Do Dolls and HFDs Assist in Eliciting Information About Touch in Interviews With Children?

By

Alana Malloy

A thesis
submitted to the Victoria University of Wellington
in fulfilment of the requirements for the degree of
Masters of Science in Psychology

Victoria University
2009

Abstract

The current study aimed to investigate the utility of HFDs and dolls in memory interviews about a touch event. Fifty-three children aged 5 to 7 years experienced a staged event involving innocuous touch. They were interviewed 7 to 11 days later either with a purely verbal interview, the assistance of HFDs, or the assistance of dolls. No significant differences were found in the amount or accuracy of information reported in each interview type, though information was highly accurate in all conditions. This indicates that although props did not offer any additional facilitation to eliciting information from children than verbal interview alone, they also were not harmful to the children's reports. Limitations of the current study and directions for future research are discussed.

Acknowledgements

I would firstly like to thank Dr Karen Salmon for supervising this project. Thank you for your patience, dedication and full interest in the project, as well as your prompt, constructive feedback throughout the year. Your assistance in completing this thesis is greatly appreciated.

Thank you to Kath Mackay for sharing this project with me. The many hours of collecting and analysing data would not have been the same without your help. Thank you also for being such a supportive friend.

I would finally like to acknowledge the children of Brooklyn Primary School who participated in this study, and their parents and caregivers for allowing them to take part. Considerable thanks also to the principal and teachers of Brooklyn School for kindly allowing us to come into the school and conduct this research.

Table of Contents

List of Tables

Do dolls and HFDs assist in eliciting information about touch in interviews with children?

There is a growing need for children to provide memory reports of events where they have experienced touch. As a result, research is continually being conducted into the best ways to ensure that these reports are of a high quality through certain verbal and nonverbal approaches. The current study aims to extend this research by comparing two strategies for enhancing children's reports, in combination with an empirically sound interview protocol.

Children as eyewitnesses

Millions of cases of child abuse are reported to authorities in developed countries each year, and it is believed that a substantial amount of additional cases are never reported (London, Bruck, Ceci, & Schuman, 2005; Pipe, Orbach, Lamb, & Cederborg, 2007). In New Zealand from 2007 to 2008, investigations by Child Youth and Family (CYF) reported a total of 16, 290 confirmed cases of child abuse (1, 003 of these sexual abuse) (J. Nichols, personal communication, September 16, 2008). With a rise in the detection and reporting of child abuse over the years, child witness laws have been relaxed, and in many countries there is no lower age limit for when a child can be called upon to testify as a witness to their own abuse (Berk, 2006). In New Zealand, children of any age are now able to give evidence to their abuse in court, but if under 17 years of age must do so via videotape or from behind a screen (New Zealand Government, 2006). Further, there is often a lack of physical and psychological evidence against an alleged perpetrator of sexual abuse, and the alleged victim is typically the only eyewitness (Bruck, Ceci, & Hembrooke, 1998; London, *et al*.). As a result, there has been a significant increase in the number of children required to give evidence in their own abuse trials, particularly alleged victims of sexual abuse (Goodman & Schwartz-Kenny, 1992).

Consequently, there is typically a considerable reliance on the victim's testimony in court cases involving child abuse. Increasing attention has recently been paid to the abilities of children to accurately remember and report details of an event they have experienced (Pipe, Lamb, Orbach, & Esplin, 2004). Prior to the 1970s, children were rarely called upon to testify in sexual abuse trials, as their testimony was usually considered unreliable (Bruck & Ceci, 1999; Goodman, 2006; Qin, Quas, Relich, & Goodman, 1997; Priestley & Pipe, 1997; Steller & Boychuk, 1992). A number of high profile sexual abuse cases in the 1980s and 1990s, however, led to a marked increase in young children acting as witnesses to their own alleged abuse, and the impact of this testimony lead to a surge of research interest into the competencies of children in reliably reporting details of personally experienced events (Melnyk, Crossman, & Scullin, 2007). Recent findings suggest that the competencies of children have been underestimated in the past, and the abilities of children as active players in maintaining and reporting their memories is now being acknowledged (e.g. Pipe, *et al.*; Priestley & Pipe, 1997). Existing research has illustrated that in many cases children can provide highly accurate and detailed accounts of events they have experienced, though this is not always the case (Fivush, 1997; Fivush & Shukat, 1995; Pipe, *et al.*). A multitude of factors such as the age of the child, type of event, and passage of time between experiencing and reporting an event can affect the accuracy and completeness of these reports (Leippe, Romanczyk, & Manion, 1991; Farrar & Goodman, 1992; Bruck, *et al.*, 1998; Pipe, *et al.*).

In order to ensure justice and protection for both the alleged victim and alleged perpetrator of abuse it is of paramount importance that the testimony of a child witness is as accurate as possible, whilst still containing enough detail to meet the requirements of the court. High quality reports of personal experiences from children are also essential in the clinical context, where treatment outcomes depend on

gaining an accurate and detailed picture of a child's difficulties (Mordock, 2001). If a child is not able to provide a reliable account of their experiences and difficulties then they are less likely to receive the most appropriate and effective treatment. Research into the quality of children's accounts of personally experienced events involving touch is therefore vital in order to predict how reliable their reports are likely to be in clinical and forensic contexts, and to develop ways to improve the quality of these reports.

The nature of children's memory and reporting of events

Extensive research into children's memory has revealed that under certain conditions, even very young children are able to provide accurate and detailed accounts of their experiences (Berk, 2006; Fivush & Shukat, 1995; Pipe, *et al.,* 2004 for a review). Research into children's reporting of events has grown in magnitude and complexity over the years. Studies in this area typically employ scenarios that are either known or unknown to the experimenter. Known events include staged events or events such as a doctor's visit that has been observed or documented by the experimenter, while unknown events are those that were experienced by the child prior to the study (e.g. a birthday party, first day of school). The advantage of the former over the latter is that the accuracy of the reported information can be established. Many known events, however, have been staged by the experimenter and therefore are likely to be less personally relevant to the child than an unknown past event.

Of particular relevance to the forensic context is children's reporting of personally experienced touch from an event. In testifying in alleged sexual abuse cases, a child is required to recall detailed information about the instance/s of abuse. Researchers in this area typically study events that involve either innocuous (harmless) touch or invasive touch. As with general event information, the innocuous

or invasive touch event can be known (e.g. a staged touch event) or unknown (e.g. a past medical check up, sexual abuse) to the experimenter. Again, the accuracy of reported touch information cannot be established in the latter, though it is a more valid method of studying the reporting of touch by children. Known invasive genital touch events (e.g. a medical procedure involving genital touch) allow controlled research using paradigms more similar to an abuse experience where the accuracy of reported information can be established. These alternative methodologies allow researchers to investigate different aspects of memory for touch events, but highlight the difficulties in attempting to break down and analyse the research in this complex area.

Empirical evidence for children's memory and reporting of both general event information and touch information yields similar patterns. In both cases, it has been frequently demonstrated that the accounts provided by young children in free recall can be as accurate as those of older children and adults (e.g. Fivush, 1997; Ornstein, Gordon & Larus, 1992; Priestley & Pipe, 1997; Raskin & Yuille, 1989; Steward, Steward, *et al.*, 1996). Ornstein et al. (1992) conducted a study where 51 3- and 6-year old children were interviewed after receiving a physical examination by a doctor. With both general information about the examination (e.g. measuring height and weight) and details regarding touch (e.g. checking ears, listening to heart), both groups of children were highly resistant to suggestion and reported few intrusions in the memory interviews. Children of both ages remembered most details at an immediate interview, but after time delays of one and three weeks older children recalled more details than younger children.

Although the accuracy of remembered information provided by young children is often found to be high, their spontaneous accounts are typically much briefer than are those of older children and adults when reporting general event information (Cassel,

Roebers & Bjorkland, 1996; Cole & Loftus, 1987 for a review; Pipe *et al.*, 2004; Roebers & Schneider, 2001) and information about touch (Lamb *et al.,* 2003; Lamb, Sternberg, & Esplin, 2000; Goodman, Quas, Batterman-Faunce, Riddlesberger & Kuhn, 1997; Leippe, *et al.,* 1991; Ornstein, *et al.,* 1992). For example, Steward, Steward, et al. (1996) conducted a study where 130 3-6 year old children were interviewed in four different conditions about general information and both innocuous and genital touch after paediatric visits. Few of the children spontaneously reported information details about the event (particularly touch information) in free recall, and the majority of children required more direct follow-up prompts before details were disclosed.

As demonstrated by the findings of Steward, Steward et al. (1996), additional details and clarification over and above reports provided in free recall can often be obtained through more direct verbal prompts, such as specific (e.g. "what colour was his hat?") and forced choice (e.g. "was his hat red?") questions (Brown & Pipe, 2003; Lamb *et al.,* 2007; Lamb, *et al.,* 2000; Mordock, 2001). This information, however, is often less accurate than that given in free recall both when children are asked about general event details (e.g. Leichtman & Ceci, 1995; Hutcheson, Baxter, Telfer & Warden, 1995; Powell, Thomson & Dietze, 1997) and specifically about touch that occurred in an event (e.g. Leippe *et al.*, 1991; Pipe, *et al.,* 2004). For example, Hutcheson et al. compared the effects of interviewers' use of general and specific questions on the responses of 5 to 6-year old and 8 to 9-year-old children who had witnessed live staged events (e.g. a technician breaking a projector at the school). They found that 5 to 6-year-old children's answers to specific questions were significantly less accurate than those to general questions, and suggested that the number of specific questions should therefore be restricted when interviewing children of this age. Similarly, Leippe, et al. interviewed 5-6-year-old and 9-10-year-

old children, and adults after they were administered a 'skin test' involving nine instances of innocuous touch. Both free recall and specific memory questions were posed. For the younger children in particular, more errors about touch were made in response to specific memory questions (e.g. "did he touch you with his hands?") than in the free recall stage. It is important to mention, however, that some researchers have found information provided in response to specific questions by young children to be as accurate as that provided by older children and adults (e.g. Goodman & Reed, 1986).

Given the brevity of information provided by young children in free recall, another way to elicit more detailed information about experienced events from children is to use nonverbal techniques - such as introducing props in an interview (see Pipe & Salmon, 2008 for a review). For general information, toys or models from the event may be used as cues for memory or for children to re-enact the event, and props such as dolls and drawings can be employed when asking children to clarify touch reports. As will be discussed later, this is a highly controversial area and there is mixed evidence as to the usefulness of these in interviews with children.

The next logical question to be asked by researchers is what factors influence the reports of children asked to report information from memory. Researchers have focussed broadly on children's memory processes, prior knowledge, and communication of information as major contributing factors to the quality of children's reports, which will now be discussed in more detail.

<center>Factors influencing young children's accounts</center>

Memory processes

Information at the encoding stage of memory is typically affected by the cognitive abilities of the individual processing it. The specific cognitive constraints experienced by younger children is one explanation put forward for the finding that

they are typically not able to recall and report the same quality of information as older children and adults. One theory proposes that the lack of remembered information provided by children is due to the fact that young children only attend to and therefore encode the central details of an event, and as a result offer a limited account of that event (e.g. Raskin & Yuille, 1989). Others have stipulated that young children have trouble retrieving information from memory as they do not use learned memory strategies such as rehearsal at the time information is encoded, whereas older children and adults do (e.g. Zaragoza, 1987). At encoding, factors such as an individual's stress level at the time an event is being experienced can affect how the information is stored in memory (Berk, 2006; Ceci & Bruck, 1995; Shrimpton, Oates & Hayes, 1999).

In the transition from short-term memory to long-term memory, influences such as the number of times the event is recalled and what the child is exposed to from encoding to storage can have a significant impact on what information is stored (e.g. La Rooy, Pipe, & Murray, 2005; Shrimpton, Oates, & Hayes, 1998). Repetition of details of an event, for example, can be useful as a rehearsal memory strategy. Repeated interviews, however, can lead to misinformation being reported as an increasing passage of time between the to-be-recalled event and the reporting of that event leaves more opportunity for outside influences and decay of memory (e.g. Cassel *et al.,* 1996; Ornstein *et al.,* 1992). According to researchers, however, both children and adults have more information stored in their memories than they are able to provide verbally (Berk, 2006; Saywitz, 1987). The limited amounts of information typically provided by young children in interviews, therefore, may in fact reflect a difficulty in the *expression* of this information rather than the encoding or storage of it.

Retrieval cues have also been found to have an effect on information that is being recalled from memory (e.g. Gilbert & Fisher, 2006; Price & Goodman, 1990). In particular, the type of retrieval cue used may affect the amount and accuracy of the information reported – for example, cued invitations (where the interviewee's own words are used as a cue to elicit additional information) tend to elicit more accurate information than direct questions. Young children are less likely than are adults or older children to have developed organisation and retrieval memory strategies, and as such tend to rely more on external cues (such as aid from interviewers) when recalling information, while older children are better able to independently retrieve memory details (e.g. Saywitz, 1995; Priestly & Pipe, 1997).

Knowledge

Script based knowledge of a particular event or scenario may influence a child to report information consistent with that script, rather than specific information from an isolated incident (e.g. Hudson, Fivush, & Kuebli, 1992; Hudson & Nelson, 1986). As asserted by Powell et al. (1997), both children and adults are much better at recalling details that are common to all occurrences of a similar event rather than those specific to one occurrence. For example, a child who visits the doctor regularly is more likely to remember the features common to all visits (e.g. the waiting room, the doctor's office, checking of ears and eyes) than those specific to one visit (e.g. the clothes worn by the doctor). This can become problematic in legal contexts, where an entire trial can be focused on one abuse incident out of many that may have been experienced by the child (Powell *et al.,* 1997). In such cases, the child is expected to separate each experience out and offer details of a specific incident (Ceci & Bruck, 1995; Pipe *et al*., 2004). This would be a difficult task for a young child, who is unlikely to have developed the ability to discriminate between similar experiences (Powell *et al.*; Saywitz, 1995).

Communication of information

As noted earlier, another possibility is that children are able to encode, store, and retrieve large amounts of accurate information about events, but have difficulties with communicating this information. The language skills and available vocabulary of younger children is immature and therefore limited, often making it difficult for them to comprehend verbal information that is presented to them and to articulate details held in memory (Berk, 2006). In support for this claim, research has found that both children and adults tend to provide more details and offer more complete reports nonverbally (e.g. with props) and in response to recognition cues (such as yes/no and forced choice questions) than in free recall, as mentioned above (Cole & Loftus, 1987; Leippe *et al.,* 1991; Roebers & Schneider, 2001 Steward, Steward *et al.,* 1996).

In addition, motivational issues (such as shame, embarrassment, guilt, or fear) can lead to children giving non or limited disclosure of details, or even false details of an event (Hershkowitz, Lanes, & Lamb, 2007; Saywitz, Esplin & Romanoff, 2007; Saywitz, Goodman, Nicholas & Moan, 1991). These factors are particularly relevant to personal and often traumatic events such as sexual abuse where there is frequently considerable secrecy and sensitivity surrounding the events, and sometimes even threats made towards victims by perpetrators (Saywitz, Esplin, *et al.*). Young children may also lack the level of understanding required to identify certain behaviours as abusive, in which case they would not necessarily consider reporting them (London *et al.,* 2005).

Further, factors such as the nature of the child's relationship to the perpetrator and the socialisation of how children should communicate with adults can also influence the quality of information reported by children (Hershkowitz *et al.,* 2007; Mordock, 2001; Pipe *et al.,* 2004). Hershkowitz et al. found that more than half of

the alleged sexual abuse victims in their sample delayed disclosure of the abuse for one to two years due to embarrassment and shame, the perpetrator being an authority figure, and a fear of adults' reactions. Spontaneous disclosure of the abuse decreased significantly when the children expected a negative reaction from their parents.

Children's memory for an event may be affected by the specific cognitive abilities of the child, the intrusion of external details, and the type of retrieval cue used. Existing knowledge may also influence reporting through the recall of scripts relevant to all event experiences rather than a single incident. Finally, a child's ability and motivation to communicate certain details will also influence what is reported. In both forensic and clinical contexts, these factors can ultimately affect justice for the alleged perpetrator and the alleged victim, as well as potentially affecting the treatment outcome and wellbeing of those involved.

It is necessary, therefore, that any system employed for interviewing children about sensitive subjects such as sexual abuse takes into consideration the difficulties typically experienced by children when attempting to recall details from memory, as well as the various factors that may impact on the reporting of this information. In addition, the ways in which children are asked about experienced events must be at an optimal level in order to obtain accurate and detailed information.

