Do Human Figure Diagrams Help Alleged Victims of Sexual Abuse Provide Elaborate and Clear Accounts of Physical Contact with Alleged Perpetrators?

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SUMMARY

The present study examined whether the use of human figure diagrams (HFDs) within a well-structured interview was associated with more elaborate and clearer accounts about physical contact that had occurred in the course of an alleged abuse. The sample included investigative interviews of 88 children ranging from 4 to 13 years of age. Children were interviewed using the NICHD investigative interview protocol, and were then asked a series of questions in association with unclothed gender-neutral outline diagrams of a human body. A new coding scheme was developed to examine the types and clarity of touch-related information. Use of the HFDs was associated with reports of new touches not mentioned before and elaborations regarding the body parts reportedly touched. The HFDs especially helped clarify reports by the oldest rather than the youngest children. The clarity of children's accounts of touch was also greater when details were sought using recall prompts. Copyright © 2009 John Wiley & Sons, Ltd.

A growing body of research shows that the richness and accuracy of children's testimonies depend in large part on the techniques used by investigative interviewers to elicit information from them (see Lamb, Hershkowitz, Orbach, & Esplin, 2008; Pipe, Lamb, Orbach, & Esplin, 2004, for reviews). Most of the recent research has focused on verbal techniques. As a result, although nonverbal interviewing techniques are widely used in clinical and forensic settings, evidence about the effects of nonverbal techniques comes primarily from studies of anatomically detailed (AD) dolls, with little known about the possible benefits and risks associated with other nonverbal tools, including human figure diagrams (HFDs). The present study was designed to examine whether the use of HFDs was associated with differences in the ways young victims of alleged sexual abuse provided information about touches that occurred during the alleged incidents.

There are several reasons why props such as AD dolls and HFDs might be useful. Such aids may, for instance, help children to communicate information and comprehend adults' questions because they reduce reliance on language and this may be a particularly

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important consideration when very young children are being interviewed (e.g. Everson & Boat, 1994, 2002). Dolls and drawings or diagrams can also facilitate the retrieval of information from memory by providing the kinds of concrete, external retrieval cues likely to assist young children (e.g. Pipe, Gee, & Wilson, 1993) who have more difficulty than older children generating and using retrieval strategies efficiently and flexibly (Flavell, Miller, & Miller, 1993). Further, such props might provide children with an alternative way of describing experiences that they consider to be intimate or shameful (Saywitz, Goodman, Nicholas, & Moan, 1991).

The use of dolls can become problematic in forensic contexts, however, when they are used suggestively (Ceci & Bruck, 1993, 1995; DeLoache, 1994; Santtila, Korkman, & Sandnabba, 2004), especially for very young children who are often confused when questioned about their bodies and have difficulty representing themselves with dolls (DeLoache & Marzolf, 1995). Furthermore, fantastic elements are disproportionately likely to be elicited by the presence of props usually associated with fantastic play, or by interviewer requests that children 'imagine' or 'pretend' (Lamb, Sternberg, & Esplin, 1994, 1995; Thierry, Lamb, Orbach, & Pipe, 2005). As a result, forensic investigators have been urged to avoid using such props or requests during investigative interviews (e.g. Dickinson, Poole, & Bruck, 2005; Poole & Lamb, 1998).

Although perhaps less commonly used than dolls, HFDs are frequently used by and widely recommended to therapists and forensic interviewers for labelling body parts, aiding the recall of specific information or clarifying verbal reports (e.g. Holmes & Vieth, 2003). In experimental research, findings on the use of HFDs are mixed. According to Steward et al. (1996), 3- to 6-year-old children's free-recall reports of body touch during a paediatric examination were very accurate but incomplete. When the children were directly questioned using dolls and diagrams, they still failed to report many experienced touches, while reports of non-experienced touches increased. Moreover, accuracy decreased as delays approached 6 months, with the diagrams eventually eliciting some spontaneous but erroneous reports of genital touches. Like Steward et al. (1996), Willcock, Morgan, and Hayne (2006) reported that children's reports of innocuous touches during a scripted event tended to be inaccurate. In one experiment, 5- to 6-year-old children were interviewed 1 month after the event using a 'body map' of a clothed child. Ten of the 125 children reported no touches at all, fewer than half of the experienced touches were reported, and only half of the reported touches had actually occurred. Of particular concern, 10% of the children erroneously indicated that they had been touched in the genital region, while 25% of the children erroneously indicated that they had been touched on their chest–breast area.

