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Running head: PRE-INTERVIEW TRAINING

The Effect of Pre-Interview Training and Warnings on
Children's Eyewitness Testimonies

Julie A. Jost

A report submitted as a partial requirement for the
degree of Bachelor of Arts with Honours
in Psychology at Edith Cowan University

Date of Submission: 30th October, 1998.

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Date: 30/10/98

THE EFFECT OF PRE-INTERVIEW TRAINING AND WARNINGS ON
CHILDREN'S EYE WITNESS TESTIMONIES

Abstract

The present study examined two important issues regarding children's eyewitness testimonies - compliance which is the tendency to agree with misleading questions and the misinformation effect whereby participants incorporate misleading postevent information into their memory recall of the original event. Eighty six primary school children (6-8 years) watched a video, listened to a misleading narrative and were then interviewed individually. To reduce compliance half the children received a pre-interview training package composed of instructions and practice questions with 'neither' and 'don't know' response options. To reduce the misinformation effect children were given a warning that they may have heard some misleading information. The test consisted of five misleading questions, five nonmisleading questions, five control questions and five misled questions. Results indicated that pre-interview training did reduce compliance to misleading questions, however there was also a decrease in correct responses to nonmisleading questions. This may be due to an overgeneralisation of the 'don't know' and 'neither' options or a reflection of the high rate of guessing. There was a misinformation effect, indicating that the children did incorporate the misleading information into their answers. The warning did not reduce the misinformation effect for children in the experimental group. This may be due to a lack of cognitive abilities to retrieve the original information and the demand characteristics of the interview situation. A number of explanations for the findings of the study are discussed. Further research would be beneficial investigating ways of improving children's accuracy and reliability when providing eyewitness testimonies.

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THE EFFECT OF PRE-INTERVIEW TRAINING AND WARNINGS ON CHILDREN'S EYEWITNESS TESTIMONIES

Overview

The number of children appearing as witnesses in court has escalated internationally in the last fifteen years, primarily due to an increase of physical and sexual abuse allegations (Ceci & Bruck, 1993). These increases in court appearances raise questions as to the accuracy and reliability of children's memory when appearing in a court of law (Baxter, 1990; Flin & Spencer, 1995).

Young children are not expected to have the same "memory ability or cognitive sophistication of adults" (Goodman & Schwartz-Kenney, 1992, p. 18) yet evidence suggests that children have the basic memory abilities to testify in a court of law (Flin & Spencer, 1995). Previous research has found that even 3-year-olds can provide accurate information about personally experienced, real-life events in some situations and under certain circumstances (Fivush, Gray & Fromhoff, 1987; Jones & Krugman, 1986).

The accuracy of a child's testimony can be influenced by the interviewer's questioning technique (Warren & McGough, 1996; Yuille, 1988). Free recall results in the most accurate form of memory recall but also errors of omission (Davies, Tarrant & Flin, 1989; Dent, 1991) due to children's inability to spontaneously recall events (Hamond & Fivush, 1990). Specific questioning may therefore be necessary to elicit more details (Batterman-Faunce & Goodman, 1993; Saywitz, Goodman, Nicholas & Moan, 1991) but unfortunately this results in errors of commission, in part it has been suggested, due to children's suggestibility (Batterman-Faunce & Goodman, 1993). Suggestibility is thus an area of concern regarding children's eyewitness testimonies and is defined as "the extent to which the encoding, storage

and reporting of events can be influenced by a range of social and psychological factors" (Ceci & Bruck, 1993, p. 404). Suggestibility can be divided into two phenomena: compliance (agreeing with misleading questions when asked) and suggestibility (the later effect of misleading information). Leading questions actually imply the correct answer in the question e.g. "The man had a beard, didn't he?" when the man did have a beard (Myers, 1992). Misleading questions mislead the client by implying an incorrect answer e.g. "The man had a beard, didn't he?" when the man did not have a beard, or by asking a question which contains incorrect information e.g. "What was the time on the clock?" when there was no clock present (Goodman & Schwartz-Kenney, 1992).

The use of leading and misleading questions in interview situations raises the issue of compliance which is "the general tendency of individuals to comply with requests and obey instructions that they would rather not do, for some immediate instrumental gain" (Gudjonsson, 1990a, p. 227). Compliance is an extremely important issue when examining children as children are more vulnerable to social pressures in interview situations (Baxter, 1990). These social pressures include the demand characteristics to agree with an adult authority figure (Moston, 1990) and responding to every question even if unsure of an answer (Dent & Stephenson, 1979). The first component of the present study will examine these social pressures that accompany the interview situation with the goal to reduce children's compliance through the use of a pre-interview training package.

Misleading postevent information or the "misinformation effect" is also an important component of eyewitness research on suggestibility. By definition, the misinformation effect is "the finding that subjects who are exposed to misleading suggestions after viewing an event are likely to report this information on later tests of memory for the event" (Zaragoza, 1987, p. 55). This is especially important when

examining children as children are often subjected to multiple interviews (Goodman & Schwartz-Kenney, 1992) by a wide range of people e.g. social workers, police and lawyers (Ceci & Bruck, 1996; Zaragoza, 1991) and are therefore likely to encounter misleading postevent information (Zaragoza, 1991). Previous research has revealed that warning adults about misleading postevent information can reduce the misinformation effect (Christiaansen & Ochalek, 1983). There have been no studies though that have investigated whether a warning can have similar effects on children. Therefore, the second component of the present study will investigate whether warning children about misleading postevent information will reduce the misinformation effect.

Compliance

The use of leading and misleading questions in interview situations raises the issue of compliance. Developmentally, research consistently shows that young children are more compliant than older children and adults (Cohen & Harnick, 1980; Warren, Hulse-Trotter & Tubbs, 1991). Children may be more compliant due to a number of cognitive, social and psychological factors (Ceci & Bruck, 1993). Dent (1991) notes that children are more likely to be influenced by leading questions when a) asked questions about people, rather than events; b) when they are forced to provide more information; c) when their original memory of the event is weak; d) if long delays have occurred; e) if the interview is stressful; and f) if the interviewer is inexperienced.

Thus some researchers have noted that children can be very resistant to leading and misleading questions in certain situations. Rudy and Goodman (1991) found that children as young as 4 years of age can be resistant to leading questions that

involved abusive actions and Goodman and Reed (1986) found that children can resist leading questions that concern salient, real life events.

Goodman and Schwartz-Kenney (1992, p. 19) note that suggestibility is not a stable trait, but rather "varies in accordance with the circumstances of the interview." Children's memory abilities can therefore be enhanced when recall concerns familiar events, when interview tasks are simplified, when surroundings are comfortable and when the social/psychological environment is supportive (Goodman & Schwartz-Kenney, 1992).

To obtain the most reliable testimony from a child cognitive, social and psychological factors must be addressed. The cognitive factors that may limit a child's recall abilities include a lack of comprehension skills due to a limited knowledge base and a lack of rehearsal and mnemonic strategies to aid encoding and retrieval strategies (Loftus & Davies, 1984). Whilst these factors are definitely of importance, the social and psychological factors that accompany the interview situation are much more easily manipulated (Baxter, 1990). Reducing these social and psychological factors may therefore reduce children's compliance and increase the accuracy of children's testimonies. Gudjonsson and Clark (1986, cited in Baxter, 1990) note that even a highly suggestible witness can give a reliable testimony if carefully interviewed. This important point is highlighted by Baxter (1990, p. 393) who notes:

"a main problem with child witnesses is that they are vulnerable to a much broader range of social pressures than are adults, such that this kind of pressure plays a disproportionately large role in determining children's responses to questioning. If this is the case then it may be that the reliability of children's testimony could be substantially enhanced by ensuring that, at least during formal questioning, social pressures on children to answer questions in

particular ways are identified and minimised".