Methods of interviewing young children about events involving touch

Standard interviewing protocols

In most countries (including New Zealand) evidential interviews in forensic investigations are usually conducted by a mental health professional (such as a psychologist or social worker) or a police officer. The interview is typically the most important piece of forensic information obtained from a child, as, as mentioned earlier, there is often no physical evidence or other witnesses to the alleged abuse. The ultimate aim of these interviews is to gather information from the child witness

about the event – often to be used as evidence against an alleged perpetrator. It is of paramount importance, therefore, that such interviews be of the highest quality possible, conducted by experienced professionals who are trained in the most effective techniques. In addition, it is important to conduct an effective interview the first time a child is questioned to avoid delay effects and the influence of external factors (e.g. conversations about the event, media reports) on the accuracy of reported information (e.g. Cassel *et al.,* 1996; Ornstein *et al.,* 1992).

Investigation into the most effective ways of interviewing children about events they have experienced has been steadily progressing over the last 20 years (Goodman, 2006). Several interview strategies have consistently been found to improve the amount and quality of information reported by children in interviews, and are recommended by researchers to be employed in forensic and clinical interviews with young children.

Continual rapport building throughout the interview has been found to be vital in order to reduce anxiety and improve the disclosure of sensitive information from a child (Lamb & Brown, 2006; Pipe & Salmon, 2008). According to research, this is most effectively achieved by the interviewer introducing themselves and their role, explaining the purpose of the interview, and asking some light questions in a non-threatening manner (Raskin & Yuille, 1989; Saywitz & Camparo, 1998). The encouragement of an interviewer that a child say 'I don't know' to an answer they are unsure of rather than attempting an answer has been found to significantly increase the accuracy of responses, though this typically leads to a decrease in detail through a higher frequency of "I don't know" responses (Lamb & Brown, 2006; Steward, Steward *et al.*, 1996).

The use of open-ended questions (e.g. "and then what happened?"), invitations (e.g. "can you tell me more about that?") and other such prompts (e.g. facilitators

such as "mmhmm") in interviews with children is strongly encouraged by researchers in this area. Such utterances target recall memory (as opposed to recognition memory), and as a result accuracy rates are typically found to be higher in response to these types of utterances (Bruck & Ceci, 1999; Bruck *et al.,* 1998; Lamb *et al.*, 2000; Roberts & Powell, 2001). Several authors suggest that general open-ended questions always be employed first, followed by more directive questions only if necessary for clarification (Cederborg, Orbach, Sternberg & Lamb, 2000; Lamb *et al.*, 2007; Orbach & Lamb, 2000; Steward, Steward *et al.*, 1996). This has been labelled the "funnel approach" by some researchers (e.g. Pipe & Salmon, 2008).

The NICHD protocol

These findings and suggestions have lead to the development of several empirically-based interviewing protocols for use in investigative interviews with children. One in particular that has been exposed to empirical scrutiny is the National Institute of Child Health and Human Development (NICHD) protocol (Orbach *et al.,* 2000). The protocol describes in detail each stage of the interview and in what sequence the stages should be carried out. The introduction and rapport building phases are designed to enable the child to become familiar and comfortable with the interviewer and their surroundings, as well as the task at hand. As part of the introductory phase, it is emphasised to the child that they are experts of their own experiences and that the interviewer doesn't know the answers. It is checked that the child understands the difference between what is true and untrue, and the importance of telling the truth. The child is also informed that it is acceptable for them to tell the interviewer if they do not understand a question (to address any issues with language comprehension), do not know the answer, or disagree with the interviewer - rather

than giving an inaccurate response because the child believes an answer is expected of them (Lamb & Brown, 2006, Steward, Steward *et al.*, 1996).

The rapport building phase involves the interviewer asking the child to tell them about something they like to do and requesting emphasis if the child does not provide sufficient information. This is followed by training in episodic memory, where the child is asked to talk about an event that they experienced recently. When questioning the child about the specific event, they are encouraged to provide as much information in free recall (in response to open-ended prompting) as possible. Further prompts (e.g. "and then what happened?") are used to elicit further recall. This is not only done to increase rapport, but also to train the child to answer questions in the way that will be expected of them in the substantive part of the interview.

If an allegation of abuse is made by the child (after asking them why they were brought to the interview), the substantive phase begins. The child is asked open-ended questions (e.g. "tell me everything about that") until their memory is apparently exhausted. Direct questions (e.g. "You said you got in a car. What colour was the car?") are only used if crucial details are still missing after exhaustive free-recall prompting, and limited option-posing questions (e.g. "did they touch you?") may be used to address any details which are still not clarified. Suggestive and leading utterances are strongly discouraged by the protocol, as they are associated with less accurate reports.

Evaluation of the NICHD Protocol has demonstrated that its use in interviews with children has resulted in more detailed and accurate reporting of information compared to interviews where alternative or no protocols are employed (Lamb *et al.*, 2007; Orbach *et al.*, 2000; Sternberg, Lamb, Orbach, Esplin, & Mitchell, 2001). The procedures outlined in the protocol are therefore highly recommended by many

researchers, who emphasise the importance of training by professionals working with children who have allegedly been sexually abused (Hershkowitz *et al.,* 2007; Lamb & Brown, 2006; Lamb, Orbach, *et al.*).

Evaluation of current interviewing practices

Research into the typical interviewing styles in forensic and clinical contexts, however, has demonstrated that in many countries these recommendations are rarely followed by professionals - even those highly trained in such practices (Cederborg *et al.*, 2000; Lamb *et al.*, 2007; Pipe *et al.*, 2004). Several researchers have highlighted the inconsistency in the strategies used by interviewers and the lack of a universally accepted and used protocol as concerning (Fisher & Schreiber, 2007; Steward, Steward, *et al.,* 1996; Westcott & Kynan, 2006). Behaviours such as poor rapport building, disbelief, and an inconsistent interviewer style in interviews with children have repeatedly been shown in the literature to decrease the accuracy of reporting (Bruck & Ceci, 1999; Fivush & Shukat, 1995; Roberts & Powell, 2001).

Although research suggests that the most accurate information is provided in response to open-ended questions (Cederborg *et al.,* 2000; Lamb *et al.*, 2000), many interviewers have been found to consistently ask closed-ended suggestive (e.g. "I heard that…?"), leading (e.g. "he touched you didn't he?") and specific (e.g. "did you go there?") questions (e.g. Lamb *et al.*, 2007). This finding is widespread, with studies in several countries showing that forensic interviewers rarely use open-ended prompts, even when they have received sufficient training in effective interviewing (e.g. Berresheim & Weber, George & Clifford, as cited in Fisher & Schreiber, 2007; Milne & Bull, 2006). Westcott and Kynan (2006) conducted a study on interviewer practice in investigative interviews in England and Wales with children aged 7 to 12 years. They reported a high variability in interviewer style and structure of the interviews, but several problems with the interviewing practices were consistently

found. In over half of the interviews the interviewers interpreted the information in a distorted manner, in many there was a lack of rapport and efforts to engage the child, and several interviewers demonstrated an inappropriate amount of disbelief toward children who alleged abuse. This style of interviewing has been attributed to the fact that the training of forensic interviewers has mainly focussed on interviewing suspects, and there has been a lack of learning and experience around interviewing the witnesses and victims of crime (e.g. Milne & Bull, 2006).

These findings have problematic implications for the forensic context, where the integrity of evidence provided in court may be adversely affected (Gumpert, 2007). Bruck et al. (1998) have asserted that due to the leading and suggestive nature of many forensic and clinical interviews, some false disclosures of abuse by children are in fact the result of problematic interviewing practices. Previous alleged victims of sexual abuse have admitted they knowingly lied about abuse in past forensic interviews, and this appears to be due to the coercive nature of the interview (Goodman, 2006).

The interviewing procedure in New Zealand is similar to that of the NICHD protocol (K. Wilson, personal communication, 19 November, 2008) and considering the positive evidence on the effectiveness of the NICHD protocol in eliciting quality reports from children, this is promising. There is room for improvement, however, particularly with children who are less able to verbally express information, such as younger children or those who are less motivated to speak in an interview.

As illustrated, the use of these techniques in investigative interviews can have a profoundly negative effect on children's reports of a witnessed event. Ultimately, the ways in which forensic interviews are carried out may in effect contribute to the freedom of a perpetrator of abuse, or the conviction of an innocent person accused of perpetrating abuse. Additionally, it may also affect the psychological treatment

outcome for a victim through the lack of a tailored treatment plan, deprive a child of necessary psychological intervention if abuse is undisclosed, or create unnecessary trauma for the child giving evidence (Mordock, 2001). These points exemplify the potentially costly effects of employing poor interviewing strategies in evidential interviews with child witnesses and the need for an improvement in the ways children are interviewed about events, particularly those involving touch.

The open-ended nature of interviewing strategies such as those endorsed by the NICHD protocol, however, may make it more difficult for professionals working with alleged sexual abuse victims to obtain details sufficient enough to meet the requirements of the courts and, in clinical contexts, for sufficient psychological treatment planning. In the past, professionals working with victims of sexual abuse who used closed, leading and suggestive questions defended this style of interviewing as necessary for eliciting a disclosure of abuse from a child, and for obtaining sufficient information about the abuse once disclosed (e.g. Saywitz, 1987). In addition, the developmental and motivational issues often faced in investigative interviews with children may not be completely rectified by the protocol. A child who has limited verbal abilities, for example, may not benefit as much from the protocol as a verbally proficient child might – as the protocol relies largely on the child being able to verbalise their experiences. Along with an empirically based, structured protocol for interviewing, additional tools may be needed to elicit details from young children that may be difficult for them to verbally report (Melnyk *et al.,* 2007).

Props

As discussed earlier, certain factors relating to the strategies used in some investigative interviews often affect the nature of information reported. Verbal interviews such as those following the NICHD protocol are designed to tap recall

memory - from which reported information is often highly accurate (e.g. Fivush, 1997; Priestley & Pipe, 1997; Raskin & Yuille, 1989). Less detail is frequently provided in such interviews, however, as young children typically have difficulty reporting large amounts of verbal information in free recall (Basden, Basden, Devecchio & Anders, 1991; Cole & Loftus, 1987; Leippe *et al.,* 1991; Roebers & Schneider, 2001).

Props, such as toys, dolls and scale models can be employed in interviews with children and act as visual cues, targeting information stored in recognition memory and thereby assisting with a more complete account of an event (Gee & Pipe, 1995; Pipe & Salmon, 2008; Salmon, 2001 for a review; Steward, Steward *et al.*, 1996). The effectiveness of props in certain situations, however, appears to depend on the type of prop and how it is presented, as well as the age of the child it is being used with. Gee and Pipe (1995) examined the effectiveness of reinstating real objects from the event in interviews about a staged event where children aged 6 and 9 years either participated as or observed a magician's assistant. They found that the number of details reported was enhanced with the objects, and using the objects in combination with specific and misleading questions increased the accuracy of children's responses to them, regardless of age. It is likely that props such as these act as cues for the retrieval of information from memory, making it easier for children to recall details than if required to spontaneously report them (e.g. Saywitz, 1995).

Depending on the age of the child, the use of props in interviews also has the potential to assist in overcoming language and vocabulary restraints by allowing children to report information nonverbally. For example, children can use the props to point to body parts or demonstrate an action, without needing to verbally report the information (Everson & Boat, 1994). According to Priestley and Pipe (1997), props may be useful for the retrieval of information from memory, as well as

communication of that information. They found that with 5 to 6 year old children who participated in a staged event, those interviewed with scale models and toys representing items from the event reported much more information verbally than behaviourally - suggesting that the props acted as memory cues for that information. Props have also been found to assist in overcoming motivational issues such as embarrassment and shame, by allowing children to 'show' rather than 'tell' what happened (Pipe & Salmon, 2008; Steward, Steward *et al.*, 1996). Props such as dolls and other toys may be particularly useful for this, where the child (if old enough to use the prop in a representational way) can use the items to symbolise themselves or aspects of the event (Everson & Boat, 1994; Salmon, 2001).

It is important to differentiate between props used only as visual cues for children in interviews and those which children are able to interact with. It is possible that props as visual cues (such as scale models from the event) may be effective for the *recall* of information, while being able to interact with the props (as with dolls and other toys) may also assist with the *communication* of information, particularly where children may have language or motivational difficulties in reporting information about experienced events.

Despite these advantages, researchers have identified certain issues with the use of props in some contexts. In an overview of research on the use of props to date, Pipe and Salmon (2008) describe several issues that may be presented through the use of props in evidential or clinical interviews. Depending on the age of the child they are presented to and the manner in which they are presented, some props (such as dolls and other toys) may symbolise play and exploration for a child, which in turn may distract them from the task of talking about the event. Further, there is a risk of introducing a 'fantasy' aspect into the interview; thereby potentially decreasing the accuracy of reports by children who may be reporting details from their imagination

rather than their memory (see also Everson & Boat, 1994; Pipe & Salmon, 2002). While props may increase the number of accurate details provided by a child, they may also lead to an increase of *inaccurate* information about an event (Melnyk *et al*., 2007). Again, the effectiveness of props in an investigation with children appears to depend on the type of prop, how it is used, and the context in which it is utilised (Gee & Pipe, 1995; Priestley & Pipe, 1997; Salmon, Bidrose & Pipe, 1995).

Dolls

One type of prop that has been commonly employed to assist in forensic investigations and therapeutic assessments and interventions with children is dolls. In some places dolls are no longer used in investigative interviews, however if used in a structured and strategic way there is potential for them to be utilised once again. Research into the use of dolls in investigative interviews is mixed as to whether anatomical (with sexual body parts) or non-anatomical dolls (neutral or clothed) are used or referred to, but for the purposes of this study dolls will be discussed here in the general sense. As suggested by Samra and Yuille (1996), anatomically neutral dolls may be more effective in forensic investigations by having the advantages of a prop (e.g. overcoming cognitive and motivational issues) yet avoiding the controversy and potential risks associated with the employment of anatomically detailed dolls.

According to Steward, Steward *et al.* (1996) dolls have been found to be employed in up to 90% of sexual abuse investigations by both police interviewers and mental health professionals in the USA. In New Zealand, however, AD dolls have not been used in investigative interviews since 1989 (W. Kelly, personal communication, November 7, 2008). After an allegation is made by a child, clothed rag dolls may still be offered for a child to clarify details of an allegation if needed (K. Wilson, personal communication, November 19, 2008). This variation in the use

of dolls in different countries is likely to be due to the controversy caused by differing findings and opinions on the usefulness of anatomical dolls in sexual abuse investigations.

Researchers have suggested that dolls may be useful as a cue for the retrieval of details from memory, as a nonverbal means of communication (particularly for younger children who have limited language abilities), and as an alternative method of expressing sensitive or embarrassing details in investigative interviews (Ceci & Bruck, 1995; DeLoache & Marzolf, 1995). They can be utilised as a demonstration tool by young children who have limited vocabulary or are embarrassed or ashamed to report information verbally, for example (Everson & Boat, 1994).

Others suggest that due to the level of cognitive demand imposed on younger children by the dolls they should not be used with children under the age of five years, as they may introduce errors into their reports (DeLoache & Marzolf, 1995; Pipe & Salmon, 2008). As asserted by DeLoache and Marzolf (1995) the concept of *dual representation* (the ability to see something as a representation of the self as well as an entity in it's own right) has typically not developed until after the age of four, and therefore dolls should not offer any additional assistance with children of this age (at least as demonstration aids). Again, research findings have suggested that due to the typically strong associations of dolls with play in the early years of a child's life, they may not be able to distinguish between a doll as an aid to portray reality and a play thing to elicit imaginary details in an investigative interview (Everson & Boat, 1994; Pipe & Salmon, 2008).

Empirically, there is mixed evidence as to whether the use of dolls in investigative interviews is in fact useful or whether it negatively affects the accuracy and completeness of children's reports. Goodman et al. (1997) interviewed 46 children aged 3 to 10 years after they had experienced a stressful medical procedure.

When interviewed with dolls, the older (over 5 years of age) but not younger children reported more detailed and accurate information about the procedure. Similarly Saywitz et al. (1991) interviewed a group of 5 to 7 year old girls after a doctor's examination where some experienced genital touch. When interviewed with the dolls, the children reported twice as much accurate information about the examination than with free recall alone, though some bodily touch (e.g. on the neck) was difficult for children to report. Most genital touch was not reported with free recall, but consequently reported with direct questioning and dolls.