Unclothed, rather than clothed HFDs are typically used in clinical and forensic interviews, however, and children may be able to indicate with greater precision where they have been touched when unclothed HFDs are used (Brown, Pipe, Lewis, Lamb, & Orbach, 2007). Brown et al. (2007) explored the accuracy of information about known touches by introducing unclothed HFDs after exhaustive verbal recall, with follow-up specific questions (e.g. 'Show me on the picture where. . . .') and open-ended prompting (e.g. 'Tell me about that touching'.) similar to those used by Aldridge, Lamb, Sternberg, Orbach, Esplin, and Bowler (2004). When questioned about touch, most children provided new information after the HFDs were introduced, although children who were questioned in association with the diagrams reported more incorrect information than those not provided with HFDs.

Only one published study has examined the use of HFDs in a forensic context. Aldridge et al. (2004) found that HFDs elicited many new forensically relevant details about alleged

incidents of sexual abuse. Following an exhaustive verbal interview, 4- to 13-year-old alleged victims who disclosed touch were asked to show on an HFD where they had been touched and with what parts of the perpetrators' bodies. A series of direct questions were then asked about all reported touches. Because the diagrams were introduced following exhaustive retrieval, Aldridge et al. believed that possible contamination was minimized, and that the forensic value of information elicited earlier in the interview was not compromised. Whenever recognition memory prompts elicited information, furthermore, interviewers followed-up with free-recall prompts to foster elaboration while minimizing potential contamination on the quality of information elicited. Aldridge et al. also used gender-neutral outline diagrams rather than AD drawings in case more explicit drawings might be too suggestive. Because this was a field study, of course, the accuracy of the children's reports could not be assessed as it had been in the experimental research using HFDs.

Building on Aldridge et al.'s findings and using transcripts of the same interviews, we asked whether the additional information elicited using HFDs pertained to body touch, and whether the touches in question had or had not been mentioned before the diagrams were introduced. Because HFDs were designed primarily to facilitate the identification of body parts, we expected that most of the elicited information would be about body parts rather than the characteristics of the alleged touches. Although we could not evaluate the accuracy of the children's reports, we attempted to measure the clarity of the children's accounts. Specifically, we asked whether introduction of the HFDs was associated with greater clarity about the reported touches. One could argue that clearly reported touches may be highly inaccurate or at worst may not have occurred. On the other hand, unclear testimonies may confuse jurors to the extent that they influence their judgment, whether or not they are accurate. The current study attempts to assess only one potentially important aspect of the quality of children's testimonies, and complementary laboratory research exploring both accuracy and clarity is clearly needed.

The clarity of information about body touch may be related to the type of prompts the interviewers used. Although information elicited using free recall is more likely to be accurate than information elicited using focused recognition-based prompts (e.g. Dent & Stephenson, 1979; Goodman & Aman, 1990; Lamb & Fauchier, 2001), unclear or inaccurate information can be provided in response to open-ended prompts when delays are long, or there have been opportunities for post-event contamination (e.g. Leichtman & Ceci, 1995; Poole & Lindsay, 1995). Because there were varying delays between the alleged incidents and the investigative interviews in some of the cases studied here, we expected open-ended or recall prompts to elicit unclear touch details as frequently as focused or recognition prompts.

Aldridge et al. (2004) also found that the HFDs were particularly helpful in eliciting information from the youngest (4- to 7-year-old) children interviewed, but did not determine whether the additional information related to touches, nor whether the clarity of the information changed when the diagrams were introduced. We expected that the relation between the use of the HFDs and the clarification of reports about unclear touches would vary depending on the children's ages. Building on findings that younger children tend to provide fewer and less informative details than older children (Lamb, Sternberg, & Esplin, 2000; Lamb, Sternberg, Orbach, Esplin, Stewart, & Mitchell, 2003), we also expected the youngest children to provide more unclear information about touch than older children would.