Demand Characteristics

Children perceive adults as sincere, honest and reliable conversational partners (Garvey, 1984, cited in Ceci & Bruck, 1993). Children do not view adults as deceptive and do not think adults will try to trick them (Saywitz & Moan-Hardie, 1994). This is often a logical conclusion as young children have typically only had conversations with supportive parents, family members or teachers (Saywitz & Moan-Hardie, 1994).

Children expect adults to only ask questions to which they already know the answer and will therefore "trust the adult's knowledge base more than their own" (Saywitz & Snyder, 1993, p. 131). This may be due to the interviewer's credibility, as children see adults as respectable, authority figures (Moston, 1990). Children may feel they cannot question the interviewer's knowledge or expertise and will comply to please the adult or avoid the interviewer's anger (Saywitz & Moan-Hardie, 1994).

Children will even attempt to answer almost any question if asked by an adult interviewer. This was investigated in a study conducted by Hughes & Grieve (1980), in which 5 and 7 year old children were asked bizarre questions e.g. "Is milk bigger than water?;" "Is red heavier than yellow?" The children attempted to answer these bizarre questions when pressured and, when asked by the interviewer, even justified their answers.

Children and adults are rarely told in interviews that they do not have to respond to every question (Cohen & Harnick, 1980; Dent & Stephenson, 1979). Survey research conducted on adults has found that participants will respond to topics they have no knowledge about, as they feel an answer is necessary (Foddy, 1994). Most

surveys do not offer a 'don't know' or 'no opinion' alternative in the question format, therefore participants are forced to provide a response (Schuman & Presser, 1981). Survey data conducted on adults investigating obscure topics (Schuman & Presser, 1981) and fictitious issues (Bishop, Tuchfarber & Oldendick, 1986) revealed that approximately 30% of respondents will give a substantive response, even if they did not know the correct answer. Providing substantive answers when unsure may cause systematic and random errors in the data set (Converse, 1970, cited in Schuman & Presser, 1981). A 'don't know' or 'no opinion' alternative may rectify this problem as it may decrease the demand characteristics for participants to guess or make up an answer (Davies et al., 1989; Moston, 1987).

Due to the social pressures placed on children, the need to supply an answer to every question is even greater than for an adult (Baxter, 1990). Children will not question the interviewer's expertise if they are unsure of the question content (Saywitz & Snyder, 1993). They will guess or make up their answer, rather than give no response at all, especially if 'don't know' or 'no opinion' responses don't seem to be acceptable (Cohen & Harnick, 1980; Hughes & Grieve, 1980). This is highlighted in a study conducted by Cohen and Harnick (1980) on children and adults who were asked suggestive questions regarding a purse snatching incident. When the participant did not provide an answer to the experimenter's suggestive question, the question was repeated until the participant gave an alternative response. The study conducted by Hughes and Grieve (1980) regarding the bizarre questions also did not allow 'don't know' answers as valid responses. It must be noted that a number of children did answer 'don't know' when first questioned. This response was not acceptable though and the question was repeated until the child provided an answer. The children did not have an answer to the question but due to the repeated questioning from the interviewer they succumbed to the demand characteristics of

the interview situation. To rectify this problem in interview situations, children should be told that it is all right to answer 'don't know' if they are unsure (Moston, 1987) and to respond with 'neither' or 'no response' if they feel there is no correct answer (Davies et al., 1989).

Initial Attempts to Reduce Compliance

A number of researchers have attempted to reduce compliance by examining source credibility (Kwock & Winer, 1986), implementing warnings (Warren et al., 1991) instructing participants to respond 'don't know' (Moston, 1987; Mulder & Vrij, 1996) and instructing participants to give 'no response' if unsure (Davies et al., 1989).

Source Credibility

The credibility of the interviewer was investigated by Kwock and Winer (1986) who conducted an experiment on 9 and 12 year old children. Half of the participants were asked misleading questions by an adult and the other half by their peers. It was hypothesised that those interviewed by their peers would feel less pressure to comply with the misleading questions than those interviewed by the adult. The results of the study revealed that the 9-year-olds were less likely to be misled if interviewed by a peer than an adult. This effect was not found with the 12-year-olds though, revealing that 12-year-olds may be more resistant to the source credibility of the interviewer than 9-year-olds. Twelve-year-old children may be developmentally mature enough to know that they can question an adult's expertise and therefore may be less likely to comply with misleading questions. Nine-year-olds, on the other hand, may be more willing to agree with an adult interviewer as they view the adult as an authority

figure who only asks logical questions.

Warnings

Warning participants that some questions may be tricky has been used as a supplemental means of reducing suggestibility. Warren and colleagues (1991) conducted a study on 7-year-olds, 12-year-olds and adults who were told a story by a conservatively dressed, male experimenter who placed himself behind a large desk to appear as an authority figure. Half of the participants were then warned that some of the questions were tricky and were cautioned to think very carefully about their answers. The participants were then tested on their free recall of the story and then asked twenty questions. Of the twenty questions, five were leading questions, five were affirmative questions, five were false alternative questions and five were nonmisleading questions. Results revealed that across all age groups the warning had a small, but significant, effect on reducing compliance to leading questions. It must be noted that the children in this study were interviewed individually by the adult behind the desk which would have increased the demand characteristics of the children to comply with the interviewer. In comparison, the adults were interviewed in groups therefore the demand characteristics would have been greatly reduced. Comparison of age differences in this study therefore should be treated with caution.

Don't Know Responses

Instructing participants to respond 'don't know' if they are unsure of an answer may reduce compliance to misleading questions. Warnick and Sanders (1980) conducted a study investigating eyewitness identification accuracy of adult participants. Participants watched a video that involved a male competitor cheating and then had to pick the accused from a line-up questionnaire. Participants were

then split into four groups. Group 1 had to choose their suspect from a list numbered 1-6, group 2 had the 1-6 options and a 'don't know' option, group 3 had the 1-6 options, a 'don't know' option and written instructions not to guess and group 4 had the 1-6 options, a 'don't know' option, written instructions and also received verbal instructions not to guess. The results of the study revealed that providing a 'don't know' option clearly reduced the false identification rates of participants. These results highlight the importance of 'don't know' responses in adult participants and it would therefore be interesting to see if similar results were found in children.

Moston (1987) conducted a study investigating 'don't know' responses on 6 to 10-year-old children who viewed a live event at their school assembly. Before answering a number of misleading and nonmisleading questions, half of the children were instructed to respond 'don't know' if they were unsure of the answer. Results revealed that the children in the experimental group did not have a greater number of 'don't know' responses and were no more accurate than the children in the control group. Surprisingly, the children in the control group gave a number of 'don't know' responses without being instructed to. Moston (1987) had two possible conclusions for his results - 1) the instruction to respond 'don't know' may not have been explained clearly enough for children of this age and 2) the testing environment may have influenced the results. He conducted his study in a school where children may feel more comfortable with the 'don't know' response as it is a warm, familiar environment. If the study had been conducted in a laboratory the results may have been different, as an unfamiliar environment may result in increased demand characteristics.