Conversely Thierry, Lamb, Orbach and Pipe (2005) examined 178 video interviews of alleged sexual abuse victims aged 3 to 12 years where dolls were used in play sessions in combination with direct and open questions. They found that for both older and younger children (who were allowed free access to the dolls) neither the amount nor quality of information was enhanced with the dolls. Those children aged 3 to 6 years tended to demonstrate information using actions rather than verbally reporting it, while those aged 7 to 12 years reported more information verbally than behaviourally. As this was a quasi-field study, however, the accuracy of details provided could not be determined. The findings are consistent, however, with research demonstrating that children tend to report more information verbally and with their own bodies than with dolls. Bruck, Ceci, Francouer and Renick (1995) found that when 3 year olds were just as accurate at demonstrating touch experienced in a medical examination with their own bodies as when given the opportunity to indicate touch on a doll. DeLoache and Marzolf (1995) found that more detailed information was reported verbally than with freely accessed dolls by 2 ½ to 3 year olds in interviews after play sessions where several instances of touch occurred. As suggested by the authors, this is likely to be due to the inability of children of this

age to understand the concept of dual representation and apply it to the dolls (see also Lamb, Hershkowitz & Sternberg, 1996).

Most research in this area to date has focussed on the effectiveness of dolls with preschool-aged children, and it appears that dolls may not be particularly effective as a tool for enhancing the reports of children of this age. There is some evidence, however, that when used with children aged 5 years and above the amount and accuracy of reported information can be enhanced (e.g. Goodman *et al.*, 1997; Gordon *et al.*, 1993; Pipe & Salmon, 2008). As mentioned earlier, this may in part be a result of older children being able to grasp the concept of dual representation. Further, dolls may be used as a nonverbal means of communicating embarrassing or shameful information. More research is clearly needed, however, into the conditions under which dolls are most effective and the extent of their utility in interviews with children aged 5 years of age and over. The way the doll is presented to the child appears to be particularly important: if free access to the doll is allowed this may negatively impact on the accuracy of information reported – even for children over 5 years of age.

Despite some promising findings, professionals working in countries that employ dolls in forensic and clinical contexts are typically not well trained or experienced in their use, and no structured protocol for the use of dolls in interviews is available (Everson & Boat, 1994; Ceci & Bruck, 1995). As mentioned earlier, dolls are no longer employed in forensic investigations in New Zealand, which may be in order to avoid the issues caused by the lack of a structured method for their use (such as the reporting of inaccurate information, or the incorrect interpretation of reports resulting from the assistance of dolls). Of particular concern is when such information is then used as evidence in sexual abuse investigations, or as guidance for therapeutic intervention. Theorists and researchers have suggested that the employment of dolls

in investigative interviews by individuals who are not well trained or experienced in their use can lead to false deductions or reports of abuse, which has been demonstrated in several studies (Bruck & Ceci, 1999; Ceci & Bruck, 1995; Steward, Steward *et al.*, 1996). Clearly this is a serious issue amplified by the fact that in many countries there is no commonly accepted and utilised protocol for the use of dolls in investigative or clinical interviews, and existing norms comparing the behaviours of abused and non-abused children's behaviours with the dolls are inadequate (Ceci & Bruck, 1995; Everson & Boat, 1994).

Nevertheless, it appears that dolls can potentially be a useful tool in addition to verbal evidential and clinical interviews where children's reports of touch need clarification or expansion. This is provided, however, that they are employed in conjunction with a structured, empirically based protocol and only used by highly trained and experienced interviewers (Everson & Boat, 1994; Pipe & Salmon, 2008). Although anatomically detailed dolls are no longer used in sexual abuse investigations in New Zealand, cloth dolls may be provided to a child for demonstration of an act that is difficult to verbalise. With the apparent effectiveness of the NICHD protocol in ensuring accurate reporting of information, there is potential that dolls may be able to play a larger part in forensic interviews once again. They are likely to be particularly successful with children 5 years of age and older, who may lack the motivation to verbally report certain information, but are more likely to have the cognitive understanding to be able to use the dolls effectively. Again, however, this depends on the way they are presented to children in the interview (see Salmon, 2001).

Human Figure Drawings

A human figure drawing (HFD) is a line drawing of a human figure (also known as a body map, human figure or body diagram, or a body drawing), that can be

gender neutral or specific, clothed or unclothed (and sometimes anatomically detailed). Since they have been introduced only recently, the use of HFDs is not currently widespread and they are used in NZ in approximately 1-2% of investigative interviews for determining or clarifying the location of touches in cases of sexual abuse (K. Wilson, personal communication, November 19, 2008). Although only recently introduced into the research literature, there is evidence that HFDs may be promising as an additional or alternative tool to the use of dolls in investigative interviews with children. As with dolls, HFDs may assist in overcoming the linguistic, cognitive, and motivational issues associated with verbally interviewing children through offering a nonverbal means of communication (Brown *et al.,* 2007, Salmon & Pipe, 2000).

Unlike other props (such as dolls and toys), however, HFDs do not have strong cognitive associations with play and fantasy for children, and there are limited opportunities for distraction through interaction and exploration of the HFDs (Willcock, Morgan & Hayne, 2006). As a result, the use of these drawings in forensic contexts is much less likely to lead to false interpretations of abuse by professionals or false reports of touch by children (Willcock, *et al.*). As suggested by Willcock et al., however, as with dolls the representational nature of the drawings may not be well understood by children under 5 years of age, who have limited cognitive maturity. They also therefore may have more utility with older children, who can grasp this concept well but who may still be faced with linguistic and motivational issues in purely verbal interviews.

To date, only four known studies have been conducted using human figure drawings as tools in investigative interviews with children. Willcock et al. (2006) conducted a study where 5 to 6 year old children visited a fire station and experienced five instances of innocuous touch (for example, the fireman touching the

child on the head when putting the hat on). The children were then interviewed with the assistance of human figure drawings, and were found to be very poor at using them to report touch - regardless of the delay between the event and the interview. There was no control group used for comparison in this study, however, and it could not be determined whether the low reporting of touch was due to the use of the HFD or other uncontrolled factors.

Brown et al. (2007) staged an event where 5 to 7 year olds experienced innocuous touch and were subsequently interviewed. Reports of touch were compared between verbal interviews, interviews using HFDs, and interviews using HFDs with instruction (where children were trained in using the HFD through instruction and correction). They found that the majority of children provided new details in both conditions where presented with the HFD. Approximately half of the reported information was inaccurate, however. This was attributed to the fact that the drawings were only introduced at the end of the interview, and children were not asked to verbally clarify where they had pointed.

There have been two known studies assessing the effectiveness of human figure drawings in interviews with children who had allegedly experienced sexual abuse. In a study by Aldridge et al. (2004), ninety 4 to 13 year old alleged victims of sexual abuse were verbally interviewed using the NICHD protocol, after which they were interviewed with the assistance of a HFD. Approximately 86 additional forensically relevant details were provided in response to the introduction of the HFD, and it was reported that the drawings were most effective when used with children aged 4 to 7 years of age.

Similarly Teoh, Yang, Lamb & Larsson (in press) examined the use of the NICHD protocol with HFDs in previously conducted interviews with alleged sexual abuse victims aged 4 to 13 years of age. They found that use of the HFDs lead to

reports of new touches, as well as elaborations of touches already mentioned for children of all ages (though were particularly useful in clarifying reports made by children aged between 4 and 7 years). Despite these promising findings, because both this and the study by Aldridge et al. (2004) were field studies of alleged abuse, the event details could not be controlled and therefore the accuracy of reported information could not be measured.

As demonstrated above, the current literature on the potential use of HFDs in investigative and clinical interviews with children is highly limited. There is promising evidence, however, that in certain contexts these props can be a useful tool in facilitating children's memory reports of an event they have experienced. More research is clearly needed to investigate this further.

The current study

As discussed above, there are several limitations with the current literature on the use of props in memory interviews with children. Research into the use of dolls in investigative interviews with children has produced mixed findings, and despite their widespread use, relatively little is still known about the real utility of dolls in assisting the retrieval and reporting of experienced events, particularly those involving touch. Human figure drawings have only been introduced relatively recently, and despite some promising findings, much more research is needed into the effectiveness of these in improving the quality of children's accounts of experiences involving touch. In addition, no studies to date have compared the usefulness of dolls and HFDs with a purely verbal interview as a control measure (Steward, Steward *et al.*, 1996), which would offer a richer and more valid picture of the effects of these props on children's reporting of events.

Several studies use methods that have limited applicability to contexts outside of research. For example, some studies have used video or audiotapes to portray an

event to children, where they have merely observed a situation rather than experiencing it (e.g. Cassel *et al.,* 1996). According to research, children's event reports are significantly more accurate and detailed when they actively participate rather than simply viewing it (Gobbo, Mega & Pipe, 2002; Tobey & Goodman, 1992; Murachver *et al.*, 1996). The current study employs a novel event where the child is personally involved, making it more realistic and therefore more applicable to forensic and clinical contexts, as well as more memorable for the child (e.g. Fivush & Shukat, 1995).

In order to assess the utility of props when combined with a structured, empirically sound protocol, the NICHD interview protocol will be employed in the present study. The NICHD protocol was chosen as, although similar to some other interviewing styles (such as the Narrative Elaboration Technique), it utilises the child's own reports as memory cues – as a result being a more valid method of information gathering (Pipe Orbach, *et al.,* 2007). The props will also be presented in a more controlled way than in other research, giving the children restricted access to the dolls and drawings (by presenting them only for clarification rather than exploration) only after mentions of touch are made. It is expected that is will reduce the amount of inaccuracies made in the information reported.

Though one study has been conducted investigating the amount of information reported in interviews with the NICHD protocol and HFDs (Teoh *et al.,* in press), there is no known research into the *accuracy* of information reported in interviews where a combination of this protocol and the drawings is used. In addition, dolls are scarcely used in New Zealand (K. Wilson, personal communication, November 19, 2008), and their use is varied in other countries. No studies to date have investigated the effectiveness of dolls in interviews following the NICHD protocol, however, and

there is potential for this to contribute to the reintroduction of dolls into investigative interviews.

The present study compared children's memory reports of a staged event involving touch in a control interview condition (verbal interview without props) and two experimental conditions (interview with HFDs and interview with dolls).

Aims of the current study

The current study aimed to investigate the extent to which certain interview methods could improve the amount of information provided by children aged 5 to 6 years, without compromising the accuracy of their reports. The study also aimed to assess the utility of both dolls and human figure drawings as tools when used to clarify reports of touch rather than presented freely to children, relative to verbal interview alone.

Hypotheses

The primary hypothesis was that significantly more general event information would be provided by children in interviews with the dolls and HFDs compared with purely verbal interviews.

It was also expected that more touch information specifically would be reported in the props conditions than the verbal condition, as participants would be able to point to locations of touch on the HFDs or dolls instead of having to verbally describe the touch or location of it.

It was also anticipated that due to the strict adherence to the NICHD protocol in the current study and the general nature of children's memory that the accuracy of information would be high in all conditions.

Finally, it was expected that the information reported with HFDs and dolls would be just as accurate as information reported in the verbal condition as the props were presented in a restricted way following an empirically sound protocol.

Method

Participants

Participants were 53 children aged 60 to 84 months (*M* = 73.92, *SD* = 7.02 months). There were 26 males (*M* = 73.42, *SD* = 7.49 months) and 27 females (*M* = 74.41, SD = 6.64 months). Sixty-nine children participated in the event, matched for the interviews by age and gender. Due to attrition through absences from school at the time of the interviews, 55 were subsequently interviewed. There were 12 males (*M* = 71.83 months) and 15 females (*M* = 73.13 months) in the *verbal* condition; 6 males (M = 75.00 months) and 8 females (*M* = 76.5 months) in the HFD condition, and 8 males (*M* = 74.63 months) and 4 females (*M* = 75.00 months) in the *dolls* condition. Though there was some discrepancy in gender between interview conditions due to attrition after the event, an independent samples t-test revealed that these gender differences were non significant. Two interviews could not be used in the data analysis, as one child provided no information and one denied taking part in the event.

Ethical approval for the study was gained through the Victoria University Human Ethics Committee. Children were recruited through a local primary school, and written parental consent was gained for each child before participation. Verbal consent was gained from each child before the event and interview.

Design

This study utilised a between-participants experimental design. The independent variable was the interview condition, which had three levels: verbal interview, verbal interview with dolls, and verbal interview with human figure drawings (HFDs). These three interview conditions were compared with respect to the amount and accuracy of information reported by participants. There were three dependent variables: total event information, information about touch, and errors.

Materials

Event.   The event, 'Visiting the Pirate' consisted of four stages, each with an overarching goal. Props present during the event were a telescope, a fishing net laid out on the floor, and four panels depicting a beach scene. The experimenter who was acting as 'The Pirate' wore striped pants, a shirt and vest, and a bag with a sword attached. Props used in the event were the children's pirate clothes (striped pants, a purple vest, a red sash and a multicoloured scarf), a yellow anklet with a bell, a badge and stickers, a bin with a small treasure box inside and a yellow sheet covering it, and a map drawn on paper and cut into pieces.

Interviews. Two A4 black and white line drawings of a person either wearing a singlet and skirt (female) or singlet and shorts (male) were used in 14 of the interviews for elaboration of reports. Two custom made dolls (male and female) measuring approximately 40cm by 12cm and both wearing short light blue overalls were used in 12 of the interviews. Copies of the drawings and photographs of the dolls can be found in Appendices A and B.

Procedure

The principal of a local primary school was contacted by the experimenters, and agreed to allow the study to take place at the school (see Appendix C for the Principal's letter). Approximately 80 information letters were sent out to parents and guardians of all students five to seven years of age who attended the school (a copy of this letter and the accompanying consent form can be found in Appendix D). Consent forms were delivered back to the school office, where they were picked up by the experimenters.

For each day of data collection, one experimenter was assigned to conduct the event or interview, and the other to collect participants from their classrooms and return them at the commencement of the event or interview. The allocation of the

children to each experimenter was made with regard to classroom, and there were equal numbers of males and females assigned to each experimenter. Each participant was individually collected from their classroom, taken to the room where the event or interview was held and returned to their classroom upon completion of the event or interview.

Event. The event, 'Visiting the Pirate' was originally developed by Murachver et al. (1996), and adapted by La Rooy, Pipe, and Murray (2007). The event used in the current study is a modified version of the latter, with the incorporation of specific instances of touch. Prior to the event, the experimenters said to the child: "your mum and dad said you can help me do some fun things today", and then "you are going to visit a friendly pirate" if queried by the child. The event was conducted in four stages, each with an overarching goal: 'getting the pirate badge', 'getting the pirate sticker', 'getting the pirate stamp' and 'getting the pirate tattoo' (see Table 1 for the event structure). The event contained a total of twelve instances of innocuous touch (e.g. holding the child's shoulders), and took approximately 8-10 minutes to complete. See Appendix E for the event script.

Table 1.

Event structure

Stage	Stage Goal	Actions	Objects	Touch
1	Getting the Pirate Badge	Dressing	The pirate clothes (pants, vest, sash and scarf)	
		Turning into a pirate		Holding child's shoulders
		Getting the badge	The pirate badge	Pinning the badge on child's shoulder
2	Getting the Pirate Sticker	Getting the anklet	The pirate anklet	Putting the anklet around child's ankle, then around the other ankle
		Learning the dance, skipping in circles		Linking arms with child, tapping feet together with child's feet
		Getting the sticker	The pirate dance sticker	Putting the sticker on child's hand
3	Getting the Pirate Stamp	Learning the pirate salute, saluting on forehead		Banging fist on top of child's fist, underneath child's fist, and together with child's fist; patting child on back
		Saying 'ARRR'		
		Getting the pirate stamp	The pirate stamp	Putting the stamp on child's hand
4	Getting the Pirate Tattoo	Making the map	The pirate map	
		Finding the treasure box	The treasure box	
		Choosing a tattoo	The pirate tattoo	Putting the tattoo on child's arm

Interviews. Participants were balanced across gender and class and randomly assigned to one of the three interview conditions, and interviewers were balanced

across the event and interview. Interviews were conducted 7-10 days after each child had participated in the event. Each participant was collected from their classroom and told by the experimenter "I'm just going to take you to someone who will ask you a few questions, if that is okay?". The room in which the interviews were conducted was different to the room where the event had taken place, and the 'interviewer' was always different to the 'pirate'. Each interview was audio and video taped.

Interviews were based on the National Institute of Child Health and Development protocol (Orbach et al., 2000). The interview began with an introductory phase, where the interviewer introduced themselves and clarified the purpose of the interview. This was followed by a rapport building stage, where the aim was to put children at ease and clarify what was expected of them in the interview. The child was asked to tell the interviewer about a 'fun thing' they had done lately. Subsequently, participants were asked to tell the interviewer "everything they could remember about [the event] from the beginning to the end". In each interview, invitations (e.g. "tell me more about that") were provided until the child's memory was apparently exhausted. Cued invitations (where something said by the interviewee was subsequently used as a memory cue to elicit more information, e.g. "you said X. Tell me more about that"), and direct questions (e.g. "where did she put X?") clarified verbalisations. In the HFD and doll interviews, invitations and cued invitations followed the initial free recall stage *until* the child mentioned an instance of touch, at which point the prop (HFD or doll) was introduced and further invitations, cued invitations and direct questions were asked until the child's memory was apparently exhausted.