METHOD

Subjects

The sample included investigative interviews of 88 children (70 girls and 18 boys), ranging from 4 to 13 years of age ($M = 9.11$, $SD = 2.58$). These interviews were conducted by police officers from a single constabulary in the United Kingdom who had been trained to use the NICHD investigative interview protocol (Lamb et al., 2008; Orbach, Hershkowitz, Lamb, Sternberg, Esplin, & Horowitz, 2008; Sternberg, Lamb, Orbach, Esplin, & Mitchell, 2001). During the study period, these police officers rather than their colleagues were asked to investigate sexual abuse allegations involving 4- to 13-year-old victims whenever possible. All available protocol-guided interviews that included the HFDs and yielded explicit allegations of fondling or penetrating sexual abuse were included in the study.

All the allegations were deemed valid by police investigators, but conclusive corroborating evidence was seldom obtained. Thirty-four (39%) of the children reported a single incident, whereas 54 (61%) reported two or more incidents. In 23 (26%) of the cases, the alleged perpetrator was an immediate family member, 22 (25%) were more distant relatives, 40 (46%) were familiar but unrelated individuals and only 3 (3%) were unfamiliar to the alleged victims. Seventeen (19%) of the children alleged that they were touched over their clothes, 31 (35%) reported touching under their clothes and 40 (46%) described oral, anal or vaginal penetration.

NICHD investigative protocol

The NICHD protocol structures all phases of the investigative interview. In the introductory phase, the interviewer introduced him- or herself, clarifies the child's task (the need to describe the events truthfully and in detail), and explains the ground rules and expectations (i.e. that the child can and should say 'I don't remember', 'I don't know', 'I don't understand', or correct the interviewer when appropriate). The first part of the rapport-building phase is designed to create a relaxed, supportive environment. Children are then prompted to describe a recently experienced neutral event in detail. This training is designed to simulate the open-ended investigative strategies and techniques used in the substantive phase while demonstrating to children the specific level of detail expected. In a transitional phase between the pre-substantive and substantive parts of the interview, a series of prompts are used to identify the target event(s) under investigation non-suggestively, beginning with 'Tell me the reason you came to talk with me today'. The interviewer only moves on to some carefully phrased and increasingly focused prompts (in sequence) if the child fails to identify the target event(s).

Following disclosure of the allegation, the free-recall phase begins with the main invitation ('Tell me everything that happened from the beginning to the end as best you can remember'). Follow-up open-ended prompts are then recommended ('Then what happened?' 'Tell me more about that'), as are cued invitations ('Earlier you mentioned a person/object/action. Tell me everything about that') aimed at eliciting free-recall accounts of the alleged incident/s from free-recall memory. As soon as the first narrative is completed, the interviewer prompts the child to indicate whether the incident occurred 'one time or more than one time' and then proceeds to secure incident-specific information. In multiple event cases, children are provided with separate incident invitations ('Tell me everything that happened the first time/last time/best remembered time from the beginning

to the end, as best you can remember'), also followed by follow-up and cued invitations for further exploration of each event.

Only after exhaustive open-ended questioning do interviewers proceed to directive questions (focused questions addressing details previously mentioned by the child), such as 'What colour was his car?' after the child mentioned a car. If crucial details are still missing at the end of the interview, interviewers may ask limited option-posing questions (mostly yes/no questions referencing new details that the child failed to address previously) such as 'Did he touch any part of his body when he was talking to you?' Suggestive utterances that communicate to the child what response is expected ('At that time he was laying on top of you, wasn't he?') are strongly discouraged in all phases of protocol interviews.

In the present study, the protocol interview was followed by a series of structured questions (please contact the corresponding author for a full copy of the protocol) in which reference was made to unclothed (frontal and dorsal), gender-neutral outline diagrams (see Appendix A). Questioning began with a general summary to refocus children's attention on any touching disclosed earlier in the interview. Because all of the children had already mentioned being touched by the perpetrator, the next prompt was a directive recall prompt (i.e. 'Show me on the picture where. . . .') that was followed by a series of alternating yes–no questions and open-ended free-recall prompts concerning the parts of the child's body that were touched by the perpetrator and the parts of the perpetrator's body that made contact with the child. Free-recall prompts were used to elicit further information whenever body contact was mentioned.