Mulder and Vrij (1996) also conducted a study investigating the 'don't know' response on 4 to 5 and 8 to 10-year-old children. Children viewed a live event involving an altercation between two confederate actors. Half of the children were then explicitly told that they could respond 'don't know' if they were unsure of an

answer. The children were then interviewed individually with three misleading questions and one open-ended question. Results indicated that those children instructed to answer 'don't know' gave fewer incorrect responses than those children in the control group (21% versus 46%) and answered more questions with the 'don't know' response (33% versus 16%). These results were nearly identical in both age groups indicating that the younger children could follow the instructions to respond 'don't know' as well as the older children. A more explicit 'don't know' option may therefore be necessary than that used in the Moston (1987) study.

'Neither' Response Option

An area that has been lacking in eyewitness research is the option to respond 'neither' or 'none' if the participant feels that all the forced choice options are incorrect. This is especially applicable when participants are asked misleading questions. Participants are often told that they can respond 'don't know' if they are unsure of an answer but are not given another option if they do know the answer and believe the experimenter is wrong. Participants may be confused as they know the experimenter is incorrect but also don't want to respond 'don't know' as they actually do know the answer. They may therefore guess by responding with the incorrect answer as they feel they cannot question the interviewer's expertise. Offering participants a 'neither' response would alleviate this problem and provide more information in applied settings. A review of the literature only located one study where participants were given a 'none of the above' option. Davies and colleagues (1989) conducted a study on 6 to 7 and 10 to 11-year-old children who participated individually in a simulated health inspection by an adult stranger. One week later the children had to pick the male health inspector from a photospread of eight adult males. Half of the participants also had, in addition to the eight photos, a line drawing of a man called 'Mr Nobody.' Results revealed an increase in the number of

children who pointed at 'Mr Nobody' but unfortunately, as in the Moston (1987) study, there was not an increase in accuracy. Davies and colleagues (1989) concluded that children's poor performance in eyewitness identification tasks may not be due to social factors as earlier studies had suggested but may be the result of cognitive deficiencies. These findings highlight the need for further research investigating the social pressures for children to respond if they feel that the answer options are incorrect.

The above mentioned studies highlight the fact that reducing children's compliance is no easy task. Whilst warning children about tricky questions may slightly increase resistance (Warren et al., 1991), instructing children to respond 'don't know' or 'no response' has produced mixed results (Moston, 1987; Mulder & Vrij, 1996; Davies et al., 1989). Altering the source credibility of the interviewer can reduce compliance but using children to interview children is not really a practical solution (Saywitz & Moan-Hardie, 1994; Spencer & Flin, 1993). What can be done then to reduce children's compliance to suggestive questions and increase the accuracy of their testimonies? Pre-interview training is a method that incorporates more than one strategy as a means of reducing children's compliance to misleading questions. Rather than just a warning (Warren et al., 1991) or just instructions to respond 'don't know' (Moston, 1987) or 'neither' (Davies et al., 1989) participants are given a combination of these strategies to reduce their compliance in interview situations.

Pre-Interview Training Packages

Research has revealed that compliance can be reduced by implementing pre-interview training packages (Gee, Gregory & Pipe, in press; Saywitz & Moan-Hardie, 1994). Training packages have several advantages including reducing the

child's emotional distress and establishing rapport (Saywitz & Snyder, 1993), emphasising the importance of don't know answers (Saywitz & Moan-Hardie, 1994) and reducing suggestibility to misleading questions (Gee et al., in press).

Saywitz and Moan-Hardie (1994) investigated the effects of misleading questions by using a pre-interview training package with 7-year-old participants. Participants watched a live, staged event which involved an altercation between confederate actors in their classroom. Half of the children then participated in the pre-interview training exercise which consisted of instructions about responses, a practice session, visual reminders, feedback and a review. The results indicated that the pre-interview training significantly reduced errors to misleading questions.

Gee and colleagues (in press) implemented a much simpler pre-interview training package on 9-13 year old participants who were interviewed about a salient, real life event. A simpler package was advantageous as it was less time consuming and more appropriate for use in an applied setting (as noted by Gee et al., in press). The package consisted of instructions not to guess or make up answers and a set of practice questions. Results indicated that the pre-interview training significantly reduced the number of errors to misleading questions.

A problem that has arisen in the above mentioned studies is not only a decrease in errors to misleading questions but also a decrease in correct responses to nonmisleading questions. The children seem to be more hesitant to give correct answers due to an overgeneralisation of the 'don't know' response (Gee et al., in press, Study 1; Saywitz & Moan-Hardie, 1994, Study 1). This was rectified in Gee et al., (in press, Study 2) and Saywitz and Moan-Hardie (1994, Study 2) by emphasising to the children that they definitely would know some of the answers and reinforcing correct answers to nonmisleading questions.

The present study aims to partially replicate the results of the Gee and colleagues (in press) study by implementing a brief pre-interview training package

on 6 to 7-year-old children. These participants are younger than the 9 to 13-year-old children used in the Gee and colleagues (in press) study so it will be of considerable interest to see if similar results are obtained. The children will be instructed to answer 'don't know' if they are unsure of the answer. In addition, the children will be instructed to answer 'neither' if they feel both responses are wrong, an important issue that has been neglected in previous research. To circumvent any problems remembering the instructions, the 'don't know' and 'neither' options will be given for each question. It will also be emphasised to the children that they will definitely know some of the answers, to avoid an overgeneralisation of the 'don't know' or 'neither' response.

Misleading Postevent Information

The effect of misleading postevent information or the "misinformation effect" is a second important component of eyewitness research. As noted, the misinformation effect is the phenomenon whereby participants are told misleading information about an event and then incorporate this information into their answers about the original event (Zaragoza, 1987). Research investigating the misinformation effect has found that participants who have been misled choose the misleading information more than control subjects who have not been misled (Loftus, Miller & Burns, 1978; Loftus & Palmer, 1974).

The standard method of examining the effect of misleading postevent information involves showing participants a live event, slides or a video, exposing participants to misleading postevent information and then testing participants about the original event (Bekerian & Bowers, 1983; Christiaansen & Ochalek, 1983; Loftus et al., 1978; Loftus & Palmer, 1974). There has been conflicting results

regarding the fate of original memory after exposure to postevent misinformation, resulting in a number of different theories.

Memory Alteration Theory

The "memory alteration theory" developed by Loftus and colleagues suggests that the postevent misleading information alters or overwrites the original information (Loftus et al., 1978; Loftus & Loftus, 1980; Loftus & Palmer, 1974). This hypothesis has been supported in a number of experiments, the most well known being the study conducted by Loftus and colleagues (1978). In their study, adult participants viewed a series of slides depicting a number of stages of an automobile accident involving a stop sign. Half of the participants were then exposed to misleading information stating that the accident occurred at a yield sign and not a stop sign. Participants were then questioned as to whether the accident occurred at a stop or a yield sign. Those participants that had been misled were more likely to choose the yield sign than the stop sign. When taking into account the accuracy of the participant's responses (e.g. 50% chance of choosing the correct answer) the results were still significant, with misled participants performing significantly worse than chance.