Each interview took approximately 10-15 minutes to complete. A detailed version of the protocol used in the interviews can be found in Appendix F. After the

interview, each participant was invited to choose two stickers to keep in appreciation of their participation.

A letter was sent to the parents/guardians of each participant to explain the purpose and findings of the study. This can be found in Appendix G.

Coding

The interviews were transcribed from audio and videotape. Interviews were then coded using a detailed system developed by the experimenters (see Appendix H), following the work of other researchers (e.g. La Rooy, *et al*., 2007). Each utterance from the interviewer was classified as an invitation, cued invitation, or direct question and each item of information provided by participants was coded according to whether it followed an invitation, cued invitation or direct question. In addition, information provided by participants was coded as either verbal or nonverbal in each condition. In both the verbal and props conditions demonstration on the self was coded as a nonverbal report, as was demonstration on the prop in the HFD and doll conditions. A response was coded as nonverbal only if the child did not report the item of information verbally at the same time (e.g. "it went *there*" while pointing to hand would be coded as a nonverbal response, while "it went on *my hand*" while pointing to hand would be coded as a verbal response).

Information provided by the participants was coded according to whether it referred to an 'action' (e.g. "we found") or 'object' (e.g. "the treasure"), and whether it was a 'touch' (e.g. "*she* put it") or 'other' (e.g. "*I* put it") detail. Participants were also given credit for each mention of a location for an instance of touch (e.g. "on my hand"), and for each elaboration of a detail (e.g. "the pants [object] were stripy [elaboration]"). Errors were coded as either distortions (where the child is referring to actions and objects that were part of the event, but incorrect) or intrusions (where details that were not part of the event were reported). There were approximately 126

codes in total, with 23 touch codes. Irrelevant, ambiguous or unclear information was ignored, as well as any repetition.

Reliability

Two coders independently coded 15 (29%) of the interviews randomly selected from each of the three conditions. The average reliability across conditions, calculated as agreements/(agreements + disagreements) was 89% (range 85% to 97% across conditions).

Results

Interviewer questions

The NICHD protocol stipulates that open-ended invitations should be exhausted in interviews and followed by increasingly less open questions only to obtain essential information (Hershkowitz *et al.,* 2007). To assess whether the NICHD protocol was followed in the present study, the proportion of open ended, direct, and suggestive questions used in each interview condition were calculated to examine the extent to which these questions were similar to those typically used in interviews following the NICHD protocol (the majority of questions open ended, a minority direct, and little or none suggestive).

In the *verbal* condition, 83% of the questions were open ended, 17% were direct, and 0.01% were suggestive. The *Human Figure Drawing (HFD)* condition contained 71% open ended questions, 29% direct questions, and no suggestive questions. Finally, in the *dolls* condition 69% of questions were open ended, 31% were direct, and 0.01% were suggestive. This follows the questioning guidelines as suggested by Hershkowitz et al. when describing the protocol, as an all conditions most of the questions were open ended, fewer were direct, and very few were suggestive.

A one-way ANOVA was conducted in order to test whether there were any differences in the types of questions asked across conditions. Significant main effects

of question type was found, $F(2,52) = 5.01$, $p < 0.01$. Significantly more invitations were used in the *HFD* condition ($M = 8.93$, $SD = 2.70$) than the *verbal* condition ($M = 5.96$, $SD = 3.14$). A significant difference in the number of direct questions used between conditions was also found, $F(2,52) = 11.34$, $p < 0.01$. Significantly more direct questions were asked in the *HFD* condition ($M = 4.93$, $SD = 2.89$) than the *verbal* condition ($M = 1.93$, $SD = 2.07$), and in the *dolls* condition ($M = 4.67$, $SD = 1.44$) than the *verbal* condition ($M = 1.93$, $SD = 2.07$). This suggests that the nature of the props interviews altered the interviewers behaviour, and may have been due to the use of props to follow up details about touch that were given by children. There were no differences in the type of questions asked between the *HFD* and *doll* conditions.

Reported information

An alpha level of 0.05 was used for all statistical analyses. Means and standard deviations for each variable tested for the *verbal*, *dolls*, and *HFD* groups are presented in Table 2.

Table 2.

Means (and Standard Deviations) for Total Correct Information, Total Touch Information, and Total Errors by Condition (each including both verbal and nonverbal information)

	Verbal ($N = 27$)		HFD ($N = 14$)		Dolls ($N = 12$)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Total correct info	23.85	15.10	30.50	9.25	30.33	13.06
Total touch info	6.48	4.88	8.36	3.18	8.00	5.74
Total errors	1.22	1.69	3.29	2.58	3.00	2.17
Errors w/out L/R dist'n*	1.19	1.71	2.07	2.30	2.17	2.04

*Number of errors made when not controlling for distinctions of left or right side of the body in reports of touch.

Means and standard deviations

It is important that the normality of the data was checked before any major analyses were conducted as the results may have affected which tests were used. As shown in Table 2, large standard deviations were present in most of the analyses, which suggested that outliers may have been present in the data – potentially affecting normality. This was particularly evident in analysis of both total errors and errors without left/right distinction. Q-Q plots of the data and the Kolmogorov-Smirnov test of normality, however, indicated that both the total information reported ($D(53) = 0.08$, $p = 0.20$) and touch information reported ($D(53) = 0.09$, $p = 0.20$) were normally distributed (Field, 2005). The total errors ($D(53) = 0.19$, $p < 0.001$) appeared to be non-normal, and this result may have been due to the small number of errors or an outlier in the data (discussed further in errors section).

Total information reported

As there was some discrepancy in the gender of participants in each group, a one-way ANOVA was conducted to determine whether this may have affected the amount of information reported across conditions. This revealed that there were no significant gender differences in the amount or accuracy of total information (verbal and nonverbal) or touch information (verbal and nonverbal) across conditions.

In order to determine whether there were any ceiling or floor effects in the data, the proportion of information reported out of the total potentially remembered information was calculated by summing the six categories of information (Action Touch, Action Other, Object Touch, Object Other, Location of touch, and Elaborations) and dividing the means of information reported in each condition by this sum (126, the total number of codes). The proportion of total information provided in the *verbal* condition was approximately 19.0% (23.85 items out of 126 items), and in both the *HFD* and *dolls* conditions approximately 24.0% (30.50 items out of 126 items and 30.33 items out of 126 items respectively). When elaborations

and location of touch were removed from the analyses, the proportion of information reported rose to approximately 31.0% for the *verbal* condition, 40.0% for the *HFD* condition, and approximately 41.0% for the *dolls* condition. This suggested that the analyses were not constrained by ceiling or floor effects.

A one-way Analysis of Variance (ANOVA) was conducted to determine whether there were significant differences between the amount of total information (free and prompted recall summed; both verbal and nonverbal information) reported in the *verbal*, *HFD*, and *doll* conditions. There were no significant differences, $F(2,52) = 1.60$, $p = 0.21$.

Total touch information reported

The proportion of reported touch information (verbal and nonverbal) was calculated from the sum of potential to-be-reported touch information (23, the total number of touch codes). To investigate the amount of touch information (verbal and nonverbal) that was reported out of what could have been reported, In the *verbal* condition, participants reported approximately 28.0% of possible information (6.48 items out of 23 items), in the *HFD* condition approximately 36.0% (8.36 items of 23 items), and in the *dolls* condition approximately 35.0% of potential information (8.00 items of 23 items).

To establish whether there were any differences between conditions in the amount of information reported specifically regarding touch, a one way ANOVA was conducted. Again, no significant differences were found in the amount of touch information (free and prompted recall summed) reported by children in the *verbal*, *doll*, or *HFD* conditions, $F(2,52) = 0.89$, p = 0.42.

Nonverbal reports of information

The proportion of general nonverbal information (i.e., that reported through pointing, gesture, or demonstration; in the props interviews this includes information

reported before the props were introduced) reported out of the total information was calculated between conditions to determine the extent to which children employed nonverbal strategies in their reports. Approximately 14.5% of information in the *verbal* condition, 18.0% of the information in the *HFD* condition, and 17.0% of total information in the *dolls* condition was reported nonverbally.

The proportion of nonverbal information regarding touch that was reported was also calculated for each condition. Children used nonverbal techniques to report approximately 24% of touch information in the *verbal* condition, 39% of information in the *HFD* condition, and 31% in the *dolls* condition.

To determine whether there were any differences in the amount of general information reported nonverbally (i.e. through gesture, demonstration, or pointing) by children across conditions a one-way ANOVA was used to compare the total amount of nonverbal information reported in the *verbal*, *HFD,* and *doll* conditions. No differences were found between any of the conditions, $F(2, 52) = 1.81, p = 0.17$.

As the HFDs and dolls were primarily employed to facilitate reports of touch from the children, the amount of touch information specifically reported nonverbally across conditions was calculated using a one-way ANOVA. Again, no differences in the amount of touch information reported nonverbally in the *verbal*, *HFD,* and *dolls* conditions, $F(2, 52) = 2.35, p = 0.11$.

Errors and accuracy of reported information

Due to the small numbers of errors in participants' reports overall, intrusions (untrue details) and distortions (misrepresented information) were combined for analysis. The final prediction, that there would be significantly more errors in the *dolls* condition than the *HFD* and *verbal* conditions, was tested by conducting a one-way ANOVA. A significant main effect of errors was found, $F(2,52) = 5.85, p<0.01$. Tukey post-hoc tests revealed that significantly more errors were found in the *HFD*

than the *verbal* condition (see Table 2). A significant difference in errors was also found between the *verbal* and *dolls* condition, with more erroneous information reported in the *dolls* than the *verbal* condition. No differences in errors were found between the two props groups.

In analysis of the raw data, it was suspected that a significant contributing factor to the errors was coding whether a child correctly or incorrectly distinguished a location of touch on the left or right side of the body. When these errors were eliminated from the analysis, there were no longer any significant differences in erroneous information between the groups, $F(2,52) = 1.51$, $p = 0.23$. This suggests that children made more left/right location distinction errors using the props than in the verbal interview.

There was one outlier evident in the errors data (from the *HFD* condition) which was more than three standard deviations from the mean. To investigate whether this had any effect on the findings, analyses were re-run with the data of this participant removed. The same pattern of results remained.

To test the prediction that the proportion of correct information would be high in all conditions, the percentages of correct information out of the total (verbal and nonverbal) information reported in each condition were calculated. In the *verbal* condition, approximately 94.9% of information was accurate. A level of 89.2% accuracy was found in the *HFD* condition, while approximately 92.9% of information reported in the *dolls* condition was correct. This indicates that overall, the accuracy of information reported was high (above 85%) in all conditions.

Discussion

The progressive increase in reports of sexual abuse and the resulting need for children to give evidence about their own abuse has necessitated an amplification of literature in the area of children's eyewitness memory. Research has demonstrated

that under certain conditions, young children are able to provide accurate and complete reports of events they have experienced (e.g. Pipe, Lamb, Orbach & Esplin, 2004). There is evidence that in certain situations props may be a useful tool in eliciting detailed and precise information from children about events, particularly when it is difficult for them to verbally report it.

The current study aimed to investigate methods to improve the quality of children's reports of an event where they had experienced touch, and the effectiveness of props in assisting children to report touch information when presented in a controlled way (where children have restricted access to the props rather than being able to freely explore and demonstrate with them). The children in this study participated in a staged event, 'Visiting the Pirate' and were interviewed after a delay either verbally or with the assistance of Human Figure Drawings (HFDs) or dolls. The major findings and their implications will now be discussed.

Amount of information reported

Based on previous research, it was hypothesised that significantly more event information would be reported by children in the HFD and doll conditions than the verbal condition. This prediction was unsupported, however, as no significant differences were found in the total amount (verbal and nonverbal) of event information reported by children in each of the three groups. These props, therefore, did not appear to assist children's reports of the event above a verbal interview alone. In addition, it was expected that more information (verbal and nonverbal) about where children had been touched would be reported in the HFD and doll conditions than the verbal condition. This hypothesis was also not supported, as no significant differences in touch information was found between the three conditions.

Although the differences between conditions were not significant, the means appear to show that approximately seven more items of general event information on

average was reported in the HFD and doll conditions than the verbal condition. It is possible that had the size of the groups in each condition been larger a statistically significant difference would have been found. Another potential reason for this finding is the variability present in the data. The standard deviations of the information reported and errors made in each condition were relatively large in comparison to the means. This indicates that there was lack of consistency in the amount and accuracy of information reported, with some children reporting large amounts of detail and others not. This may have obscured any significant differences in the information reported between conditions, and could have been different had the sample size been larger.

Alternatively, though not specifically tested in the current study, it can be speculated that this finding may reflect the importance of individual difference factors and the impact of these on the ways children remember and report information. Several cognitive variables (such as knowledge, language, and susceptibility to suggestion) as well as social personality variables (for example, attachment and coping styles) have been identified as highly variable between children, depending on their past experiences and current life contexts (e.g. Pipe & Salmon, 2002). It is important to take into account the potential impact of these factors on children's recall of an event in order to develop methods to better accommodate these influences in interviews with children.

There are several possible reasons for the finding of no difference in the amount of reported information across conditions. The children were aged from 5 to 7 years of age, a period where language and cognitive abilities are generally becoming well-developed (Berk, 2006). As a result, children may have simply been able to provide sufficient detail verbally and through demonstration on their own bodies so as not to have needed the props for assistance, and therefore the introduction of the HFDs and

dolls would not have elicited any additional relevant information about the event that had not already been disclosed by the child. This is supported by existing literature demonstrating that by about 5 years of age, children are generally proficient at providing clear and detailed narratives of their experiences (e.g. Saywitz, 1995) and other research suggesting that props may only be useful for younger (preschool-aged) children who are not as able to report information verbally (Berk, 2006, Cole & Loftus, 1987). Other researchers who have compared verbal interviews with interviews using HFDs and dolls (where access to the props was relatively constrained) have found similar results for school-aged children (e.g. Lamb *et al.,* 1996; Samra & Yuille, 1996; Willcock *et al.,* 2006). The present findings, considered with the literature, suggest therefore that the props may have had more utility in a study with children under the age of 5 years.

Other studies, however, have found props to be useful with older children. Goodman and Aman (1990), for example, found dolls to be useful with 5 year old children, and Gee and Pipe (1995) discovered that the use of items from an event in subsequent memory interviews assisted the reports of children aged nine to ten years (see also Teoh *et al.,* in press), however due to the similarities with items in the event this type of prop is a much more effective retrieval cue and is difficult to compare to the props used in the current study. Some studies have also found that even preschoolers did not benefit from the use of props any more so than with a verbal interview (e.g. Bruck *et al.,* 1995). The age of the participants, therefore, cannot be the only explanation for this demonstrated lack of difference in information reported between interview conditions. As discussed earlier, it also appears to depend on the type of prop and how it is utilised in the interview, amongst other factors.

Another reason for this finding may be the nature of the protocol that was used in the interviews. The National Institute of Child Health and Development (NICHD)

protocol was designed to be used in investigative interviews with children, and primarily aims to assist in eliciting the highest possible amount of information verbally from a child. The current study used a modified version of the protocol, where props were only introduced after the child had been asked to freely recall all remembered information from the event – and their use was constrained. As discussed above, children may have provided the majority of the event information that was stored in their memories in the free recall part of the interview - leaving limited undisclosed information to report once props were introduced. Despite this, Teoh et al. (in press) have demonstrated that with 4- to 13-year-old alleged sexual abuse victims, the use of HFDs in combination with the NICHD protocol was associated with new reports of touches not revealed in the initial verbal part of the interview. This suggests that the employment of HFDs in combination with a protocol such as that of the NICHD where children's access is restricted may be useful in assisting the reports of individuals who have experienced genital touch, but not as useful in neutral events. This indicates that alternative explanations for the findings in the current study must also be considered.

It has consistently been suggested by researchers that children report less information from memory than is apparently available to them due to a lack of motivation - particularly when details of the event may be embarrassing, shameful or traumatic (Hershkowitz *et al.,* 2007; Saywitz *et al.,* 2007; Saywitz *et al.*, 1991). Several studies that have found props to be beneficial over that of verbal interview have investigated their utility with sexual abuse victims, or where the touch involved was invasive and/or potentially traumatic for the children (e.g. Aldridge *et al.*, 2004; Saywitz, Goodman, *et al.*; Steward, Steward *et al.*, 1996).