Data coding

The substantive portions of the interviews had previously been reviewed by two trained raters (Aldridge et al., 2004) who categorized each interviewer utterance, defined by 'turns' in the conversation, using the categories described by Lamb et al. (1996): invitations, directives, option-posing and suggestive. In our study, we collapsed these into two categories: recall and recognition prompts. Recall prompts included the following:

1. *Invitations*. Utterances prompting free-recall responses from the child. Such utterances do not delimit the child's focus except in a general way (e.g. 'Tell me everything that happened'), or use details disclosed by the child as cues (e.g. 'You mentioned that he touched you. Tell me everything about the touching').
2. *Directive utterances*. These refocus the child's attention on details or aspects of the alleged incident that the child has already mentioned, providing a category for requesting additional information using 'Wh-' questions (cued recall). For example, 'When did it happen?' (when the child disclosed that something happened), or 'What colour was his T-shirt?' (when the child mentioned a T-shirt).

Recognition prompts included the following:

3. *Option-posing utterances*. These focus the child's attention on details or aspects of the alleged incident that the child has not previously mentioned, asking the child to affirm, negate or select an investigator-given option using recognition memory processes, but do not imply that a particular response is expected. For example, the investigator might ask 'Did he touch you over or under your clothes?' (when the child mentioned being touched).

4. *Suggestive utterances*. These are stated in such a way that the interviewer strongly communicates what response is expected (e.g. 'He forced you to do that, didn't he?') or they assume details that have not been revealed by the child (e.g. Child: 'We laid on the sofa.' Interviewer: 'He laid on you or you laid on him?').

By definition, details involved the identification of individuals, objects and events and descriptions of their features (e.g. appearance, actions, locations). All were thus forensically relevant. Details were only counted when they added to the understanding of the target incidents, so restatements of facts were not counted. Details provided following facilitators were attributed to the preceding substantive utterance. In the analysis, reported here, details were considered only if they pertained to touches.

In the present study, a new coding scheme was developed to examine the *types of details* children reported in relation to the alleged touch(es) they experienced. Details pertaining to body touch were coded on three dimensions—the type of touch detail, the clarity of the touch being described and the type or category of prompt eliciting the touch detail. Repeated details about previously reported touches were not coded.

Type of touch detail

1. *New touch details*. References to a single new touch on the alleged victim's or perpetrator's body (e.g. 'He touched my privates' or 'I rubbed his shoulders'). More than one new touch detail could be coded in a single response. New touch details may include more than one reference to actions or characteristics of the touch, but pertain to only a single body part.
2. *Elaboration with respect to body parts*. Additional details (including pointing at drawing) about a previously mentioned body part (e.g. 'in between' legs), or a body part not specifically named earlier (e.g. 'breasts' after reporting 'my top half'). Details that eliminated ambiguity about previously mentioned body parts were also coded as elaborations.
3. *Elaboration with respect to the nature of touches*. Additional details about previously mentioned actions, characteristics of the touches (e.g. speed, pressure) or information indicating whether the touch was over clothes, under clothes or involved penetration. Details that eliminated ambiguity about previously mentioned actions were also coded as elaborations.

Clarity of touch

1. *Unclear*. Touches were coded as unclear when either the body part or action involved was not clear. Body parts were deemed unclear if they were unclearly named (e.g. 'privates', 'tiddly', 'tail', 'mary', 'down belows'), if reference was made to a large region of the body that might include more than one sexual and/or non-sexual body part (e.g. 'bottom half'), or when either the alleged victim's or perpetrator's body parts were not specified. Actions were deemed unclear if they were unclearly named (e.g. 'feel', 'mess', 'got') or if it was not clear whether the touch was non-sexual, over clothes, under clothes or involved penetration.
2. *Clear*. Touches were coded as clear when both the alleged victim's and perpetrator's body parts were clearly specified (e.g. 'vagina', 'penis', 'boobs', 'willy', 'bum'), the actions involved were clear (e.g., 'lick', 'rub', 'stroke'), and it was clear whether the

touch was non-sexual, over clothes, under clothes or involved penetration. Some body parts were implied by the verb used— 'hand' from actions such as 'drag', 'squeeze' or 'grab'; 'mouth' from actions such as 'suck', 'bite' or 'kiss' and 'foot' from 'kick'.

Clarity was coded in such a way that elaborations about a touch continued to be coded as unclear unless the detail clarified the touch. Once clarity had been achieved, elaborations about the same touch were coded as clear.