Loftus and colleagues (1978) also varied this experiment to investigate a number of different hypotheses. They examined the issue of demand characteristics by asking participants to state both what they saw in the slides and what their questionnaire mentioned. Their results indicated that minimising demand characteristics in this way did not influence participant's responses, the memory alteration hypothesis was still supported. They also found that the delay between the postevent information and the final test was important with results indicating a greater misinformation effect if misleading information was presented just prior to the recognition test, rather than just after the initial test. Time delays result in weaker

memory traces which are easier to alter, supporting the memory alteration hypothesis. Finally, they investigated whether the original information was actually encoded, with results revealing that participants did indeed encode the traffic sign when viewing the slides. So, although there is evidence that the original memory has actually been encoded, the postevent information renders this inaccessible, supporting the memory alteration theory.

Another interesting finding by Loftus and colleagues concerns the participant's confidence rating. It has been found that misleading information does not result in lower confidence ratings for misled questions. Surprisingly, participants display increased confidence for misled questions. Participants therefore are not deliberating between the information from the original event and the misleading postevent information (Loftus, Donders, Hoffman & Schooler, 1989).

Coexistence Theory

The "coexistence theory" states that the misleading information does not alter the original memory but rather, renders the original memory inaccessible or difficult to retrieve (Bekerian & Bowers, 1983; Christiaansen & Ochalek, 1983). The original information and misleading information both remain in memory, and with the correct retrieval cues the original information may be retrieved (Bekerian & Bowers, 1983; Christiaansen & Ochalek, 1983).

Christiaansen & Ochalek (1983) conducted a study on adult participants who were shown a slide sequence of a shoplifting event. An initial accuracy test was then given to determine whether the original information was definitely encoded. Only those participants who were accurate in this test were included in the remaining phases of the study. Participants then read a misleading narrative that contained four critical items. After the narrative, half of the participants were given an explicit warning that some of the information was incorrect, before participating in a final

recall test. Results revealed that participants could overcome the biasing effects of misleading postevent information when given the warning up to 45 minutes after reading the story. Participants could edit out the incorrect information even though the warning had occurred after they had read the postevent misleading information, providing evidence that both the original and postevent information must coexist in memory.

Bekerian and Bowers (1983) also provide evidence for the coexistence theory in their study that focused on retrieval cues. Recognising that previous research had involved original events that were always in a sequential order (e.g. Loftus et al., 1978; McCloskey & Zaragoza, 1985) they hypothesised that if the test slides were presented in a random order participants may have more difficulty accessing the original event. Their hypothesis was supported with a greater misinformation effect for participants who had viewed the test slides in a random order. Participants that were presented the slides in a sequential order were able to overcome the biasing effects of misleading information as they had retrieval cues to access the original information.

Misinformation Acceptance Hypothesis

The "misinformation acceptance hypothesis" provides evidence that misleading postevent information does not alter the original event or make it inaccessible, but rather is the result of gap-filling strategies and demand characteristics (McCloskey & Zaragoza, 1985; Zaragoza, 1987; Zaragoza, McCloskey & Jamis, 1987).

McCloskey and Zaragoza (1985) note that participants often do not encode the original detail or have forgotten it by the time they are misled. Control subjects will therefore have a 50% chance of choosing the correct answer in a forced choice test. Misled subjects, who also cannot remember the original detail, will have a greater

chance of remembering the misleading information and choosing the incorrect answer. Misled subjects will fill the gap in their memory by providing the wrong response as they are not aware whether they remember the original detail or the misleading information. Misled subjects may also choose the misleading alternative as they want to be viewed favourably by the experimenter and trust the experimenter's knowledge more than their own memory (Zaragoza, 1987). The participant feels that the experimenter is an expert about the event and therefore chooses the misleading information to please the experimenter (McCloskey & Zaragoza, 1985). This is known as the 'deliberation hypothesis' as the participant knows that the misleading information is incorrect and deliberates between the original and misleading information, before choosing the incorrect information to please the experimenter (McCloskey & Zaragoza, 1985; Zaragoza, 1987).

To rectify the problem of demand characteristics McCloskey and Zaragoza (1985) developed the modified test procedure. In this test the misleading information is not provided as an alternative, rather participants must choose between the original item and a new item. By not providing the misleading information in the recall test the demand characteristics to agree with the experimenter are reduced. In addition, the likelihood of misled subjects choosing the misleading alternative because they cannot remember the original detail is eliminated (Zaragoza, 1991).

A number of studies have been conducted on adults using the modified test procedure and these have failed to show a misinformation effect, suggesting that misleading information does not cause memory impairment (McCloskey & Zaragoza, 1985; Zaragoza et al., 1987). Four studies have been conducted on children using the modified test procedure which have produced conflicting results. Zaragoza (1987, 1991) and Toglia, Hembrooke, Ceci and Ross (1994) conducted studies on children ranging in age from 3 to 6 years and did not find evidence of any

memory impairment. Misled participants performed just as accurately as control subjects in all three studies. In contrast, Ceci, Ross and Toglia (1987) conducted a study on 3 to 4 year olds and did find that children were susceptible to misleading information, even when tested with the modified test, therefore providing evidence that preschool children's memories may be impaired.

Discrepancy Detection Hypothesis

The discrepancy detection hypothesis was investigated by Tousignant, Hall and Loftus (1986) who hypothesised that if discrepancies between the original event and the misleading information are detected the misinformation effect will be reduced. In their study, adult participants viewed a slide sequence and then read a misleading narrative. Half of the subjects were instructed to read the narrative slowly while the other half were not given these instructions. Participants were then given a recall test about the original slide sequence. Results revealed that participants who read the narrative slowly were more resistant to the misleading information as they were more likely to detect discrepancies between the original slides and the misleading narrative.

Greene, Flynn and Loftus (1982) utilised a warning in their study, to examine whether participants could detect discrepancies between the original event and the misleading postevent information. The warning was either given before the misleading narrative or after the misleading narrative. The results revealed that participants could detect discrepancies when given the warning before the misleading narrative. Participants scrutinised the narrative more carefully as they were aware that it involved misleading information. There was not a significant effect though if the warning was given after the misleading narrative. These results therefore do not support the coexistence theory proposed by Christiaansen and Ochalek (1983). In the Christiaansen and Ochalek (1983) study participants could

overcome the biasing effects of misinformation even if the warning was given 45 minutes after the misleading postevent information.

Source Monitoring Theory

"Source monitoring theory" focuses on the decision making processes that participants use when trying to remember where the source of their memory originated from (Lindsay, 1990). These decision making processes use the available information (e.g. original event and misleading information) and the more general knowledge from memory to assign the memory to a particular source (Lindsay, Gonzales & Eso, 1995). Source monitoring differs from the "memory alteration theory" as misleading information need not have any effect on the original information (Lindsay & Johnson, 1989). It also differs from the "misinformation acceptance hypothesis" because participants may have confusions regarding the source of their memory, whether the original detail is remembered or not (Lindsay & Johnson, 1989).

Source monitoring errors occur when subjects confuse the misleading information source with the original source they witnessed (Lindsay, 1990; Zaragoza & Lane, 1994). Source monitoring errors are more likely when the original memory trace is weak, when the memory characteristics of the original event and the misleading information are similar and if the participant makes quick decisions without great thought and deliberation (Lindsay, 1990; Lindsay et al., 1995).