The current study, however, used a non-threatening, innocuous event which was performed in a location familiar to the children. In addition, before both the event

and interview, children were informed that their parents had given permission for them to take part, and they were allowed to go with the experimenter by their teachers. The children in the present study, therefore, did not appear to have any motivational reason not to verbally report event information (particularly about touch – which was innocuous) to the interviewers. In addition to motivational factors, according to some researchers children may recall fewer details from a traumatic event (such as sexual abuse) due to a 'blocking' of the memories or lack of desire to discuss the event (e.g. Berliner, Hyman, Thomas & Fitzgerald, 2003). In such a case, props may act as implicit memory cues for these children or a way to express this information that is less invasive and confronting than having to verbalise it.

These points are supported by research that has demonstrated that children tend to disclose more shameful and/or embarrassing details (such as in cases of sexual abuse) using props than verbally (e.g. Aldridge *et al.*, 2004; Saywitz, *et al.*, 1991; Teoh *et al.*, in press). This implies that studies such as this are not as applicable to forensic contexts as those involving invasive and/or offensive touch and events surrounded by secrecy, shame and embarrassment. Alternatively, the type of touch used in the current study may not have been salient enough for the children to remember in the same way they would with traumatic or embarrassing touch – and therefore not recalled as well as it may have been by participants had they experienced more salient touch.

The amount of total information reported by children of what could have been reported was calculated for each condition. In all conditions the average amount of detail reported was less than a third of potentially encoded information from the event. This is for the most part consistent with research demonstrating that children of this age do not generally provide large amounts of information in free recall, particularly in comparison to older children and adults (Berk, 2006; Fivush &

Shukat, 1995; Pipe *et al.,* 2004). It is extremely difficult for a person of any age or developmental level, however, to recall a substantial amount of detail about a complex event, particularly after a delay (e.g. Lamb *et al.*, 2000; Ornstein *et al.*, 1992). When the peripheral reported details (elaborations and *location* of touch) were removed from the analysis, the proportion of information reported in each condition increased significantly. Participants therefore appeared better able to report the central details of the event (main actions and objects; e.g. dressing up, learning the dance, finding the treasure) but less able to recall more peripheral details (elaborations and precise location of touch; e.g. colour of the sheet, number of pieces to the puzzle). This supports the theory that young children tend to disclose the central aspects of an event rather than the less essential details when reporting an event from memory (e.g. Raskin & Yuille, 1989).

Accuracy of reported information

The third hypothesis, that the accuracy of reported information would be high in all conditions, was generally supported by the results. The overall accuracy of information (verbal and nonverbal) reported by the children ranged from approximately 89% to 95% across conditions, and there were no significant differences in general errors across conditions. This indicates that in all three conditions most information provided by children about the event was correct. This finding is inconsistent with the suggestions of some researchers that the use of HFDs and dolls in interviews with children increase inaccuracies in their reports (Brown *et al.*, 2007; Bruck, Ceci & Francoeur, 2000; Ceci *et al.,* 1995; Thierry et al., 2005; Willcock *et al.*, 2006).

A significant number of studies conducted in this area have employed anatomically detailed dolls, which is likely to have increased the risk of false sexual touch reports by children (e.g. through exploration of vaginal or anal openings in the

dolls) above that of non anatomical dolls (Everson & Boat, 1994; Salmon, *et al.*, 1995). The current study used neutral, clothed dolls and an event where children were not required to remember and report invasive (e.g. genital) touch. Unlike other studies, therefore, the risk of commission errors in the children's reports was likely reduced in the present research.

In analyses of accuracy in the present study, only errors of commission were included. In previous studies where unreported information was also included in the analysis, the accuracy of reports was presented as much lower than in the current study (e.g. Willcock *et al.*, 2006). It is likely that the accuracy of reports in the current study would have been much lower if errors of omission were also included in the analyses, as it appears from proportional calculations that there was a relatively large amount of detail from the event not reported by participants. Further, in the study by Brown et al. (2007) errors were reduced when open-ended prompts were used in combination with the props, as was done in the current study.

The children who participated in this study were aged 5 to 7 years, and, as discussed earlier, at a cognitive level whereby the encoding and retrieval strategies of children of this age are relatively well-developed (Berk, 2006; Raskin & Yuille, 1989; Zaragoza, 1987). Some studies that have reported props as decreasing the amount of information presented by participants in a memory interview have done so with younger children (e.g. Bruck *et al.,* 2000; Bruck *et al.,* 1995; DeLoache & Marzolf, 1995) who may have less ability to encode large amounts of correct information, are likely to be more suggestible, and typically have limited retrieval strategies available in their repertoire (Cassel *et al.,* 1996; Zaragoza, 1987). In addition, as asserted by DeLoache and Marzolf (1995) older children, who have grasped the concept of dual representation, are better able to use props as well as verbal means to convey information accurately. This implies that when using props

with younger children, interviewers must be more cautious in their interpretations of information than perhaps with older children, as this information may be more likely to be inaccurate.

Again, the use of the NICHD protocol may have increased the accuracy of information that was reported by the children. Research evaluating the protocol has demonstrated that information provided in interviews where it is employed is typically much more precise than in interviews where an alternative or no protocol is used (Lamb *et al.*, 2007; Orbach *et al.*, 2000; Sternberg *et al.,* 2001). This is likely to be due to the open-ended nature of the questions, with an extensive free recall portion at the beginning of the interview. As discussed earlier, free recall is typically much more accurate than responses to direct or leading questions (Leichtman & Ceci, 1995; Leippe *et al.*, 1991; Hutcheson *et al.,* 1995; Pipe *et al.,* 2004; Pipe & Salmon, 2008; Powell *et al.,* 1997; Steward, Steward *et al.,* 1996), few of which were used in the interviews in the present study. The props were only introduced after a mention of touch was made by the child, reducing the chances that a false disclosure of touch would occur.

Finally, the use of a staged event in which the child actively participated may have contributed to the high accuracy of reports. According to Gobbo et al. (2002), participation in an event leads to much more accurate reporting than merely observing or hearing about it. The authors suggest that this is because there is more involvement and interest in this modality, which leads to more advanced encoding of information. Murachver et al. (1996) found that information reported by children who experienced an event was more detailed and accurate than those who observed it or were read a story about it, as personally experiencing the event was more salient for the child (see also Gee & Pipe, 1995; Gobbo *et al.*).

Overall, these findings suggest that the use of some props in interviews with children may not be as hazardous in terms of the accuracy of information as once thought by some researchers (e.g. Ceci & Bruck, 1995; Everson & Boat, 1994). If HFDs and dolls are used in memory interviews about a personally experienced event following a structured, empirically sound protocol and presented to children in a controlled manner, the elicited reports appear to be of a similar quality to those in verbal interviews.

The final prediction was that there would be no differences in the accuracy of information reported with HFDs and dolls than that reported verbally. Initial analyses indicated that more errors were made in the HFD and dolls conditions; when left/right location distinctions were removed from the analysis, however, there were no significant differences in the number of errors made by children in the verbal, HFD and dolls conditions. The hypothesis was supported, therefore, and it was apparent that the increased errors being made by children in the props conditions were due to these children not distinguishing which side of the body a touch occurred when reporting with the HFDs and dolls.

Participants were not specifically instructed to try and remember which side of the body they had been touched, only where. As a result, they may have simply reported the general location of touch without explicitly specifying which side of the body the touch occurred on. This suggests that children are less able to report the precise location of a touch on a HFD or doll than on themselves, and the reporting of touch by the child on their own body may be a better tool than using props in memory interviews about touch. Practically, however, this would be relatively insignificant. In a sexual abuse investigation, for example, it is unlikely that the left/right distinction of a touch location would be an important detail; rather factors such as who performed the touch and the order of events would be of more

significance. More general details such as these were accurately remembered by children in all three interview conditions.

The finding of no difference in accuracy between the verbal, doll, and HFD conditions is consistent with some research (e.g. Bruck *et al.*, 1995), but inconsistent with other research that has found lower accuracy in interviews where HFDs and dolls were used (e.g. Brown *et al.*, 2007; Goodman *et al.*, 1997). Against predictions, the use of dolls in the interviews was not associated with more general errors in reports or false commissions of touch.

Rather than being allowed to use the HFDs and dolls in a more exploratory way – where there would have been more opportunities for play and fantasy, the props were only presented *after* a mention of touch had been made and with the guidance of mainly direct questions. The children were only permitted to interact with the dolls to demonstrate touch, and as often as possible were to demonstrate the touch without removing the props from the table. These findings suggest that when using dolls in a constrained way in memory interviews with children, the dolls are not associated with play and fantasy and the details provided appear to originate from the child's own memory rather than being contrived – as suggested by some researchers as present in studies where children are given free access to the props (e.g. Everson & Boat, 1994, Goodman & Aman, 1990). The results also indicate that interviews about a touch event using props is unlikely to affect the accuracy of information reported and offers evidence that props may have a place in forensic investigations with children, if used in a controlled way with empirically supported techniques.

Nonverbal reports of information

The information provided by children nonverbally was analysed to investigate the role of gesture and demonstration in the reporting of information from the event. The proportion of nonverbal general and touch information out of the total (verbal

and nonverbal) general and touch information reported was calculated, showing that a fairly significant portion of information provided by the children was nonverbal in nature, particularly when reporting touch information. Though this finding would be expected in the HFD and dolls conditions due to the fact that the interviewer directed the children in this condition to use the props to report information, a significant amount of nonverbal strategies were used by the children in the verbal condition to report information. There were also no differences in the amount of nonverbal details reported across conditions, indicating that similar amounts of gesture and demonstration (e.g. acting out the dance, pointing on own bodies) were used by children in the verbal, HFD and dolls conditions.

This indicates that children in the verbal condition (and perhaps all conditions) spontaneously used nonverbal techniques when recounting details about the event, and were generally accurate in these reports. Theirry et al. (2005) also found that children under the age of 7 years in their study reported more information behaviourally with dolls, while those aged 7 and over tended to report more information verbally along with dolls. As stated by the authors, this suggests that the dolls served a language substitution function for the younger children, and a memory retrieval function for the older children. In their study, however, information provided through enactments with the dolls was less accurate than the details reported verbally by the younger children. It has been suggested by researchers that nonverbal means of communication are employed by children as an aid to memory search, as a way to report more complex information that is difficult to report verbally, and as a method of 'freeing up' cognitive restraints of communication to be able to focus on memory (e.g. Stevanoni & Salmon, 2005). Both spontaneous and instructed gesture has been found to assist in the learning and communication of information (Broaders, Wagner Cook, Mitchell, & Goldin-Meadow, 2007; Goldin-

Meadow, 2000; Stevanoni & Salmon, 2005). These results show that even *without* instruction, however, children are still able to spontaneously provide accurate and detailed information nonverbally.

These findings suggest that it may be useful to train interviewers in recognising and encouraging nonverbal reporting of details from an event, as important information that may be missed as a result of focussing only on verbal reports.

Interviewer questions

The various questions asked by the experimenters in the memory interviews were examined in order to investigate whether there were any differences in the questions asked across conditions, and to ensure the types of questions used in the interviews were consistent with guidelines stipulated by the NICHD protocol (Hershkowitz *et al.*, 2007; Orbach *et al.*, 2000). As recommended by the NICHD protocol, the majority of questions asked in the interviews across conditions were open-ended. Similarly, few questions were direct and only two questions in total were suggestive (though the protocol states that no suggestive questions should be used). This implies that the interviews conducted in the present study were in accordance with what is suggested by the NICHD protocol (that the majority of questions should be open ended, less should be direct, and little or none should be suggestive), and as such the ways in which the interviews were conducted were empirically sound. Empirical research into the structure of interviews following the NICHD system has found that interviewers tend to use fewer option posing and suggestive questions and more open ended questions and utterances than interviews not following the protocol (e.g. Lamb *et al.*, 2007; Orbach *et al.*, 2000), consistent with the results of the current study.

Significantly more invitations were used by interviewers in the HFD condition than the verbal condition (with no significant differences with the dolls condition). This result was somewhat unexpected due to the directive nature of the props

interviews. It suggests that the nature of the HFD interview lead interviewers to alter their behaviour in that they were asking more open ended questions of the children than in the verbal interview. Perhaps the children in this condition were more vague in their responses to questions than in the verbal interview, encouraging more questions such as "tell me more about that" rather than cued invitations (e.g. "you said X. Tell me more about that") which may have been utilised more in the verbal interview where children may have offered clearer information. This is purely speculation, however, and was not specifically analysed in the present study.

In addition, significantly more direct questions were asked by interviewers in both the HFD and dolls conditions in comparison to the verbal condition. It is likely that the directive nature of the props interviews generated the need for more focussed questions in order to clarify the purpose of the props to the children. For example, while most of the children were automatically able to indicate touch on their own bodies, many had to be directly asked to specify the location of touch on the dolls and drawings by the experimenters (e.g. "where on the drawing did the pirate put the sticker?" rather than "where did the pirate put the sticker?" – after which the child would typically indicate using their own bodies).

Research has consistently demonstrated that information provided in response to direct questioning is typically less accurate than that provided in free recall (Leichtman & Ceci, 1995; Leippe *et al.*, 1991; Hutcheson *et al.,* 1995; Pipe *et al.,* 2004; Pipe & Salmon, 2008; Powell *et al.,* 1997; Steward, Steward *et al.,* 1996). The use of direct questions has not appeared to have increased the reporting of inaccurate information in the current study, however, and this is perhaps because the children were only asked direct questions to clarify reports already made, (e.g. "you said the pirate put a sticker on you. Can you show me on the drawing/doll where the pirate put the sticker?") rather than being lead to an answer (e.g. "the pirate put a sticker on

you, didn't they?"). Instead these questions were asked in a non-suggestive, controlled manner.

These findings do indicate, however, that NICHD protocol guidelines are potentially less able to be strictly followed when using props in an interview with children as opposed to a purely verbal interview. In future research some instruction and training for children in the use of props prior to the interview may be useful (particularly when comparing with a verbal interview) in order to keep the general structure of questioning in the different interviews consistent and so that children are more informed as to what is expected of them. The development of a version of the NICHD protocol modified for use with props such as HFDs and dolls in interviews may also be effective, perhaps with suggestions for ways of asking for clarification of touch with the props in a more open way.

Applications

The outcomes of the current study can be applied in several ways. This research can contribute to the development of a universally accepted protocol for interviewing children of this age about events involving touch. The study has provided further evidence that the NICHD protocol is a useful tool for eliciting accurate and detailed reports from children; however it is not specifically designed for touch reports. This protocol, therefore, can be modified to include guidelines for its use in combination with certain props for the demonstration of touch reports and highlight the importance of attending to nonverbal reports in addition to verbal reports to avoid overlooking valuable information.

As the results indicate that children of this age *are* capable of providing accurate and detailed verbal reports, however, resources could be focussed on improving the verbal interview with children over 5 years of age. In particular, the training of interviewers in techniques shown to improve the quality of recall (e.g. open-ended

questions, rapport building) would likely prove to be highly beneficial. Further, it appears that children of this age are just as accurate at demonstrating touch on their own bodies as on props, which could be the focus of investigations into touch reports with 5- to 7- year olds - particularly those who may be less able or willing to verbally report the touch. This may be less applicable to forensic contexts, however, as having to demonstrate touch on their own bodies may be traumatic or shameful for victims of sexual abuse. In this case, props may be a useful way of eliciting accurate touch reports from children without causing further distress to alleged victims.

Limitations

There were several limitations of the current study that should be mentioned. A major drawback of the study was that due to a restricted time frame, a limited number of participants were sought from one school. Several children for whom consent was gained were absent from school either on the day of the scheduled event or interview. As a result, the final numbers of participants was smaller than desired for the statistical analyses conducted, particularly in the two props conditions. This contributed to a large variation in the sample, and as a result the sample taken may not be entirely representative of the population of interest, and the results of analyses conducted on this sample of children are less generaliseable than if the sample had been larger. Ideally, future research would seek out a larger sample of participants in order to ensure sufficient statistical power, while accounting for attrition rates.

Two stickers and a stamp were put on the children as a part of some touches in the event and the children were then allowed to leave the room with them. These may have acted as a memory rehearsal device, making it easier for participants to recall these particular touches than the other touches (e.g. pat on the back) or more general information (e.g. doing the dance). In addition, it could not be established whether children were recalling the location of touch or merely the location of the

stickers and stamp when asked about the event. For example, a statement such as "she put the sticker here" would be coded the same way as "she touched me here". If the event were to be repeated, it would be beneficial that any item used in the event not be available as a retrieval cue after the child has participated in the event.

