (.22)	37	.47 (.13)	38	.70 (.13)	38	.54 (.31)	36	.55 _b (.12)	38
Total	.46 (.38)	132	.48 (.23)	143	.51 (.15)	145	.74 (.13)	145	.59 (.30)	139	.60 (.12)	145

Note: Different subscripts denote significant differences by Scheffé tests, $p < .05$. Except in the Total row, comparisons are made between means in the column.

Children's Informativeness

Subsequent analyses focused more narrowly on the 7,208 investigative utterances that elicited one or more new details from the children. Because the numbers of children who both were asked and informatively answered utterances of each type varied, the effects of Age and Delay on responses to different types of utterances were assessed in a series of ANOVAs with the number of words and details per response as the dependent variables. The results of these analyses are summarized in Tables 5 and 6. As expected, the average number of words elicited from the children increased with age overall and in response to all but suggestive utterances, where the trend was not significant. Contrary to prediction, Delay was not associated with the length of children's responses and there were no significant interactions between Age and Delay. Comparable ANOVAs with the number of details rather than the number of words as dependent variables likewise revealed that older children tended to provide more detailed responses than younger children did, although significant effects were not evident in analyses of responses to directive and suggestive (nonsignificant trend) prompts. Once again, children interviewed soon after the event did not provide more detailed individual responses than children interviewed after longer delays, and there were no significant interactions.

Because open-ended utterances were so much less common than more focused utterances, most of the information provided by the children in this sample was elicited by using focused utterances. Table 7 displays the total numbers of details elicited by using different types of prompts. The table shows that approximately one third of the information was elicited from children by using the option-posing and sugges-

tive utterances that are more likely to elicit erroneous details than open-ended prompts are.

DISCUSSION

Over the past decade, increases in the number of high profile child abuse cases has prompted interest in factors affecting the informativeness of children's reports of child sexual abuse. Factors like the interviewer's style, the child's age, and the delay between the TBR event and its recall are central to understanding the dynamics and quality of child forensic interviews. Although age, and to a lesser extent interviewer utterance type and delay, have been studied in laboratory contexts, the few field studies conducted by using actual forensic interviews have included too few "alleged victims" to permit the effects of age and delay to be explored systematically. By seeking out a large repository of recorded forensic interviews, we were able to explore how age and delay affected the interviewers' questioning style and whether questioning style, age, and delay affected the richness of children's reports or allegations.

Although the literature on forensic interviewing has long emphasized the factors that impede the informativeness of children as witnesses (e.g., Ceci & Bruck, 1995), several recent reports have reframed the debate by illustrating how interviewers' questioning styles can enhance or diminish the amount and quality of information elicited from children (e.g., Craig, et al., 1999; Lamb, Hershkowitz, Sternberg, Boat, et al., 1996; Lamb, Hershkowitz, Sternberg, Esplin et al. 1996; Sternberg et al., 1996, 1997). After examining forensic interviews conducted with children who made allegations of abuse, these researchers found that open-ended questions consistently elicited more details from children over 4 years of age than more fo-

Table 5 Effects of Age on the Average Number of Words per Response to Utterances of Specific Types

Age	Invitations		Facilitators		Directive		Option-Posing		Suggestive		Total	
	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>
4–5	7.62 _a (5.44)	17	7.27 _a (3.93)	37	5.65 _a (3.02)	40	3.20 _a (1.76)	40	4.02 (4.12)	36	4.46 _a (2.11)	40
6–7	10.94 (12.64)	26	10.17 _a (6.32)	37	6.33 _a (4.18)	38	3.28 _a (2.17)	38	4.37 (4.25)	31	5.47 _a (3.00)	38
8–9	21.33 (17.67)	22	16.00 _b (8.54)	29	8.06 (3.76)	32	5.27 (4.12)	32	6.08 (5.91)	28	8.86 _b (4.88)	32
10–12	23.36 _b (24.07)	25	15.49 _b (9.81)	35	8.65 _b (5.42)	35	5.95 _b (4.29)	35	8.05 (14.34)	34	9.77 _b (5.68)	35
	$F(3, 74) = 5.077$ ($p < .003$)		$F(3, 122) = 10.032$ ($p < .000$)		$F(3, 129) = 3.92$ ($p < .01$)		$F(3, 129) = 6.895$ ($p < .001$)		$F(3, 113) = 2.278$ ($p < .08$)		$F(3, 129) = 14.039$ ($p < .001$)	
Total	16.30 _a (17.98)	90	11.96 _b (8.17)	138	7.08 _c (4.30)	145	4.34 _d (3.39)	145	5.61 _d (8.48)	129	6.98 (4.62)	145

Note: Different subscripts denote significant differences by post hoc Scheffé tests, $p < .05$. In the total (bottom) row, subscripts refer to differences among means in the row; in the rest of the table, subscripts refer to differences among means in the column (i.e., across age levels). *F* values refer to analyses of responses to utterances of the type labeled in the column heading.