A number of studies have investigated the source monitoring theory by following the standard misinformation paradigm (e.g. slides, misleading narrative, recall test) and then asking participants to identify the source of their memories (Lindsay & Johnson, 1989; Zaragoza & Koshmider, 1989). Lindsay and Johnson (1989) conducted an experiment where adult participants watched a slide sequence and then heard a misleading narrative. Half of the participants were administered a

yes/no recognition test whilst the remaining half completed a source monitoring test where they had to state the source of their memories. Results revealed a significant misinformation effect for participants given the recognition test but not participants given the source monitoring test. Participants given a recognition test seem to misidentify their memory sources whereas a source monitoring test forces participants to search their memories more effectively for the correct information. Lindsay and Johnson (1989) note that these results are similar to Christiaansen and Ochalek's (1983) warning study whereby participants are capable of editing out incorrect information if given warnings or instructions to search their memories more thoroughly.

A similar study conducted by Zaragoza and Koshmider (1989) also found similar results to Lindsay and Johnson (1989) but they related their findings to the demand characteristics hypothesis developed by McCloskey and Zaragoza (1985). They believe the source monitoring test reduced the demand for participants to report having seen the details from the misleading narrative.

Lindsay (1990) noting the discrepancies between these studies designed a study which examined both source monitoring and demand characteristics. The design was similar to previous studies except for one important addition. Before the final test adult participants were explicitly told that the information in the narrative was wrong and they should not report any of these details in the final test. The aim of the warning was to reduce the demand characteristics for participants to report having seen the details from the misleading narrative. The results of the study did not support the demand characteristics hypothesis. Even though participants were warned about the incorrect information in the narrative, they still reported these details on the test. Participants must therefore confuse the true source of the misleading information, resulting in a higher probability of reporting the misinformation.

Summary of Theories

The misinformation effect is an area of eyewitness research that has revealed conflicting results regarding the fate of original memory. The original memory may be overwritten by the misleading postevent information (Loftus et al., 1978) or it may coexist with the misleading postevent information (Christiaansen & Ochalek, 1983). Alternatively, the misleading postevent information may not alter the original event or make it inaccessible, but rather gap-filling strategies and demand characteristics may play an important role (McCloskey & Zaragoza, 1985). The decision making processes at the time of retrieval are also of importance (Lindsay, 1990) as are methods to detect the discrepancies between the original event and the misleading postevent information (Tousignant et al., 1986).

Evidence is available to support all the above theories and as of yet the fate of original memory has not been resolved. Cognitive, social and situational factors are all important contributors and therefore it is difficult to isolate one single theory to explain the misinformation effect (as noted by Gee, 1993). Further research investigating the fate of original memory after exposure to misleading postevent information and whether children and adults show the misinformation effect for the same reasons would be advantageous, especially with the increasing number of children providing eyewitness testimonies.

Children's Susceptibility to Misleading Postevent Information

On an applied level an important question for research is how the misinformation effect can be minimised, particularly for children. Although age differences are not observable in experimental situations the misinformation effect is still of considerable concern when children are eyewitnesses (Gee, 1993). As noted

previously, children are often interviewed about the original event by a number of different professionals (Ceci & Bruck, 1996), and the child witness may be at an increased risk of encountering misleading postevent information and incorporating this into their recall of the original event (Zaragoza, 1991). There is concern, as Baxter notes (1990, p. 393) that "children are especially likely passively to absorb any information which appears to concern an event which they have witnessed, such that they will subsequently incorporate that information into their accounts of the event."

Children may be susceptible to misleading postevent information due to a range of cognitive and social factors. Children may lack cognitive strategies to encode and store the original detail (Loftus & Davies, 1984). If the original memory trace is weak or nonexistent it is more likely that the misleading information will replace the existing information, resulting in an alteration of the original memory (Brainerd & Reyna, 1988). Children also have very high rates of forgetting so if the misleading information is more recent, it will be more accessible than the original memory (Loftus & Davies, 1984).

Children also have difficulties in the retrieval stages as they do not search their memories for the desired information (Loftus & Davies, 1984) or organise material in a logical manner for later recall (Flavell, Miller & Miller, 1993). Children also lack rehearsal strategies and semantic processing skills to assist them retrieve earlier memories (Flavell et al., 1993). Children will therefore choose the misleading information as it is more recent and accessible in their memories (Loftus & Davies, 1984). However, it is also possible that in experimental situations children's less sophisticated memory abilities reduce recognition of the misinformation, actually counteracting the misinformation effect (Gee, 1993).

In addition to children's inferior cognitive abilities there may also be a number of social pressures that influence children to choose the misleading information. As noted when discussing compliance, these include the demand characteristics of children complying with adult authority figures (Moston, 1990) and trusting the interviewer as an honest and sincere conversational partner (Garvey, 1984, cited in Ceci & Bruck, 1993). Children will not question the interviewer's knowledge (Saywitz & Snyder, 1993) and will comply to please the interviewer as they want to be viewed as a favourable participant (Saywitz & Moan-Hardie, 1994).

Ceci and colleagues (1987) conducted a study illustrating the role of adult authority figures in producing the misinformation effect. The study consisted of 4-year-old children who were presented with a short story and illustrations. The next day the children were told misleading information by either an adult or a 7-year-old child and then two days later the children were questioned. Results revealed that the children told the misleading information by the 7-year-old were less suggestible than those told by the adult. The children did not comply as readily to the 7-year-old as the demand characteristics of the interview situation were reduced.

In summary, children may be susceptible to misleading postevent information due to a range of cognitive and social factors. This raises the possibility that warning children about incorrect information may reduce these factors and enable children to overcome the biasing effects of misleading postevent information, resulting in a more reliable and accurate eyewitness testimony.

Warnings

As noted above, a number of studies have investigated the effect of warnings on misleading postevent information on adult participants (Christiaansen & Ochalek, 1983; Green et al., 1982; Lindsay, 1990). Christiaansen & Ochalek (1983) found

that adults could overcome the biasing effects of misleading postevent information when given a warning up to 45 minutes after the misleading narrative. Green and colleagues (1982) found that adults could detect discrepancies in the misleading postevent information when given the warning before the misleading narrative but not when the warning was given after the misleading narrative. Lindsay (1990) found that warning participants that the information in the narrative was wrong did not reduce the 'misinformation effect.' Even though participants were warned about the incorrect details in the misleading narrative, they still reported these details on the final test.

The results of these studies have produced conflicting results regarding instructions, warnings and demand characteristics. Do instructions or warnings allow participants to search their memory more effectively for the correct response? Are instructions or warnings effective in reducing demand characteristics to report details from the misleading information?

The present study will investigate whether warning children about misleading information will reduce the misinformation effect. Previous research with warnings has only been conducted on adults (Christiaansen & Ochalek, 1983; Green et al., 1982; Lindsay, 1990) and the present study will be the first to investigate whether similar results are found with children. Warnings may be especially important for children to counteract the greater demand characteristics of the interview situation (Baxter, 1990).

The Present Study

The aim of the present study is to investigate the effect of pre-interview training and warnings on children's recall performance. The study will investigate two important components -

- 1) The effect of a pre-interview training package on children's compliance to misleading questions and
- 2) The effect of a warning on the 'misinformation effect' in children after being exposed to misleading postevent information.

A number of studies have investigated the effect of pre-interview training (Gee et al., in press; Saywitz & Moan-Hardie, 1994) and warnings (Warren et al., 1991) on children's recall performance but these have involved the use of misleading questions. The children have not actually been previously exposed to misleading postevent information. Studies regarding warning participants about misleading postevent information have also been conducted but these have only involved adult participants (Christiaansen & Ochalek, 1983, Green et al., 1982; Lindsay, 1990). There have been no studies that have integrated these two important components of eyewitness research.