Finally, there are potential issues with ecological validity. The event in the present study was an enjoyable event where children experienced only innocuous touch, and the children were informed that their parents had given permission for them to take part. This is very different to the experiences of many victims of sexual abuse, where there is often fear, secrecy, and trauma surrounding the abusive incident. Further, children were only interviewed once about the event, and after a relatively short delay. In reality the disclosure of sexual abuse and subsequent evidence-giving in court can take years, and victims are typically interviewed about the abuse multiple times by different sources.

Future Research

This study points to several gaps still present in the literature and the limitations of current research. With the increase in reported cases of child sexual abuse and the amplification of numbers of children testifying to their own abuse in recent years, it is of paramount importance that research into effectively interviewing such children continues. It has emerged from the existing literature and the present study that age plays a significant part in determining the amount of information reported by children, and the modality of reporting that works best for them. The current study investigated the influence of props combined with the NICHD protocol with children aged 5 to 7 years, who were clearly proficient at verbally reporting information. A replication of this study with younger (preschool-aged) children, who have more language limitations and who may benefit from props in a highly structured open-

ended interview may yield different findings than the current study. There is potential for props to be more useful with children of this age.

The current study had less ecological validity than some others in the literature, and as such could not be fully generalised. Studies involving more invasive touch (such as necessary medical check ups and procedures involving medical touch) are more similar to the abuse experience, and therefore results of these studies can be better applied to improving touch reports from children. The present study could be replicated with an event involving more invasive and therefore salient touch, in order to investigate the utility of dolls and drawings in improving reports of these types of touch.

In addition, there has been much controversy over the use of anatomically-detailed dolls and drawings in investigative interviews with children. The use of such props in combination with the NICHD protocol may reduce the issues associated with the nature of the props, and may lead to better reporting of sexual touch in abuse interviews. Clearly this is an area that needs further investigation.

Conclusions

Human Figure Drawings and dolls did not improve the completeness of children's memory reports of an event involving touch above that of a verbal interview, and the details provided by the children in all interview conditions were highly accurate. These findings may be due to the age of the children, the protocol used, and the nature of the event, and suggest that while props do not contribute to *better* quality memory reports than verbal interview alone, they also do not harm the reports. It is also evident that if props are used in combination with a structured, empirically sound protocol, there is potential for the quality of children's reports to be improved.

No differences were found in the accuracy of information reported in the verbal, HFD, and dolls conditions. This indicates that contrary to some suggestions in the literature, information reported with neutral drawings and dolls can be as accurate as that reported verbally – if the access to these is restricted and controlled.

In addition to contributing to current knowledge around how children remember and report their experiences, these results can be applied to developing more effective ways of interviewing children in about events they have experienced - particularly as a part of sexual abuse investigations. There were some limitations in the methodology of the current study, and much research into how to elicit accurate and complete reports from children is still needed.

References

Aldridge, J., Lamb, M.E., Sternberg, K.J., Orbach, Y., Esplin, P.W., & Bowler, L. (2004). Using a human figure drawing to elicit information from alleged victims of sexual abuse. *Journal of Consulting and Clinical Psychology, 72*, 304-316.

Basden, B.H., Basden, D.R., Devecchio, E., & Anders, J.A. (1991). A developmental comparison of the effectiveness of encoding tasks. *Genetic, Social & General Psychology Monographs, 117*.

Berliner, L., Hyman, I., Thomas, A., & Fitzgerald, M. (2003). Children's memory for trauma and positive experiences. *Journal of Traumatic Stress, 16*, 229-236.

Broaders, S.C., Wagner Cook, S., Mitchell, Z., & Goldin-Meadow, S. (2007). Making children gesture brings out implicit knowledge and leads to learning. *Journal of Experimental Psychology, 136,* 539-550.

Brown, D.A., Pipe, M-E., Lewis, C., Lamb, M.E., & Orbach, Y. (2007). Supportive or suggestive: Do human figure drawings help 5- to 7- year-old children to report touch? *Journal of Consulting and Clinical Psychology, 75*, 33-42.

Bruck, M., & Ceci, S.J. (1999). The suggestibility of children's memory. *Annual Review of Psychology, 50,* 419-439.

Bruck, M., Ceci, S.J., Francoeur, E., & Renick, A. (1995). Anatomically detailed dolls do not facilitate preschooler's reports of a paediatric examination involving genital touching. *Journal of Applied Experimental Psychology, 1*, 95-109.

Bruck, M., Ceci, S.J., & Hembrooke, H. (1998). Reliability and credibility of young children's reports: From research to policy and practice. *American Psychologist, 53*, 136-151.

Berk, L.E. (2006). *Child Development* (7th ed.). Boston, MA: Pearson Education, Inc.

Cassel, W.S., Roebers, C.E.M., & Bjorkland, D.F. (1996). Developmental patterns of eyewitness responses to repeated and increasingly suggestive questions. *Journal of Experimental Child Psychology, 61,* 116-133.

Ceci, S.J. & Bruck, M. (1995). *Jeopardy in the Courtroom.* Washington, DC: American Psychological Association.

Ceci, S.J., Ross, D.F., & Toglia, M.P. (1987). Age differences in suggestibility: Narrowing the uncertainties. In S.J. Ceci, M.P. Toglia, & D.F. Ross (Eds.), *Children's Eyewitness Memory.* New York: Springer-Verlag New York Inc.

Cederborg, A-C., Orbach, Y., Sternberg, K.J., & Lamb , M.E. (2000). Investigative interviews of child witnesses in Sweden. *Child Abuse & Neglect, 24*, 1355-1361.

Cole, C.B., & Loftus, E.F. (1987). The memory of children. In S.J. Ceci, M.P. Toglia, & D.F. Ross (Eds.), *Children's Eyewitness Memory.* New York: Springer-Verlag New York Inc.

Dent, H.R., & Stephenson, G.M. (1979). An experimental study of the effectiveness of different techniques of questioning child witnesses. *British Journal of Social and Clinical Psychology, 18*, 41-51.

DeLoache, J.S., & Marzolf, D.P. (1995). The use of doll to interview young children: Issues of symbolic representation. *Journal of Experimental Child Psychology, 60,* 155-173.

Everson, M.D., & Boat, B.W. (1994). Putting the anatomical doll controversy in perspective: An examination of the major uses and criticisms of the dolls in child sexual abuse evaluations. *Child Abuse & Neglect, 18*, 113-129.

Everson, M.D., & Boat, B.W. (2002). The utility of anatomical dolls and drawing in child forensic interviews. In M.L. Eisen, J.A. Quas, & G..S. Goodman (Eds.), *Memory and Suggestiblity in the Forensic Interview.* Mahwah, NJ: Lawrence Erlbaum Associates.

Farrar, M.J., & Goodman, G.S. (1992). Developmental changes in event memory. *Child Development, 63*, 173-187.

Field, A. (2005). *Discovering Statistics using SPSS: (and Sex, Drugs and Rock'n'Roll)* (2nd ed.). London: Sage Publications Ltd.

Fisher, R.P., & Schreiber, N. (2007). Interview protocols to improve eyewitness memory. In M.P. Toglia, J.D. Read, D.F. Ross & R.C.L Lindsay (Eds.), *The Handbook of Eyewitness Psychology*. New York: Lawrence Erlbaum Associates.

Fivush, R. (1997). Event memory in early childhood. In N. Cowan (Ed.), *The Development of Memory in Childhood.* East Sussex: Psychology Press.

Fivush, R., & Shukat, J.R. (1995). Content, consistency, and coherence of early autobiographical recall. In M.S. Zaragoza, J.r. Graham, G.C.N. Hall, R.

Gee, S., & Pipe, M-E. (1995). Helping children to remember: The influence of object cues on children's accounts of a real event. *Developmental Psychology, 31*, 746-758.

Gilbert, J.A.E., & Fisher, R.P. (2006). The effects of varied retrieval cues on reminiscence in eyewitness memory. *Applied Cognitive Psychology, 20,* 723-739.

Gobbo, C., Mega, C., & Pipe, M-E. (2002). Does the nature of the experience influence suggestibility? As study of children's event memory. *Journal of Experimental Child Psychology, 81,* 502-530.

Goldin-Meadow, S. (2000). Beyond words: The importance of gesture to researchers and learners. *Child Development, 71,* 231-239.

Goodman, G.S. (2006). Children's eyewitness memory: A modern history and contemporary commentary. *Journal of Social Issues, 62,* 811-832.

Goodman, G.S. & Aman, C. (1990). Children's use of anatomically detailed dolls to recount an event. *Child Development, 61,* 1859-1871.

Goodman, G.S., Quas, J.A., Batterman-Faunce, J.M., Riddlesberger, M.M., & Kuhn, J. (1997). Children's reactions to and memory for a stressful event: Influences of

age, anatomical dolls, knowledge, and parental attachment. *Applied Developmental Science, 1*, 54-75.

Goodman, G.S., & Reed, R.S. (1986). Age differences in eyewitness testimony. *Law and Human Behaviour, 10*, 317-332.

Goodman, G.S., & Schwartz-Kenney, B.M. (1992). Why knowing a child's age is not enough: Influences of cognitive, social, and emotional factors on children's testimony. In H. Dent & R. Flin (Eds.), *Children as Witnesses.* New York: John Wiley & Sons, Inc.

Gordon, B.N., Ornstein, P.A., Nida, R.E., Follmer, A., Crenshaw, M.C., & Albert, G. (1993). Does the use of dolls facilitate children's memory of visits to the doctor? *Applied Cognitive Psychology, 7,* 459-474.

Gumpert, C.H. (2007). Clinical and organisational perspectives on denial and delayed disclosure. In M-E. Pipe, M.E. Lamb, Y. Orbach, & A-C. Cederborg (Eds.), *Child Sexual Abuse: Disclosure, Delay, and Denial.* Mahwah, N.J.: Lawrence Erlbaum Associates.

Hershkowitz, I., Fisher, S., Lamb, M.E., & Horowitz, D. (2007). Improving credibility assessment in child sexual abuse allegations: The role of the NICHD investigative interview protocol. *Child Abuse & Neglect, 31,* 99-110.

Hershkowitz, I., Lanes, O., & Lamb, M.E. (2007). Exploring the disclosure of child sexual abuse with alleged victims and their parents. *Child Abuse & Neglect, 31,* 111-123.

Hudson, J.A., Fivush, R., & Kuebli, J. (1992). Scripts and episodes: The development of event memory. *Applied Cognitive Psychology, 6,* 483-505.

Hudson, J.A., & Nelson, K. (1986). Repeated encounters of a similar kind: Effects of familiarity on children's autobiographic memory. *Cognitive Development, 1,* 253-271.

Hutcheson, G.D., Baxter, J.T., Telfer, K., & Warden, D. (1995). Child witness statement quality: Question type and errors of omission. *Law and Human Behaviour, 19*, 631-648.

King, M.A., & Yuille, J.C. (1987). Suggestibility and the child witness. In S.J. Ceci, M.P. Toglia, & D.F. Ross (Eds.), *Children's Eyewitness Memory.* New York: Springer-Verlag New York Inc.

Lamb, M.E., & Brown, D.A. (2006). Conversational apprentices: Helping children become competent informants about their own experiences. *British Journal of Developmental Psychology, 24*, 215-234.

Lamb, M.E., Hershkowitz, I., Sternberg, K.J., Boat, B., & Everson, M.D. (1996). Investigative interviews of alleged sexual abuse victims with and without anatomical dolls. *Child Abuse and Neglect, 20*, 1251-1259.

Lamb, M.E., Orbach, Y., Hershkowitz, I., Esplin, P.W., & Horowitz, D. (2007). A structured forensic interview protocol improves the quality and informativeness of investigative interviews with children: A review of research using the NICHD investigative interview protocol. *Child Abuse and Neglect, 31,* 1021-1231.

Lamb, M.E., Sternberg, K.J., & Esplin, P.W. (2000). Effects of age and delay on the amount of information provided by alleged sex abuse victims in investigative interviews. *Child Development, 71*, 1586-1596.

Lamb, M.E., Sternberg, K.J., Esplin, P.W., Hershkowitz, I., & Orbach, Y. (1997). Assessing the credibility of children's allegations of sexual abuse: A survey of recent research. *Learning & Individual Differences, 9,* 175-194.

Lamb, M.E., Sternberg, K.J., Orbach, Y., Esplin, P.W., Stewart, H., & Mitchell, S. (2003). Age differences in young children's responses to open-ended invitations in the course of forensic interviews. *Journal of Consulting and Clinical Psychology,71*, 926-934.

La Rooy, D., Pipe, M-E., & Murray, J.E. (2007). Enhancing children's event recall after long delays. *Applied Cognitive Psychology, 21,* 1-17.

Leichtman, M.D., & Ceci, S.J. (1995). The effects of stereotypes and suggestions on preschoolers' reports. *Developmental Psychology, 3*, 568-578.

Leippe, M.R., Manion, A.P., & Romanczyk, A. (1991). Eyewitness memory for a touching experience: Accuracy differences between child and adult witnesses. *Journal of Applied Psychology, 76*, 367-379.

London, K., Bruck, M., Ceci, S., & Schuman, D. (2007). Disclosure of child sexual abuse: A review of the contemporary empirical literature. In M-E. Pipe, M.E. Lamb, Y. Orbach, & A-C. Cederborg (Eds.), *Child Sexual Abuse: Disclosure, Delay, and Denial.* Mahwah, N.J.: Lawrence Erlbaum Associates.

Lyon, T.D. & Saywitz, K.J. (2006). From post-mortem to preventative medicine: Next steps for research on the child witness. *Journal of Social Issues, 62*, 833-861.

Melnyk, L., Crossman, A.M., & Scullin, M.H. (2007). The suggestibility of children's memory. In M.P. Toglia, J.D. Read, D.F. Ross, & R.C.L. Lindsay (Eds.), *The Handbook of Eyewitness Psychology.* New York: Lawrence Erlbaum Associates.

Milne, B., & Bull, R. (2006). Interviewing victims of crime, including children and people with intellectual disabilities. In M. Kebbell, & G. Davies (Eds.). *Practical Psychology for Forensic Investigations and Prosecutions.* West Sussex: John Wiley & Sons Ltd.

Mordock, J.B. (2001). Interviewing abused and traumatised children. *Clinical Child Psychology and Psychiatry, 6*, 271-291.

Murachver, T., Pipe, M.E., Gordon, R., Owens, J.L., & Fivush, R. (1996). Do, show and tell: Children's event memories acquired through direct experience, observation, and stories. *Child Development, 67*, 3029-3044.

Orbach, Y., & Lamb, M.E. (2000). Enhancing children's narratives in investigative interviews. *Child Abuse & Neglect, 24*, 1631-1648.

Orbach, Y., Hershkowitz, I., Lamb, M.E., Sternberg, K.J., Esplin, P.W., & Horowitz, D. (2000). Assessing the value of structured protocols for forensic interviews of alleged child abuse victims. *Child Abuse & Neglect, 24*, 733-752.

Ornstein, P.A., Gordon, B.N., & Larus, D.M. (1992). Children's memory for a personally experienced event: Implications for testimony. *Applied Cognitive Psychology, 6*, 49-60.

Pipe, M-E., Lamb, M.E., Orbach, Y., & Esplin, P.W. (2004). Recent research on children's testimony about experienced and witnessed events. *Developmental Review, 24,* 440-468.

Pipe, M-E., Orbach, Y., Lamb, M.E., & Cederborg, (2007). Seeking resolution in the disclosure wars: An overview. In M-E. Pipe, M.E. Lamb, Y. Orbach, & Cederborg, A. (Eds.), *Child Sexual Abuse: Disclosure, delay, and denial.* Mahwah, N.J.: Lawrence Erlbaum Associates.

Pipe, M-E., & Salmon, K. (2002). What children bring to the interview context: Individual differences in children's event reports. In M.L. Eisen, J.A Quas, & G.S. Goodman (Eds.), *Memory and Suggestibility in the Forensic Interview.* Mahwah, NJ: Lawrence Erlbaum Associates.

Pipe, M-E., & Salmon, K. (2008). Dolls, drawing, body maps and other props: Help or hindrance in the investigative interview? In K. Kuehnle & M. Connell (Eds.),

The Evaluation of Child Sexual Abuse Allegations: A Comprehensive Guide to Assessment and Testimony. West Sussex: John Wiley & Sons, Ltd.

Pipe, M-E., Thierry, K.L., & Lamb, M.E. (2007). The development of event memory: Implications for child witness testimony. In M.P. Toglia, J.D. Read, D.F. Ross, & R.C.L. Lindsay (Eds.), *The Handbook of Eyewitness Psychology.* New York: Lawrence Erlbaum Associates.