Interrater reliability

All coding was conducted by two coders who trained on an independent set of transcripts until they agreed with one another concerning the classification or identification of at least 90% of the details. Agreement regarding the classification of the utterance types was assessed using Cohen's κ; overall agreement was .96 and agreement regarding individual categories ranged from .89 to .97 (see Aldridge et al., 2004). During the course of rating for the type of touch details and clarity of touch, 28% of the transcripts were independently coded by both of the raters to ensure that they remained equivalently reliable. Using Cohen's κ, agreement regarding the identification of details was .95. Agreement regarding the classification of body touch details was 1.00 for utterance type, .90 for type of touch detail and .83 for clarity of touch.

RESULTS

Preliminary analyses

In all reported analyses, the unit of analysis was the detail, rather than the touch. Only details related to touches were considered, so the numbers of details reported by Aldridge et al. are not the same as those reported here.

Preliminary analyses of the data conducted using analyses of variance (ANOVAs) revealed no main effects of gender, number of incidents (one vs. more than one), familiarity of perpetrator (familial vs. non-familial) and type of abuse (touch over clothes, touch under clothes, penetration) on the total number of touch details reported. These independent variables were therefore excluded from the analyses reported below. All the dependent variables had high levels of skewness and were thus log transformed before ANOVAs were conducted. Raw means and standard deviations are presented below. ANOVAs result from within-subjects analyses on the effects of interview phase (before vs. after drawing), type of detail (new touch, elaboration on body part, elaboration on nature of touch), clarity of touch (unclear vs. clear) and interviewer utterance (recall vs. recognition) are first reported, followed by results from between-subjects analyses concerned with the effects of age (4–7, 8–10 and 11–13 years). All significant effects, $p < 0.05$, are reported.

Main effects of interview phase

Children reported fewer new details and elaborations about the nature of touch after than before the HFDs were introduced (see Table 1), Fs(1, 87) $= 50.31$, 21.59, $p < 0.05$, η^2s $= 0.37$, 0.20, respectively. The number of elaborations about body part did not differ significantly before and after the introduction of the HFDs. Children reported fewer details

Table 1. Type of detail and clarity of reports before and after introduction of the HFDs

	Interview phase			
	Before diagrams		After diagrams	
	M	SD	*M*	SD
Type of detail				
New touch	7.01	6.62	2.76	3.51
Elaboration re. body part	5.69	5.19	4.68	5.13
Elaboration re. nature of touch	6.59	6.23	3.41	4.56
Clarity of touch				
Unclear	9.20	8.54	3.41	5.01
Clear	10.13	10.36	7.41	8.43

about both unclear and clear touch after than before the HFDs were introduced, Fs(1, 87) $= 35.39, 5.09, p < 0.05, \eta^2$s $= 0.29, 0.06$, respectively.

Type and clarity of touch details

The number of touch details did not vary according to the type of detail before the HFDs were introduced. After the diagrams were introduced, the children elaborated significantly more about body parts and the nature of reported touch rather than reporting new touches, $F(2, 86) = 69.33, p < 0.05, \eta^2 = 0.62$ (see Table 1). The difference between the number of details about unclear and clear touch before the HFDs were introduced was non-significant. Children reported significantly more details about clear than unclear touches after the HFDs were introduced, $F(1, 87) = 64.15, p < 0.05, \eta^2 = 0.42$ (see Table 1).

Interviewer utterances

Children reported significantly more details about touches in response to recall than recognition prompts both before and after the HFDs were introduced, but the magnitude of the difference was greater before than after, Fs(1, 87) $= 358.34, 29.60, p < 0.05, \eta^2$s $= 0.81, 0.25$, respectively (see Table 2). In terms of clarity, recall prompts elicited significantly more details about both unclear and clear touches than recognition prompts did before the HFDs were introduced, $F(1, 87) = 54.56, p < 0.05, \eta^2 = 0.39$. The effect of utterance was significantly weaker after the HFDs were introduced, however, with children reporting more details about clear touches in response to recall than recognition prompts, but similar numbers of details about unclear touches in response to recall and recognition prompts $F(1, 87) = 19.83, p < 0.05, \eta^2 = 0.19$ (see Table 2).