In the present study 6 to 7-year-old children will watch a video about a little aboriginal girl. The next day the children will be exposed to a misleading postevent narrative about the video which contains five items of misleading information. Prior to the interview half of the children will then be warned that they may have heard some wrong information after the video to examine the effects of warnings on the misinformation effect. These children in the experimental group will then have pre-interview training which involves instructions and practice questions with the aim to reduce compliance to misleading questions.

Therefore, the hypotheses of the present study are -

- 1) that pre-interview training will reduce compliance to misleading questions and hence reduce the number of errors and
- 2) a warning will reduce the number of errors for misled items when children are given postevent misleading information.

METHOD

Participants

Participants were 86 grade two children who were recruited from three private primary schools and one day care centre in the northern suburbs of Western Australia. The children ranged in age from 6 years 5 months to 8 years 2 months ($M = 7$ years 1 month, $SD = 0.34$) and consisted of 45 males and 41 females. Letters of explanation outlining the study were sent to the principals of the primary schools asking for their permission to conduct the study (Refer to Appendix A). Once permission was granted consent forms were given to the children to take home to their parents or guardians. Only those children returning signed consent forms participated in the study (refer to Appendix B). The children were randomly assigned to either the experimental group - pre-interview training and warning ($N = 43$) or the control group - no pre-interview training and warning ($N = 43$).

Materials

Video: A children's video titled 'Banduk' was used as the stimulus. This video was produced by the Australian Children's Film Corporation and was edited to run for approximately 14 minutes. The video involves a little aboriginal girl called 'Banduk' who uncovers a bird smuggling operation. The video had previously been reported to be interesting and appropriate for children of this age and the teachers also approved as it involved environmental issues.

Narrative Story: The 'Banduk' video was transcribed into a narrative story which provided a summary of the main storyline and took approximately three minutes to read. Two versions of the narrative were used which were counterbalanced across participants (Refer to Appendix C for Narrative Story 1 and

Appendix D for Narrative Story 2). Each version contained five critical items which were chosen as the items to be used as misinformation. The critical items were:

- Story 1 - The number of tubes the man was carrying
 The colour of the brother's t-shirt
 What was in the back of the icecream van
 What was in the last parcel opened
 The musical instrument Banduk was playing in the band
- Story 2 - The little girls footwear
 The tool used to dig for the crabs
 The method used to carry the crabs
 The icecream woman being caught by the police
 The colour of Banduk's skirt

An example of the misinformation manipulation is what the little girl wears on her feet. In the video the girl is wearing no shoes therefore the original or correct item is *bare feet*. In Story 2 it states that the little girl is wearing a dress with no sleeves and *sandals* therefore this item is misled. In Story 1 it states only that the little girl was wearing a dress with no sleeves, with no mention of footwear, therefore this is a control item.

Questionnaire: A questionnaire was composed which consisted of 20 forced choice questions (Refer to Appendix E). In the training condition each question had four answer options - two related to the video or story, a 'don't know' option and a 'neither' option. In the control condition each question had only two answer options which were those related to the video or story.

Ten of the questions involved the critical items from the misleading narrative. The narrative the participant heard determined whether the critical item question was a critical misled question (in which the item was involved in the misleading narrative) or a critical control question (which was not involved in the misleading

narrative).

An example of this is the little girl's bare feet. One of the critical questions was "What was the little girl wearing on her feet?" with the answer options being sandals or bare feet. As Story 1 does not mention footwear at all for the children who had heard Story 1 this was therefore a critical control question. Story 2 states that she was wearing sandals so for those children who had heard Story 2 this was a critical misled question.

The remaining ten questions involved noncritical items which were never involved in the misleading narrative. These questions included five misleading questions where a 'neither' response was the correct answer. An example of a misleading question is where the children go to sell the crabs. In the video they actually sell the crabs at a minesite. The question "Where did the kids go to sell the crabs?" does not have the minesite as an option but rather asks whether they sold the crabs at a shop or a house. The correct answer therefore is 'neither'. The remaining five questions were nonmisleading therefore one of the forced choice options was correct e.g. "What colour was the icecream van- Pink or Blue?" The icecream van was pink therefore one of the answer options is correct.

Design

A 2 x 2 Split Plot ANOVA was used to analyse the children's responses to the questions examining compliance and the misinformation effect. The dependent variable was the number of errors. The independent variables were:

1. The pre-interview training package consisting of instructions, practice questions and a warning (experimental/control). This was a between-subjects factor with half the participants receiving the training.
2. Question type (compliance – misleading, nonmisleading; misinformation effect -

critical control, critical misled). This was a within subjects factor with all the participants receiving the questions.

Procedure

Each child participated in the experiment over a two day time period. On day one all of the children watched the 'Banduk' video in groups ranging in size from six to thirty depending on the size of the school and the number of children participating. On day two the children were randomly assigned to either one of two groups to listen to either Story 1 or Story 2. Each narrative story was read aloud by either one of the two interviewers.

Experimental Group - Before the test the children in the experimental group participated in a pre-interview training session. First they were warned that they may have been told some wrong information after watching the video and that they had to think really carefully before giving their answer.

The children were then instructed that sometimes they may not know the answer and if this was the case they were not to guess but should answer 'don't know.' Two practice questions were then asked to emphasise the 'don't know' option (e.g. "What pet do I have at home?" with the answer options cat or dog). If the child attempted to answer they were reminded not to guess and as they did not really know what pet the interviewer had, the correct answer was 'don't know.'

The children were then instructed that sometimes both answers would be wrong and if this was the case they must say that both answers are wrong (e.g. the neither option). To emphasise this the children were then asked two practice questions (e.g. "What colour is my jumper?" with the answer options yellow or green where the interviewer was actually wearing a blue jumper). When the child answered correctly that the interviewer was not wearing a yellow or green jumper they were praised and it was emphasised that sometimes both answers would be wrong.

So as not to overfamiliarise the 'don't know' or 'neither' responses the children were then told that they would definitely know some of the answers. Two practice questions were then asked (e.g. "What type of child are you?" with the answer options of a boy or girl). If the child answered with the correct gender they were praised and it was emphasised once again that they would definitely know some of the answers. The majority of children did not have any trouble answering the practice questions correctly. Refer to Appendix F for full pre-interview training schedule.

Once the pre-interview training was finished the children were then asked the test questions. The children in the training group were given the four options, two options from the video or story, a don't know option or a neither option. These options were told at the end of each question so the children did not forget that they could answer 'don't know' or 'neither.'

Control Group - The children in the control group were also asked six questions to allow them to become familiar with the interviewer and to have the same period of time before questioning as the children in the experimental group. Questions included "Do you have a pet?", "What's your favourite television show?", "What's your favourite food?" The children in the control group were not warned that some of the information was wrong and there was also no emphasis on 'don't know' or 'neither' responses. If the children did respond though with a 'don't know' or 'neither' answer they were accepted as valid answers. Refer to Appendix G for control group schedule.

Coding

The answers were coded as correct, errors, don't knows or neithers and the data entered onto the computer. Responses and data entry were then checked by a second person, therefore ensuring accuracy and reliability.

For the non-misleading questions both choosing the incorrect option and neithers were errors (as one of the options was correct). For the misleading questions, in contrast, neithers were considered correct responses. For all the critical item questions selecting the incorrect option and neithers were both incorrect responses, as the correct option was provided in the question.