Price, D.W.W., & Goodman, G.S. (1990). Visiting the wizard: Children's memory for a recurring event. *Child Development, 61*(3), 664-680.

Priestly, G., & Pipe, M-E. (1997). Using toys and models in interviews with young children. *Applied Cognitive Psychology, 11,* 69-87.

Powell, M.B., Thomson, D.M., & Dietze, P.M. (1997). Memories of separate occurrences of an event: Implications for interviewing children. *Families in Society, 78*, 600-608.

Qin, J., Quas, J.A., Relich, A.D., & Goodman, G.S. (1997). Children's eyewitness testimony: Memory development in the legal context. In N. Cowan (Ed.), *The Development of Memory in Childhood.* East Sussex: Psychology Press.

Raskin, D.C., & Yuille, J.C. (1989). Problems in evaluating interviews of children in sexual abuse cases. In S. Ceci, D.F. Ross, & M.P. Toglia (Eds.), *Children take the stand: Adult perceptions of children's testimony.* New York: Springer-Verlag.

Roberts, K.P., & Powell, M.B. (2001). Describing individual incidents of sexual abuse: A review of research on the effects of multiple sources of information on children's reports. *Child Abuse & Neglect, 25*, 1643-1659.

Roebers, C.M., & Schneider, W. (2001). Memory for an observed event in the presence of prior misinformation: Developmental patterns of free recall and identification accuracy. *British Journal of Developmental Psychology, 19,* 507-524.

Salmon, K. (2001). Remembering and reporting by children: The influence of cues and props. *Clinical Psychology Review, 21,* 267-300.

Salmon, K., Bidrose, S., & Pipe, M-E. (1995). Providing props to facilitate children's event reports: A comparison of toys and real items. *Journal of Experimental Child Psychology, 60,* 174-194.

Salmon, K., & Pipe, M-E. (2000). Recalling an event one year later: The impact of props, drawing and a prior interview. *Applied Cognitive Psychology, 14*, 99-120.

Samra, J., & Yuille, J.C. (1996). Anatomically-neutral dolls: Their effects on the memory and suggestibility of 4- to 6- year old eyewitnesses. *Child Abuse and Neglect, 20*, 1261-1272.

Saywitz, K.J. (1987). Children's testimony: Age-related patterns of memory errors. In S.J. Ceci, M.P. Toglia, & D.F. Ross (Eds.), *Children's Eyewitness Memory.* New York: Springer-Verlag New York Inc.

Saywitz, K. (1995). Improving children's testimony: The question, the answer, and the environment. In M.S. Zaragoza, J.R. Graham, G.C.N. Hall, R. Hirschman, & Y.S. Ben-Porath (Eds.), *Memory and Testimony in the Child Witness.* Thousand Oaks: SAGE Publications.

Saywitz, K., & Camparo, L. (1998). Interviewing child witnesses: A developmental perspective. *Child Abuse & Neglect, 22*, 825-843.

Saywitz, K.J., Esplin, P., & Romanoff, S.L. (2007). A holistic approach to interviewing and treating children in the legal system. In M-E. Pipe, M.E. Lamb, Y. Orbach, & A.C. Cederborg (Eds.), *Child Sexual Abuse: Disclosure, Delay, and Denial.* Mahwah, N.J.: Lawrence Erlbaum Associates.

Saywitz, K.J., Geiselman, R.E., & Bornstein, G.K. (1992). Effects of cognitive interviewing and practice on children's recall performance. *Journal of Applied Psychology, 77*, 744-756.

Saywitz, K.J., Goodman, G.S., Nicholas, E., & Moan, S.F. (1991). Children's memories of a physical examination involving genital touch: Implications for reports of child sexual abuse. *Journal of Consulting and Clinical Psychology, 59*, 682-691.

Shrimpton, S., Oates, K., & Hayes, S. (1998). Children's memory of events: Effects of age, time, delay and location of interview. *Applied Cognitive Psychology, 12*, 133-143.

Steller, M., & Boychuk, T. (1992). Children as witnesses in sexual abuse cases: Investigative interview and assessment techniques. In H. Dent & R. Flin (Eds.), *Children as Witnesses.* New York: John Wiley & Sons, Inc.

Sternberg, K.J., Lamb, M.E., Orbach, Y., Esplin, P.W., & Mitchell, S. (2001). Use of a structured investigative protocol enhances young children's responses to free-recall prompts in the course of forensic interviews. *Journal of Applied Psychology, 86*, 997-1005.

Stevanoni, E., & Salmon, K. (2005). Giving memory a hand: Instructing children to gesture enhances their event recall. *Journal of Nonverbal Behaviour, 29,* 217-233.

Steward, M.S., Steward, D.S. (with Farquhar, L., Myers, J.E.B., Reinhart, M., Welker, J., et al.) (1996). Interviewing young children about body touch and handling. *Monographs of the Society for Research in Child Development, 6*, 1-186.

Teoh, Y-S., Yang, P-J., Lamb, M.E., & Larsson, A.S. (in press). Do human figure diagrams help alleged victims of sexual abuse provide elaborate and clear accounts of physical contact with alleged perpetrators?

Thierry, K.L., Lamb, M.E., Orbach, Y., & Pipe, M-E. (2005). Developmental differences in the function and use of anatomical dolls during interviews with

alleged sexual abuse victims. *Journal of Consulting and Clinical Psychology, 73*, 1125-1134.

Tobey, A.E., & Goodman, G.S. (1992). Children's eyewitness memory: Effects of participation and forensic context. *Child Abuse & Neglect, 16*, 779-796.

Westcott, H.L., & Kynan, S. (2006). Interviewer practice in investigative interviews for suspected child abuse. *Psychology, Crime & Law, 12+*, 367-382.

Willcock, E., Morgan, K., & Hayne, H. (2006). Body maps do not facilitate children's reports of touch. *Applied Cognitive Psychology, 20,* 607-615.

Zaragoza, M.S. (1987). Memory, suggestibility, and eyewitness testimony in children and adults. In S.J. Ceci, M.P. Toglia, & D.F. Ross (Eds.), *Children's Eyewitness Memory.* New York: Springer-Verlag New York Inc.

Appendix A1

Human Figure Drawing used to Interview Children (Male)
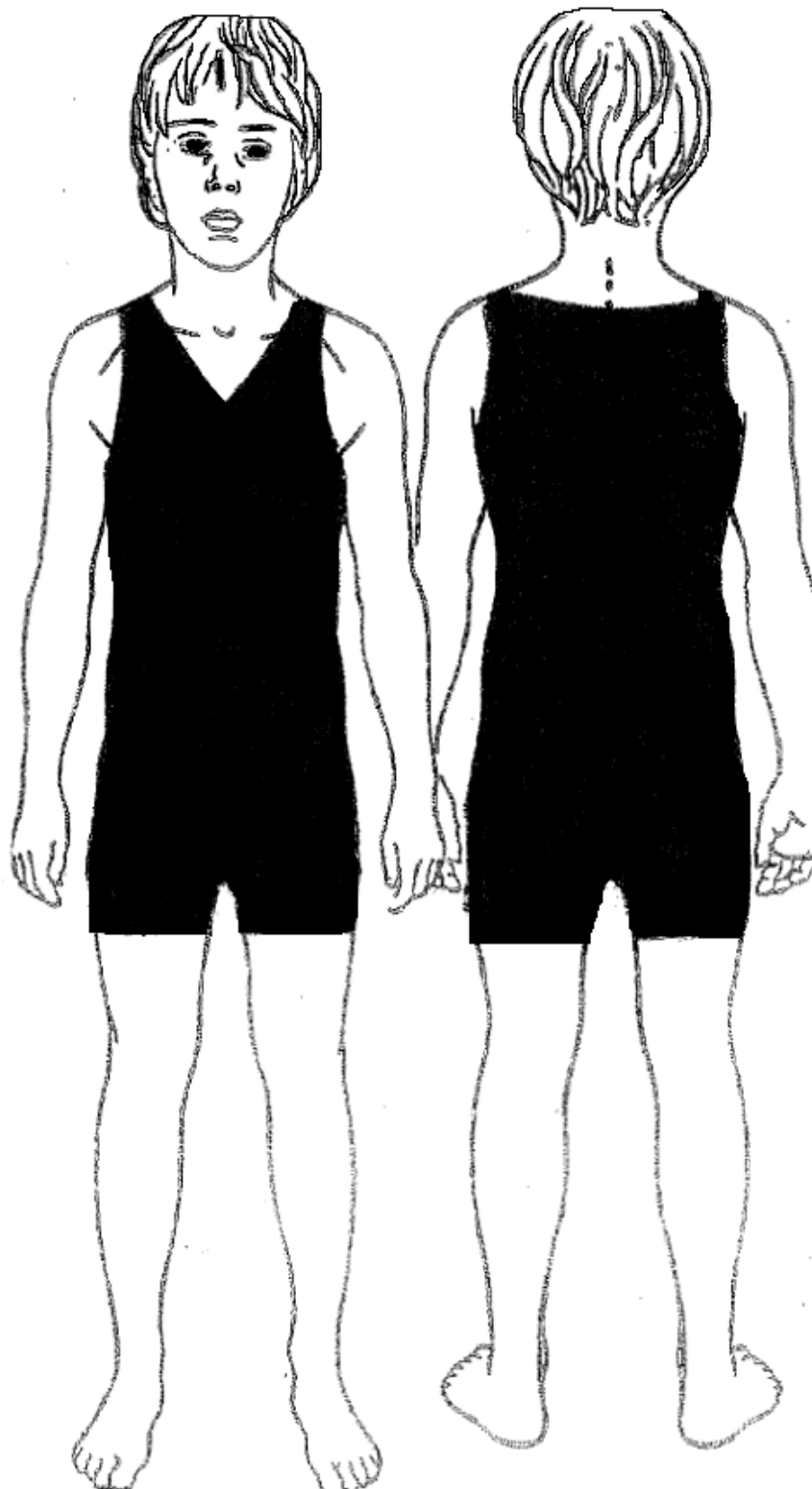
Appendix A2

Human Figure Drawing used to Interview Children (Female)
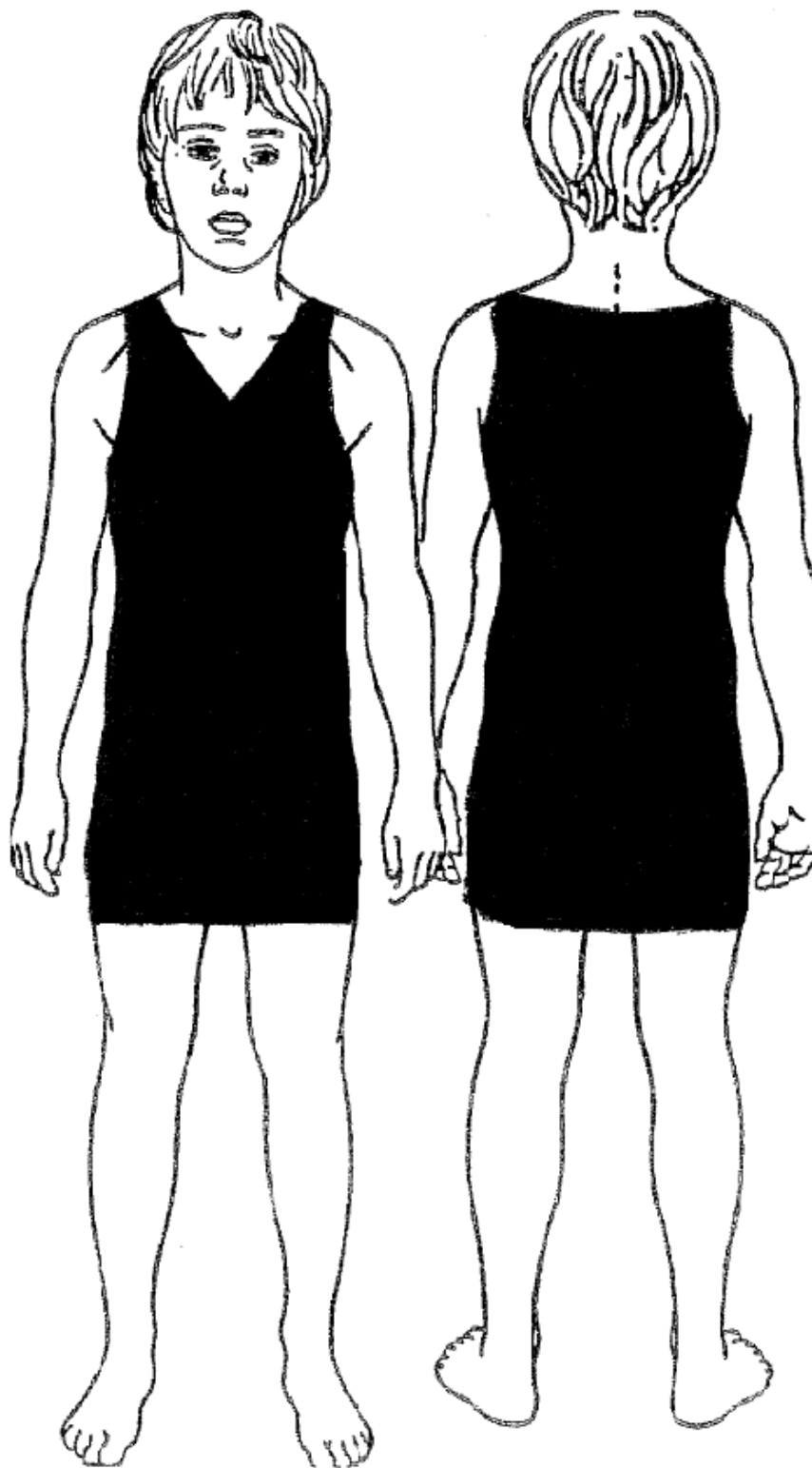
Appendix B

Photos of Dolls used to Interview Children (male and female)

Appendix C

Principal's Letter

Helping Children to Remember and Report an Event that they have Experienced

Dear Principal,
We are writing to invite children in your school to participate in a research project investigating ways to help children remember and report an event. This project has been granted approval from the Victoria University Human Ethics Committee.

Purpose of the research
- The purpose of this study is to understand how best to help young children (aged 5-6 years) remember and tell us the details of an event that they have experienced.
- We are particularly interested in whether using different kinds of strategies during the interview will help children to provide full reports of the event and reduce the number of errors that they make.
- Research into different kinds of interviews will serve to help us to understand the best ways to interview children. Ultimately, this may contribute to guidelines as to how best help vulnerable children in clinical or forensic settings.

Who is conducting the research?
- This study is being carried out by two psychology students, Katherine Mackay and Alana Malloy, under the supervision of Dr Karen Salmon.
- The research will contribute to an Honours and Masters thesis respectively.

What is involved if you give consent for children in your school to participate?
- All aspects of this research will take place at your child's school.
- We will first invite the children to participate individually in a staged event, 'Visiting the Pirate'. Dr Karen Salmon has used this event previously with 5-6 year old children, who as we know from this experience find it fun and engaging.
- The children will participate individually in a series of activities with the ultimate aim of 'discovering the pirate treasure' (e.g. becoming a proper pirate, doing the pirate dance). During the event they will also experience several instances of contact, for example learning a special handshake or receiving a special sticker on his or her hand. The event will take 10-15 minutes.
- Approximately 1 week later the children will be individually interviewed about the event. The children will be asked to remember as much as he or she can, and may also be asked to clarify reports of contact using dolls or outlines of human figures. The focus of the interview is 'visiting the pirate' and no personal information will be sought from participants.

What will happen to the data gathered?
- Interviews will be audiotape and transcribed for data analysis. Participants will be identified by a code number, not by name.
- Data will be kept confidential and secured for 5 years, after which it will be destroyed. The resulting Masters thesis will be kept in the Victoria University Library, and submitted for marking and publication.

- Only the immediate researchers will have access to the raw data, and other competent researchers may have access to coded data.
- We shall send you a copy of the general results of this study when we have completed all of our data analysis, at the beginning of 2009.

Any questions may be directed to the Supervisor of the project, Dr Karen Salmon, ph 463 9528, or Karen.Salmon@vuw.ac.nz. Thank you for taking the time to consider our request.

Yours sincerely,

Alana Malloy (MSc Student)   Katherine Mackay (honours student)

Karen Salmon, PhD., Dip.Clin.Psych
Senior Lecturer in Psychology

Appendix D1

Parent's Letter

Dear Parent/Guardian,

We are conducting a study on children's memory and would like to invite your child to participate. Ethical approval for this research has been obtained from the Victoria University Ethics Committee.