Age

The total number of touch details did not vary with age after the HFDs were introduced (see Table 3). Clarity of reports of touch varied with age following the introduction of the HFDs. The 4- to 7-year-old reported more details about unclear touches than the 11- to

Table 2. Total number and clarity of details elicited using recall and recognition prompts

	Interview phase and type of interviewer prompt							
	Before diagrams				After diagrams			
	Recall		Recognition		Recall		Recognition	
	M	SD	M	SD	M	SD	M	SD
Total number of touch details	17.53	15.60	1.80	1.92	7.65	9.64	3.20	3.12
Clarity of touch								
Unclear	8.55	8.24	0.66	1.02	2.38	3.99	1.03	1.74
Clear	8.99	9.68	1.14	1.78	5.27	7.17	2.17	2.14

13-year-old, $F(2, 85) = 5.14$, $p < 0.05$, $\eta^2 = 0.11$, but the number of details about clear touches did not vary with age.

DISCUSSION

The goal of this study was to determine whether the use of HFDs within a well-structured interview was associated with the type and clarity of touches reported by alleged victims of sexual abuse. First, we asked whether the additional information elicited using the HFDs pertained to body touch, and whether the touches in question had or had not been mentioned before the diagrams were introduced. The results showed that the HFDs helped elicit details about touches that had not been mentioned even after exhaustive questioning before the HFDs were introduced. *Post hoc* analyses revealed that most of the new touches were mentioned by indicating a new body part on the drawings. Presumably, the body part cues provided by the HFDs prompted the retrieval of information about the events being described, and thus led the children to mention new touches. The visual representation of various body parts thus helped the retrieval or reporting of information about touches that has not been mentioned before.

The accuracy of these reported touches remain unclear, however. Although it is possible to evaluate the accuracy of children's reports in laboratory settings, this is usually

Table 3. Age differences in the total number and clarity of touch details

| | Age | | | | | |
| | 4–7 years | | 8–10 years | | 11–13 years | |
	M	SD	M	SD	M	SD
Total number of touch details						
Before diagrams	12.86	12.72	15.93	9.79	28.26	19.75
After diagrams	13.43	11.55	9.79	11.17	9.52	11.58
After diagrams						
Details about unclear touch	5.61	6.78	2.83	4.16	1.97	2.86
Details about clear touch	7.82	7.37	6.86	8.14	7.55	9.75

impossible in forensic contexts, so we were unable to address accuracy in this study. As a result, further research in laboratory analogue contexts is clearly needed. It should also be noted that the HFDs were only introduced by the interviewers after an exhaustive verbal interview using the NICHD investigative interview protocol, which has been shown to increase the quality of information elicited from young witnesses and victims (see Lamb et al., 2008 for a review). Such a strategy may have reduced the risks associated with use of the HFDs.

Most of the touch details reported after the introduction of the HFDs involved elaborations of information about previously mentioned touches. This contrasts with Brown et al.'s (2007) finding that children using diagrams were least likely to elaborate on their reports of touch, whereas children asked verbal questions only were most likely to provide such elaborations. There may be a methodological explanation—children may find it easier to describe sexual body parts with a visual aid, thus the HFDs may be more useful in eliciting elaborations about sexually abusive touches than innocuous touches. Because the HFDs were introduced in this study only after exhaustive verbal retrieval, we expected that the children would tend to elaborate on previously mentioned touches rather than report new touches. Further examination, however, revealed that 50% of the elaborations concerned touches first reported *after* the HFDs were introduced. This suggests that the HFDs elicited additional details about the alleged abuse that were unrelated to details mentioned before the HFDs were introduced.

Because the HFDs were designed primarily to facilitate the identification or labelling of body parts, we expected that most of the elicited information would be about body parts rather than about the nature of the alleged touches. As predicted, children provided more elaborations about body parts than elaborations about the nature of either previously reported or new touches after the HFDs were introduced. Further, the children in our study reported just as many elaborations about body parts after as before the introduction of the HFDs.

We also questioned whether introduction of the diagrams yielded greater clarity about the reported touches. Although children reported fewer unclear and clear touch details after than before the HFDs were introduced, they reported significantly more clear than unclear touch details after the HFDs. There are several possible reasons for this. In our study, details were coded as unclear if either the victim's or suspect's body parts were not clear, or if the seriousness of the touch was not clear. The use of a HFD in the face of such lack of clarity should help the children make clear which body parts had been involved. It is worth noting that body parts identified on the diagrams were classified as clear touch details. Reports of touches using a diagram may be inaccurate, however, because representational accuracy is generally poor among young children (Winner, 1985), and may thus locate body parts imprecisely (Brown et al., 2007). In the current study, the youngest children were referred to the relevant functions when asked questions about the body parts to which their attention was being drawn (e.g. 'Did s/he touch this part [point to genital area], the part you wee with?'), however, and this might have helped make the information more reliable.