Table 6 Effects of Age on the Average Number of Details per Response to Utterances of Specific Types

Age	Invitations		Facilitators		Directive		Option-Posing		Suggestive		Total	
	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>
4–5	4.42 (3.42)	17	3.67 (1.33)	37	3.13 (.97)	40	1.95 (.62)	40	2.17 (1.38)	36	2.55 _a (.71)	40
6–7	4.99 (4.50)	26	4.94 (2.22)	37	3.28 (1.75)	38	1.93 (.71)	38	2.45 (1.57)	31	2.87 _a (1.00)	38
8–9	8.42 (4.90)	22	6.48 (3.13)	29	3.72 (1.20)	32	2.38 (1.19)	32	2.73 (1.84)	28	3.87 _b (1.60)	32
10–12	9.45 (9.09)	25	6.40 (3.68)	35	3.91 (1.77)	35	2.70 (1.29)	35	3.71 (5.27)	34	4.27 _b (1.75)	35
	$F(3, 74) = 8.173$ ($p < .028$)		$F(3, 122) = 7.921$ ($p < .001$)		$F(3, 129) = 1.846$ Ns		$F(3, 129) = 4.986$ ($p < .003$)		$F(3, 113) = 2.466$ ($p < .066$)		$F(3, 129) = 13.822$ ($p < .001$)	
Total	6.96 _a (6.35)	90	5.29 _b (2.91)	138	3.49 _c (1.48)	145	2.22 _d (1.02)	145	2.76 _e (3.05)	129	3.34 (1.47)	145

Note: Different subscripts denote differences by Scheffé tests, $p \leq .05$. In the total (bottom) row, subscripts refer to differences among means in the row; in the rest of the table, subscripts refer to differences among means in the column (i.e., across age levels). *F* values describe results of analyses concerned with responses to utterances of the type labeled in the column heading.

Table 7 Total Number of Words and Details Elicited by Different Types of Utterances

	Number of Words ^a	Total Number of Words (%)	Number of Details ^a	Total Number of Details (%)
Invitations	27.38 (38.58)	5	9.63 (15.47)	5
Facilitators	188.26 (256.60)	36	55.48 (79.91)	32
Directives	157.48 (131.83)	30	53.30 (43.10)	30
Option-posing	123.75 (106.58)	24	49.71 (31.47)	28
Suggestives	23.62 (30.39)	5	7.99 (10.67)	5
Total	520.49 (428.18)		176.12 (124.26)	

^a Standard deviations are in parentheses.

cused utterances did. In the present study, as in previous field studies, however, the interviewers seldom used open-ended questions despite the fact that they elicited more information than focused prompts did.

As in earlier research, the interviewers we studied relied primarily on focused questions to obtain information from children. Approximately 30% of the utterances were of the types which have been shown more likely to elicit inaccurate responses in laboratory analog contexts. In further violation of professional recommendations, the interviewers also asked option-posing and suggestive questions early in the interview, before exhausting open-ended prompts. Although focused questions are often needed to elicit details missing from free-recall accounts, the likelihood that the children's reports may be contaminated is enhanced when they are asked too early in the interview.

We also explored the children's responses to the interviewers' questions. Because forensic interviews are designed to elicit as much and as accurate information from children as possible, our analyses focused on the number of new details provided by children in their reports. A systematic evaluation of the children's responses revealed that children provided new information in response to only 60% of the interviewers' utterances. Only 5% of the total information was elicited by using invitations (free recall prompts), and the fact that the children were most likely to provide new details in response to option-posing and suggestive questions is disconcerting because responses to such prompts are more likely to be inaccurate than are responses to open-ended questions (Dent, 1982; Dent & Stephenson, 1979; Goodman & Aman, 1990; Goodman et al., 1991; Ornstein et al., 1992). Although accuracy cannot be directly assessed in field studies such as this because no objective records of the abusive events exist, the limitations and risks associated with the use of option-posing and suggestive questions in laboratory/analog studies raise concerns about the fre-

quent use of these types of prompts in forensic interviews of children. Concerns about the accuracy of information elicited by using option-posing and suggestive questions are particularly apt because, as noted earlier, one third of the utterances used by the interviewers were option-posing or suggestive and because these questions were asked early in the interview, when the potential for contamination was high.