RESULTS

The results section reports on the data screening procedures and the analysis conducted to test the children's recall performance. It was predicted that the children having the pre-interview training would show reduced compliance by making fewer errors to the misleading questions. It was also predicted that the children having the pre-interview training would show a reduced misinformation effect by making fewer errors to the misled critical questions.

The data was analysed using the SPSS for Windows Statistical Package. The effect of training and question type was analysed using a Split Plot 2 x 2 ANOVA. Correct responses, errors and don't knows were analysed separately with alpha set at .05. Two sets of analyses were conducted: The first analysis investigated the effect of compliance and the second analysis investigated the misinformation effect

Data Screening

Data was screened to evaluate the assumptions for conducting a Split Plot ANOVA. When analysing the data there were no cases of missing data and the samples in each cell were equal ($N = 43$). With a range of 1 - 5 in each dependent variable a multivariate ANOVA was deemed an appropriate analysis, however normality, homogeneity of covariance (Box's M test) and homogeneity of variance (Levene's test) were not satisfactory in a minority of cases, particularly for the 'don't know' measure. No adjustment was made as Glass, Peckham and Sanders (1972, cited in Minium, King & Bear, 1993, p. 392) note "moderate departure from the normal distribution specified in the first assumption does not unduly disturb the outcome of the test" and Diekoff (1992, p. 189) notes that "if sample sizes in each cell of the factorial design are approximately equal and fairly large (at least 10 per

cell) the factorial ANOVA is fairly resistant to violations of the assumptions of homogeneous variances and normal distributions."

Split Plot ANOVA Analyses

Compliance

The first analysis investigated the effect of compliance to misleading questions with condition (experimental/control) as a between-subjects factor and question type (misleading/nonmisleading) as a within-subjects factor (Refer to Table 1 for a summary of means).

Table 1.

Compliance - Mean number of correct responses, errors and don't knows and mean accuracy for nonmisleading and misleading questions

		Nonmisleading		Misleading	
		<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Experimental	Correct	3.72	0.91	3.00	1.57
	Errors	0.65	0.87	1.35	1.33
	Don't Knows	0.63	0.82	0.65	1.19
	Accuracy	0.86	0.18	0.67	0.32
Control	Correct	4.16	0.78	0.81	1.35
	Errors	0.84	0.78	4.19	1.35
	Don't Knows	0.00	0.00	0.00	0.00
	Accuracy	0.83	0.16	0.16	0.27

Errors

A split plot ANOVA was conducted to examine whether condition (experimental/control) and question type (misleading/nonmisleading) had an effect on the number of errors. There was a significant main effect for question type $F(1,84) = 124.862, p = .000$ with a greater number of errors for the misleading questions than nonmisleading questions ($M = 2.77$ versus $M = 0.74$). There was a significant main effect for condition $F(1,84) = 92.230, p = .000$ with a greater number of errors in the control group than the experimental group ($M = 2.51$ versus $M = 1.00$). There was also a significant interaction between question type and condition $F(1,84) = 53.597, p = .000$. Post hoc comparisons (independent t tests) using a Bonferroni adjusted alpha of 0.025 indicated that the control group had a significantly greater number of errors to misleading questions than the experimental group $t(84) = -9.836, p = .000$ ($M = 4.19$ versus $M = 1.35$). For the nonmisleading questions there was no significant difference between the number of errors in the control and experimental groups $t(84) = -1.042, p = .301$ ($M = 0.84$ versus $M = 0.65$). Refer to Figure 1.

In summary, pre-interview training decreased the number of errors for misleading questions but not the nonmisleading questions.

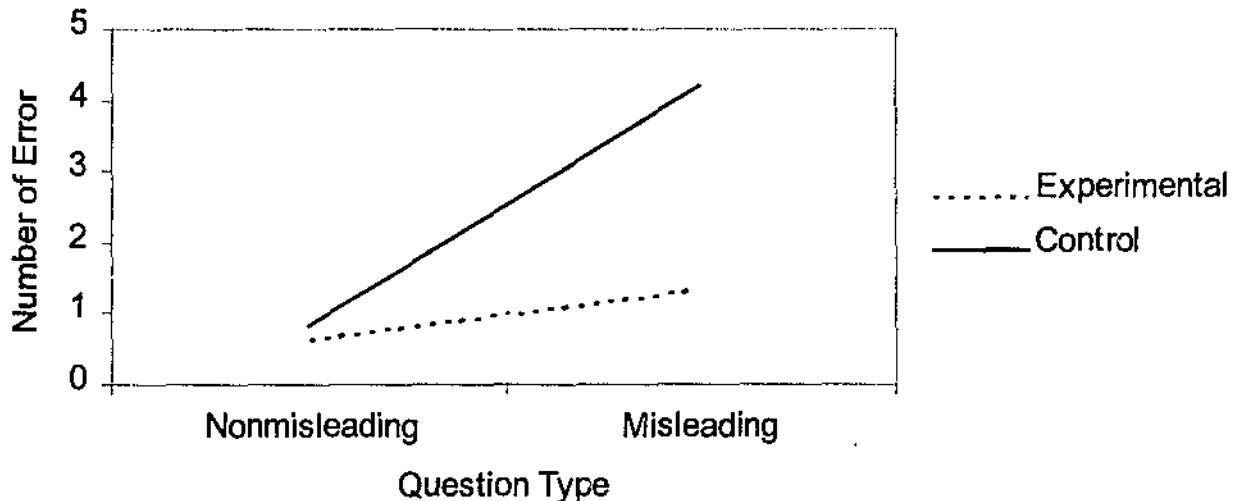


Figure 1. Compliance - Number of Errors by Training and Question Type

Correct Responses

A split plot ANOVA was conducted to examine whether condition (experimental/control) and question type (misleading/nonmisleading) had an effect on the number of correct responses. There was a significant main effect for question type $F(1,84) = 110.617, p = .000$ with a greater number of correct responses for nonmisleading questions than misleading questions ($M = 3.94$ versus $M = 1.91$). There was a significant main effect for condition $F(1,84) = 25.962, p = .000$ with a greater number of correct responses in the experimental group than the control group ($M = 3.36$ versus $M = 2.48$). There was also a significant interaction between question type and condition $F(1,84) = 46.121, p = .000$. Post hoc comparisons (independent t tests) using a Bonferroni adjusted alpha of 0.025 indicated that the experimental group gave a significantly greater number of correct responses to misleading questions than the control group $t(84) = 6.915, p = .000$ ($M = 3.00$ versus $M = 0.81$). There was also a significant difference when analysing the

nonmisleading questions with the control group having a significantly greater number of correct responses than the experimental group $t(84) = -2.414, p = .018$ ($M = 4.16$ versus $M = 3.72$). Refer to Figure 2.

In summary, pre-interview training increased the number of correct responses to misleading questions, but decreased the number of correct responses to nonmisleading questions.