In addition, new touches were coded as clear when they were identical to previously mentioned touches that were clearly described (e.g. same type of touch on different occasions). The majority of reported touches had been clarified before the HFDs were introduced, however, making it more difficult to evaluate their usefulness. Further research involving a coding system that allows researchers to track the clarification process and thus pinpoint the point at which clarity was achieved would be very valuable. In order to obtain

more conclusive evidence regarding the benefits of using HFDs, it would also help to examine the extent to which details elicited specifically using the questions associated with the HFDs are new or elaborative and clear or unclear.

Interestingly, more details about touches were elicited by recall than recognition prompts after the HFDs were introduced, even though recognition prompts dominated the HFD phase of the interview. This finding is reassuring because recall prompts are typically associated with greater accuracy than recognition prompts (e.g. Dent & Stephenson, 1979; Goodman & Aman, 1990; Lamb & Fauchier, 2001). Because the delays between the alleged incidents and the investigative interviews varied, we expected that both open-ended (recall) prompts and focused (recognition) prompts would elicit some unclear details. Before the HFDs were introduced, recall prompts elicited significantly more details about unclear touches than did recognition prompts. The children reported more clear touch details in response to recall than recognition prompts during the HFD phase of the interview, however, suggesting that the follow-up recall prompts in the HFD phase helped children to elaborate on descriptions of touches reported earlier.

We were interested in age differences in children's accounts of bodily touch during the HFD phase. Aldridge et al. (2004) found that the HFDs were particularly helpful in eliciting additional information from the youngest (4- to 7-year-old) children interviewed, but did not determine whether the additional information related to touches, nor whether the clarity of the information changed when the diagrams were introduced. We found that there were no age differences in the total numbers of touch details reported following the introduction of the HFDs. The 4- to 7-year-old provided almost as many touch details after as before the introduction of the HFDs, whereas the older children provided significantly fewer touch details during the HFD phase. This suggests that the HFDs helped the youngest children report more details, particularly elaborations about previously mentioned touches. These findings mirror those reported by Aldridge et al. (2004), who noted that both the absolute number of details and the proportion of the total retrieved after introduction of the HFD decreased with age. As Aldridge et al. suggested, the 11- to 14-year-old children may have provided fewer touch details during the HFD phase because they had already provided more complete accounts of experienced touches during exhaustive retrieval in the standard part of the interview. In contrast, the visual body part cues on the HFDs may have helped the youngest children access memories of experienced touches that they could not have accessed without being prompted.

We also expected that the relation between use of the HFDs and the clarity of touch details would vary depending on the children's ages. Because younger children tend to provide fewer and less informative details than older children (Lamb et al., 2000; Lamb et al., 2003; Lamb et al., 2008), furthermore, we expected the youngest children to provide more unclear information about touches than older children would. Our results supported these hypotheses. After the HFDs were introduced, the youngest children reported more unclear touch details than the oldest children. Although the youngest children might have been able to use the HFDs to represent both their own and the alleged suspect's bodies, and thus elaborated about alleged touches, they appeared unable to provide clear accounts of these touches. Older children, by contrast, were able to provide other details that helped clarify the touches, so the HFDs helped 'complete' the accounts by eliciting clear body part details. *Post hoc* analyses of unclear touch details revealed that the youngest children were frequently unable to provide clear information about the sexual seriousness of touches, specifically whether the touches were over clothes, under clothes or involved penetration. It

was not surprising, therefore, that the HFDs were less useful in eliciting such information when its primary benefit was the identification of body parts.

In all, the study showed that use of the HFDs was associated with reports of new touches not mentioned before and elaborations regarding the body parts reportedly touched. The HFDs especially helped clarify reports by the oldest rather than the youngest children. Due to the nature of our data, we were unable to evaluate the accuracy of the children's accounts. We were also unable to specify causal relationships between the use of HFDs and both the type and clarity of touch information. Complementary laboratory research is clearly necessary to address these questions, and also determine whether the new touches and body part elaborations elicited using the HFDs are accurate and how clarification can best be achieved. In addition, further research is needed to explore the ways in which children's accounts of sexual abuse become elaborated in the course of forensic interviews, including those involving HFDs.

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APPENDIX A

Unclothed gender-neutral outline diagram of a human figure