Responsivity to interviewer utterances was also affected by age and delay. Not surprisingly, younger children and those interviewed after longer delays responded to interviewer utterances with new details less frequently than older children and children interviewed soon after the alleged events. In addition, as in previous laboratory/analog (e.g., Baker-Ward et al., 1993; Ornstein et al., 1992) and field (Lamb, Hershkowitz, Sternberg, Boat, et al., 1996; Lamb, Hershkowitz, Sternberg, Esplin, et al., 1996; Sternberg et al., 1996) studies, younger children in this study provided shorter and less detailed responses to all types of interviewer utterances than older children did. Younger children were also most likely to offer no informative details in response to invitations, and this tendency may well have prompted the interviewers to employ different types of prompts. All these findings suggest that we need to learn more about the specific types of questions that elicit information from younger children and from those interviewed after extended delays. Perhaps certain types of invitations (for example, those in which the interviewer cues recall by mentioning a detail reported by the child) are needed to elicit information from these children without risking contamination. Because of the risks associated with the option-posing and suggestive alternatives, it may be worthwhile to explore alternative types of invitations in this fashion, before concluding that focused and especially option-posing prompts are *necessary* when young children are being interviewed. We are currently experiencing some success of this sort in experimental field

studies, in which interviewer strategies are altered (Orbach et al., in press; Sternberg et al., in press).

In light of earlier claims that delays reduced the richness of children's accounts, we were surprised that delay had such small effects on the children's reports. In contrast to those participating in experimental studies, however, children in the interviews we studied were not thoroughly questioned about their experiences, which resulted in somewhat skeletal accounts of their experiences. Had their accounts been richer, we might have detected greater effects of delay. In addition, our ability to measure delay was much more limited than our measure of age because it was not always certain exactly when the abuse might have taken place. Especially with the older children, who understood the impropriety of the abusers' behavior, furthermore, delay may sometimes have reflected a reluctance to disclose and these motivational factors may also have influenced the amount of information revealed by the children. To explore the effects of delay more thoroughly, more definitive information about delay may be needed, along with closer attention to motivational influences on memory retrieval processes.

Despite a widespread belief that young children are unable to respond informatively to open-ended questions, invitations elicit more details from children in forensic contexts that focused interviewer utterances do (e.g., Craig, et al., 1999; Lamb, Hershkowitz, Sternberg, Boat, et al., 1996; Lamb, Hershkowitz, Sternberg, Esplin, et al., 1996; Sternberg et al., 1996), but concerns about the completeness of young children's accounts remain. To understand children's accounts and to use the information for forensic or protective purposes, interviewers need sufficient information to understand the events in question. As a result, it is important to evaluate not simply the amount of information elicited by each interviewer utterance or prompt but the total amount of information obtained. Because young children provide shorter and less detailed responses to all types of prompts than older children do, interviewers may need to ask more questions of them to understand what happened. Unfortunately, because the interviewers used fewer than three invitations in the average interview, it was not possible to explore whether more complete accounts could be elicited by using free-recall probes.

Recent studies involving the implementation of partially structured investigative protocols that require interviewers to use open-ended questions early in their interviews illustrate that substantial amounts of information can be elicited from children under age 7 by using invitations (Orbach et al., in press; Sternberg et al., 1997, in press). Although the com-

pleteness of the accounts cannot be determined in field contexts, it is noteworthy that more than 85% of the children in these studies, independent of age, disclosed the central details of the alleged abuse in response to open-ended prompts. One can only speculate how much more information might have been elicited by using invitations if the interviewers we studied here had continued to use them throughout their interviews. Hershkowitz (in press) recently reported that invitations remain superior even in later phases of the interview, when one might expect the children's memories to have been exhausted, and that invitations were equivalently productive when they were used in any of four segments of the interview.

Overall, the evidence obtained here as well as in other field studies supports professional recommendations that forensic interviewers should pose more open-ended prompts and reduce their reliance on focused questions. In light of the risks associated with option-posing and suggestive questions and of the children's tendency to respond more frequently to them, the timing of these questions is also important. Clearly, option-posing and suggestive questions are less likely to contaminate either the children's accounts or the investigators' understanding when asked near the end of the interviews.

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