Purpose of the research

- The purpose of this study is to understand how best to help young children (aged 5-6 years) remember and tell us the details of an event that they have experienced.
- We are particularly interested in the extent to which various props (e.g. a doll) improve children's reports of the event.
- Research into different kinds of interviews will serve to inform us about the best ways of interviewing children.

Who is conducting the research?

- This study is being carried out by two psychology students, Katherine Mackay and Alana Malloy, under the supervision of Dr Karen Salmon.
- The research will contribute to an honours and masters thesis respectively.

What is involved if you give consent for your child to participate?

- **All aspects of this research will take place at your child's school, during school time.**
- We will first invite your child to participate individually in a staged event, 'Visiting the Pirate'. Dr Karen Salmon has used this event previously with 5-6 year old children, and we know from this experience young children find it fun and engaging.
- The children will participate in a series of activities with the ultimate aim of 'becoming a pirate' (e.g. learning a pirate dance). During the event, they will experience several instances of contact, such as receiving a special sticker on his or her hand. The event will take 10-15 minutes.
- Approximately 1 week later the children will be individually interviewed about the event. Your child will be asked to remember as much as he or she can, and may also be asked to clarify reports using dolls, outlines of human figures, or drawing. The focus of the interview is 'Visiting the Pirate' and no personal information will be sought from participants.

What will happen to the data gathered?

- Interviews will be audiotape and transcribed for data analysis. Participants will be identified by a code number, not by name.
- Data will be kept confidential and secured for 5 years, after which it will be destroyed. The resulting masters thesis will be kept in the Victoria University Library, and submitted for marking and publication.

- Only the immediate researchers will have access to the raw data, and other competent researchers may have access to coded data.
- We shall send you a copy of the general results of this study when we have completed all of our data analysis at the beginning of 2009.

If you have any further questions, you are most welcome to contact the project's supervisor, Dr Karen Salmon, 463 9528, or Karen.salmon@vuw.ac.nz

If you agree that your child may take part in this research, please sign the attached consent form and give to your child to return to their classroom teacher.

Alana Malloy (MSc Student)   Katherine Mackay (honours
                                                             student)

Karen Salmon, PhD., Dip.Clin.Psych
Senior Lecturer in Psychology

Appendix D2

Parental Consent Form

I have been provided with enough information about the aims of the study, and how it will be carried out. I have had the opportunity to have any of my questions answered.

I understand that I can withdraw my child/they may withdraw themselves from the study at any time. I am aware that all data will be kept confidential and destroyed after 5 years.

I agree that _____, who is under my guardianship, may take part in this research.

Name of parent/guardian_____

Signed_____

Please sign and give to your child to return to their classroom teacher.

Appendix E

Script used in Event

Experimenter: "Hello [name of child], come on in. So you're going to help me do some pirate things today" [Lead child towards set].

1. Getting the Pirate Badge

E: "Let's get you dressed up as a pirate, so you can get the pirate badge and everyone will know you are a pirate!"

[Help child dress in pants, vest, sash and scarf]

E: "Here, put these pants on, here's the vest that goes on here, here's the sash for round your tummy, and here's the scarf for round your neck!"

[While holding child's shoulders, (**1**), say "now I am turning you into a pirate"]

[Pin badge on vest fabric of child's shoulder (**2**) saying "Excellent! Now that you've turned into a pirate, you can get the pirate badge. I'll put it on your shoulder"].

2. Pirate Party Dance

E: "Oh dear! I forgot something … let's put this (tambourine thing) around your ankle (**3**), so we can do the pirate party dance (put it on the right ankle). "Look, there" (Pirate stands up and looks …) "Oh no … I've put it on the wrong one! Silly me, let me put it on this ankle" (Takes it off and puts it on other). "Now that's right, now when we do the pirate party dance you'll be able to shake the bells and make them rattle"

E: "Now let's learn the pirate party dance, so you can get the pirate sticker."

[Dance involves linking arms (**4**) while skipping in circles, then shaking ankles then knocking opposite heels with child (**5**)]

E: "First we link arms and skip in circles, and then we link our other arms and go the other way! Then we shake our feet and tap them together!"

E: "Wow, you are a great pirate dancer! Now you can get the pirate sticker. Can you hold out your right hand? That's this one."

[Experimenter points to child's right hand. Ensure child holds out right hand, by saying "the other one" if necessary. Place sticker on child's right hand (**6**)]

3. Pirate Salute

E: "Now let's learn the pirate salute, so you can get the pirate stamp"

[Experimenter indicates to child how to perform the salute – fist on top, fist below, fists together, do a salute, then pat on each other on the shoulder. When showing child salute, experimenter says, "make a fist, yours goes on top, then on the bottom, then we put our fists together, then salute, and pat each other on the back"]

[Child performs salute with experimenter (**7**), (**8**)]

E: "The salute is done better if we say "ARRR" while we are doing it. Can you say "ARRRRR" with me?

[child says ARRRR with experimenter]

E: "Good. Now let's do the salute again, this time saying 'ARRR' while we are doing it"

[Do salute again with child (**9**) (**10**) this time saying "ARRRRR"]

E: "Good work! Now you can get the pirate stamp! Can you hold out your left hand? That's this one"

[Experimenter points to child's left hand (ensure child holds out left hand, by saying "the other one" if necessary). Place stamp on child's left hand **(11)**]

4. Getting the treasure

E: "You have done very well today; you dressed up as a pirate and got the badge, you got the sticker for learning the pirate dance and the stamp for learning the pirate salute. So now just one more thing – let's hunt for the pirate treasure!"

[Walk with child over to table, saying First we have to make the pirate map, so we can find the pirate treasure! Its like a puzzle, you have to put the pieces together. Go ahead!"

[Child puts pieces together, makes a map of the room, with an 'X' and picture of the bucket]

E: "Looks like the treasure is in the bucket! Can you see the bucket in this room?"

[wait for child to respond]

E: "Very good" [walk with child to bucket]

E: "Looks like the treasure is buried! Can you dig around in the bucket and find the treasure chest?"

[child finds treasure chest]

E: "Excellent! You've found the pirate treasure chest! Can you open it up? … Wow we've found the pirate treasure! Choose one piece of treasure, and I'll put it on your arm"

E: "Can you roll up your right sleeve - that's this one [point to right arm] and I will put this pirate tattoo on, just like a real pirate"

[Rub sticker onto child's right arm **(12)**]

E: "Thank you for helping me today. You did a great job. Now let's get you back to your classroom"

**Child will leave with the two stickers and the stamp that they receive as part of the event. The badge will come off with the pirate clothes, and the ankle bracelet will be taken off when the child is undressing from the pirate clothes.

Appendix F

Protocol used in Interviews

Stage I. (Introduction)

"Hello, my name is _____, and I am here today to talk to you about last week when you did some pirate things."

 "You can see that I have a tape recorder here. It will help me remember everything you tell me today."

"If I ask a question that you don't know the answer to, you can just say 'I don't know'. So, if I ask you the name of my cat, what would you say?"

[wait for response]

"That's right, because you don't know my cat's name. But if I ask you the name of your teacher, you would say?"

[wait for response]

"That's right…because you do know your teacher's name."

"If I ask a question, and you don't know what I mean, just tell me and I'll say it again so you do know what I mean.'".

Stage II. (Rapport Building)

"First I'd really like you to tell me about something fun you did in the last few days. Just think about something that was really fun (pause)**. Now tell me everything you did, from the beginning to the very end."**

(if child mentions pirate event, say): "Something apart from visiting the pirate"

If the child gives a short answer, or gets stuck, ask:

"I really want to hear about X, what else can you tell me about that fun time?"

   [wait for a response].

If the child does not answer, say:

"What was something you enjoyed doing/made you feel happy?"

   [wait for a response]

If child still does not respond, say:

"like when you went on a school trip/to a birthday party"

   [wait for a response]

When the child has stopped, use cued invitations:

"you said you did X. Tell me more about that:…"uh huh", "wow"

Again, when the child has stopped, further cued invitations:

"You said you did Y. Tell me more about that" "OK, and then what happened?"

(Introduce around 5 cued invitations if possible so the child learns, during this phase, that they are to provide the information)

"You've done really well telling me lots and lots of things"

Stage III (Interview about event)

"Now, I'd like to talk to you about the day you visited with someone who was dressed like a pirate here at school. I wasn't in the room and I'd really like you to tell me what happened. Tell me everything you can remember that, from beginning to end."

[wait for a response]

If child responds:

Non directive prompts**: "uh huh", "hmmm", repetition of child's own words**

"Tell me more about that"

"What else can you remember about that?"

"And then what happened?"

Praise attempts to answer rather than correct answers (**"you're doing really well; trying really hard"**)

Follow up child's comments with cued invitations after probing generally for information.

(a): Verbal condition:

"You told me you…(e.g. got a tattoo), respond **"Tell me more about that" "uhuh" etc.**

Ask where only if the child doesn't spontaneously indicate after prompting.

"Where… (e.g. did you get the tattoo)?"

If pointing, state this on tape.

(b): HFD Condition:

When child mentions one of the target activities related to touch, present drawing and lay on table.

"This is a special drawing. This person has arms and legs, and eyes, and a mouth and a nose, just like you. So we'll just put it here".

If child has mentioned target action (E.g. "I got a tattoo") say:

"You got a tattoo? Tell me more about that"

If child mentions touches spontaneously, say:

"You said you got it on your (e.g. arm)**; can you show me where on this picture?"**

(Drawing is used to confirm or clarify detail of verbally reported touch)

OR if child does not mention where they were touched spontaneously, say:

1. "**Show me what happened with** (e.g. that tattoo) **on this picture"**
2. **"Show me on this picture where she put it"**

** If child mentions target action but not where they were touched specifically, first ask "show me what happened with (e.g. that tattoo) on this doll/drawing" (rather than asking where it was put- do this if first instruction fails)

(c): Dolls Condition:

When child mentions one of the target activities related to touch, present doll and lay on table.

"This is a special doll, not a doll you play with. It's got arms and legs, and eyes, and a mouth and a nose, just like you. So we'll just lay him/her here".

If child has mentioned target action (E.g. "I got a tattoo") say:

"You got a tattoo? Tell me more about that"

If child mentions touches spontaneously, say:

"You said you got it on your (e.g. arm)**; can you show me where on this doll?"**

(Doll is used to confirm or clarify detail of verbally reported touch)

OR if child does not mention where they were touched spontaneously, say:

3. "**Show me what happened with** (e.g. that tattoo) **on this doll"**
4. **"Show me on this doll where she put it"**

NOTE 1: If child mentions target action but not where they were touched specifically, first ask "show me what happened with (e.g. that tattoo) on this doll/drawing" (rather than asking where it was put - do this if first instruction fails).

NOTE 2: Each question should be followed by a 10 second pause for child to respond.

Appendix G

Parental Debriefing Statement

Thank you for allowing your child to participate in this experiment.

This study examined how to best help children remember and report details of an event where they experienced benign contact.

Previous research has shown that while children are typically quite accurate in what they remember, it is often difficult for them to report these details in a complete way due to developmental and social constraints (Gordon *et al.*, 1993). Some researchers have found that props (such as dolls and an outline of a human figure) can help children to report these details (Salmon, Bidrose, & Pipe, 1995). However, this research is mixed and has limitations, such as not being able to measure the accuracy of reports (Steward *et al.*, 1996).

In this study, the researchers wanted to measure the accuracy and completeness of children's reports of contact by comparing these reports in a verbal interview only, an interview with dolls, and an interview with an outline of a human figure.

The outcomes of this study may contribute to a body of literature that can guide clinical and forensic interviewers, whose aim is often to gain very accurate and complete accounts from children about events to which they were the only witness.

Thank you again for allowing your child to participate in this research.

Yours sincerely,

Alana Malloy (MSc Student)   Katherine Mackay (honours student)

Karen Salmon, PhD., Dip.Clin.Psych
Senior Lecturer in Psychology

Gordon, B.N., Ornstein, P.A., Nida, R.E., Follmer, A., Crenshaw, M.C., & Albert, G. (1993). Does the use of dolls facilitate children's memory of visits to the doctor? *Applied Cognitive Psychology, 7,* 459-474.

Salmon, K., Bidrose, S., & Pipe, M-E. (1995). Providing props to facilitate children's event reports: A comparison of toys and real items. *Journal of Experimental Child Psychology, 60,* 174-194.

Steward, M., Steward, D., Farguhar, L., & Myers, J. (Eds.). (1996). *Interviewing Young Children About Body Touch and Handling (Monographs of the Society for Research in Child Development*

Appendix H

Coding System

1. Becoming a Pirate

Aspect	Action		Object		Location of Touch	Elaboration
	Touch (AT)	Other (AO)	Touch (OT)	Other (OO)	(L)	(E)
Getting Dressed	She/he/they/the pirate dressed me (up), put on me	Dressing (up), getting dressed, putting on, put round, tied round, I (had to) put on		Pants, shorts, vest/jacket, top, sash, belt, scarf, costume		Pants: Stripy, cut up, too big, black/blue and white, points Vest: Purple, too small, gold bits/lining Sash: Thing round belly/middle/tummy, red Scarf: around neck, tied
Turning into a Pirate	She/he/they/the pirate held/touched/grabbed my shoulders				Shoulders	
Getting Badge	Put it on, pinned it, she put it	I got, had to get, the pirate/they/he/she gave me	Badge		Shoulder, chest, top of arm	

2. Pirate Party Dance

Aspect	Action		Object		Location of Touch	Elaboration
	Touch (AT)	Other (AO)	Touch (OT)	Other (OO)	(L)	(E)
Getting Anklet	She put it round/on, gave me	I got, I had		Anklet, bracelet, ankle thing, bell, bell thing, gold thing	Ankle, foot, leg, other leg/ankle/foot	Gold, sparkly, jingly, had bell/gold bell, noisy, put it on wrong one, changed, strip, for the dance
Learning the dance	(something about linking arms)	I/we did, I/we learn/learnt/learned, he/she/pirate taught me, went like this, did this, went in circles, danced/walked/skipped/went round (in circles),			Arm, elbow, feet, foot	Went/did it/go/goed the other way, it was fun, reference to the bell making noise
Getting the sticker	She/he/they/the pirate put it on (me)/stuck it on (me), gave me	I got, I had, you get/got	Sticker		(Right) hand, fist	Yellow, shiny, sparkly/sparkles/sparkled, (smiley) face, sticky, mouth, eyes, smile,

3. The Pirate Salute

Aspect	Action		Object		Location of Touch	Elaboration
	Touch (AT)	Other (AO)	Touch (OT)	Other (OO)	(L)	(E)
Learning the salute	We put/did together, banging/touching, patting	I/we/the pirate did/done/went like this/that, have/had to, said/ saying Arrr, shake			Fist(s), hand(s), back, shoulder	Pirate (handshake)
Getting the stamp	She/he/the pirate gave me/put it (on)	I got, I had, you get/got	Stamp		(Left) hand, fist	Right/left hand, red, (smiley) face

4. Getting the Treasure

Aspect	Action		Object		Location of Touch	Elaboration
	Touch (AT)	Other (AO)	Touch (OT)	Other (OO)	(L)	(E)
Making the pirate map		We/I made/did/put together				Puzzle, three pieces, drawing on it/picture of room/writing, ref to X (marks the spot/map indicating where treasure is), bin/bucket on it
Finding the treasure		We/I looked/searched/ hunted for/found treasure, dug/digged, opened/unlocked		Bucket/(rubbish) bin, basket sheet/cloth/blanket,		Gold, yellow, shiny, big, (sheet) Black (bin/basket) Brown/small (treasure chest).
Getting the tattoo	She/he/they/the pirate put it (on)/gave me/stuck it (on)	I/you got, I had	(Pirate) tattoo/sticker(s)	(treasure) chest/box	(Right) arm	Came from box/(treasure) chest, description of sticker, there were lots of stickers

Code:

- Whether is free recall [fr] or prompted recall [pr] (differentiate between cued invitations [ci] and direct questions [dq]?)

- Whether identification of touch, objects, etc are correct or erroneous (intrusions [int] or distortions [d])

- If recall is nonverbal [nv] (otherwise assume is verbal)

Don't code:

- Repetitions (of child, or child after interviewer has mentioned)

- Irrelevant information - e.g. going back to classroom, asking about audio and visual equipment, mentions of things related to pirate event but not included in script (e.g. I gave the sticker to my brother)

- Ambiguous or unclear information (unless is given enough context to determine what child is saying)

NOTES:

- If child corrects themselves, correction stands, previous information not coded

- Give credit for correct miming of information

- Once first cue is given, any subsequent information reported by child is considered to be in cued recall