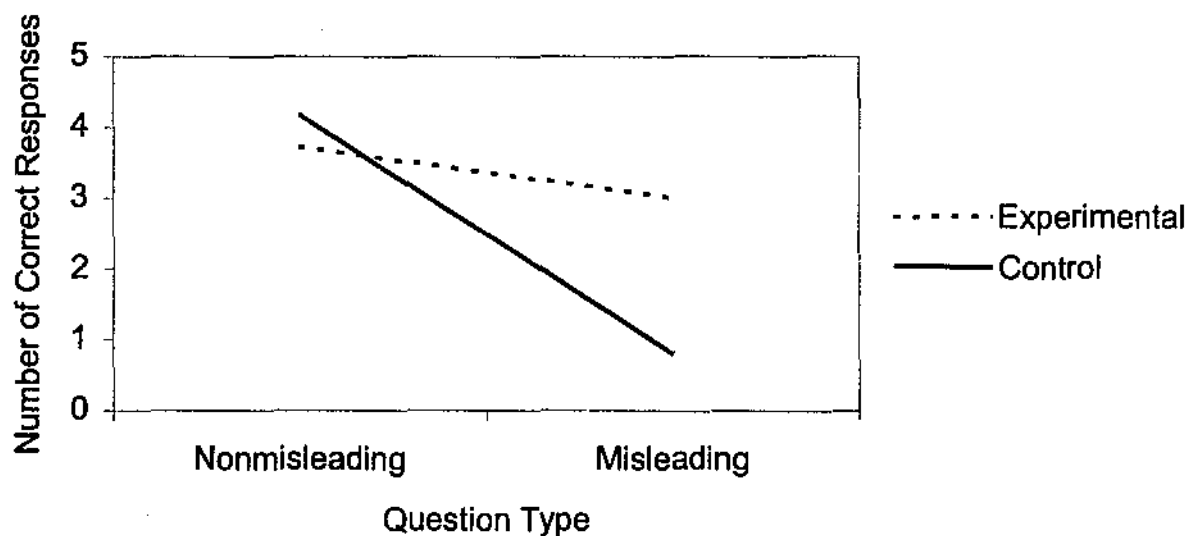


Figure 2. Compliance – Number of Correct Responses by Training and Question Type

Don't Knows

A split plot ANOVA was finally conducted to examine whether there were any significant differences between condition (experimental/control) and question type (misleading/nonmisleading) in the number of don't know responses. There was no

significant main effect for question type $F(1,84) = 0.018, p = 0.894$ with no significant difference between the misleading and nonmisleading questions. There was a main effect for condition $F(1,84) = 24.489, p = 0.000$ with a greater number of don't know responses in the experimental than the control group ($M = 1.28$ versus $M = 0.00$). There was not a significant interaction between condition and question type $F(1,84) = 0.018, p = 0.894$.

In summary, the children in the training group utilised the 'don't know' option if they were unsure of an answer whilst the children in the control group did not utilise this option.

Accuracy Calculations

A calculation of the accuracy of misleading and nonmisleading questions was conducted by dividing the correct responses by the combined total of correct and error responses. For the misleading questions the experimental group achieved greater accuracy than the control group (67% versus 16%). For the nonmisleading questions the experimental group also achieved slightly greater accuracy than the control group (86% versus 83%).

Misleading Postevent Information

The second analysis investigated the effect of misleading postevent information with condition (experimental/control) as a between-subjects factor and question type (control/misled) as a within-subjects factor (refer to Table 2 for a summary of means).

Table 2.

Misleading Postevent Information - Mean number of correct responses, errors and don't knows and mean accuracy for control and misled items

		Critical Control		Critical Misled	
		<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Experimental	Correct	2.51	1.35	1.67	1.29
	Errors	1.35	1.13	2.58	1.33
	Don't Knows	1.14	1.36	0.74	0.95
	Accuracy	0.63	0.30	0.39	0.28
Control	Correct	3.37	1.27	2.26	1.00
	Errors	1.58	1.30	2.74	1.00
	Don't Knows	0.04	0.30	0.00	0.00
	Accuracy	0.68	0.26	0.45	0.20

Errors

A split plot ANOVA was conducted to examine whether condition (experimental/control) and question type (control/misled) had an effect on the number of errors. There was a significant main effect for question type $F(1,84) = 44.755$, $p = .000$ with a greater number of errors for the misled questions than the control questions ($M = 2.66$ versus $M = 1.46$). There was no significant main effect for condition $F(1,84) = 1.128$, $p = 0.291$ and no interaction between condition and question type $F(1,84) = 0.038$, $p = 0.846$. Refer to Figure 3.

In summary, there was a misinformation effect as there was a greater number of

errors for the misled questions. There was no significant difference though between the experimental and control groups therefore indicating that the warning did not reduce the 'misinformation effect.'

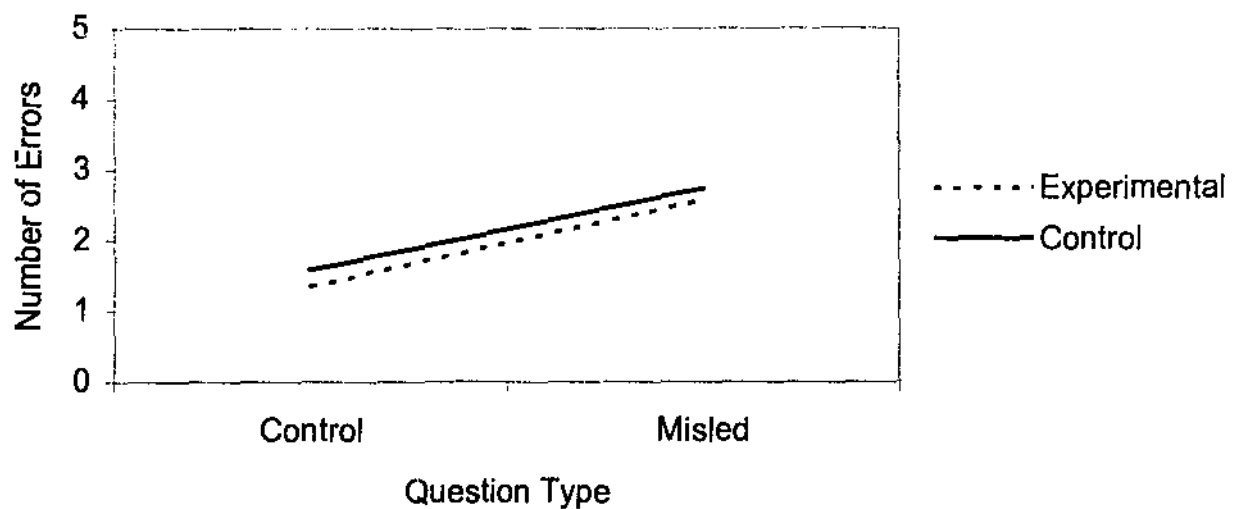


Figure 3. Misleading Postevent Information -- Number of Errors by Training and Question Type.

Correct Responses

A split plot ANOVA was conducted to examine whether condition (experimental/control) and question type (control/misled) had an effect on the number of correct responses. There was a significant main effect for question type $F(1,84) = 26.892, p = .000$ with a greater number of correct responses for the control items than the misled items ($M = 2.94$ versus $M = 1.97$). There was also a significant main effect for condition $F(1,84) = 14.635, p = .000$ with a significantly greater number of correct responses in the control group than the experimental group

($\underline{M} = 2.81$ versus $\underline{M} = 2.09$). There was no significant interaction between condition and question type $F(1,84) = 0.549, p = .461$. Refer to Figure 4.

In summary, there was a misinformation effect with a greater number of correct responses for the control items than the misled items. The warning did not increase the correct responses though, with the control group achieving a greater number of correct responses than the experimental group.

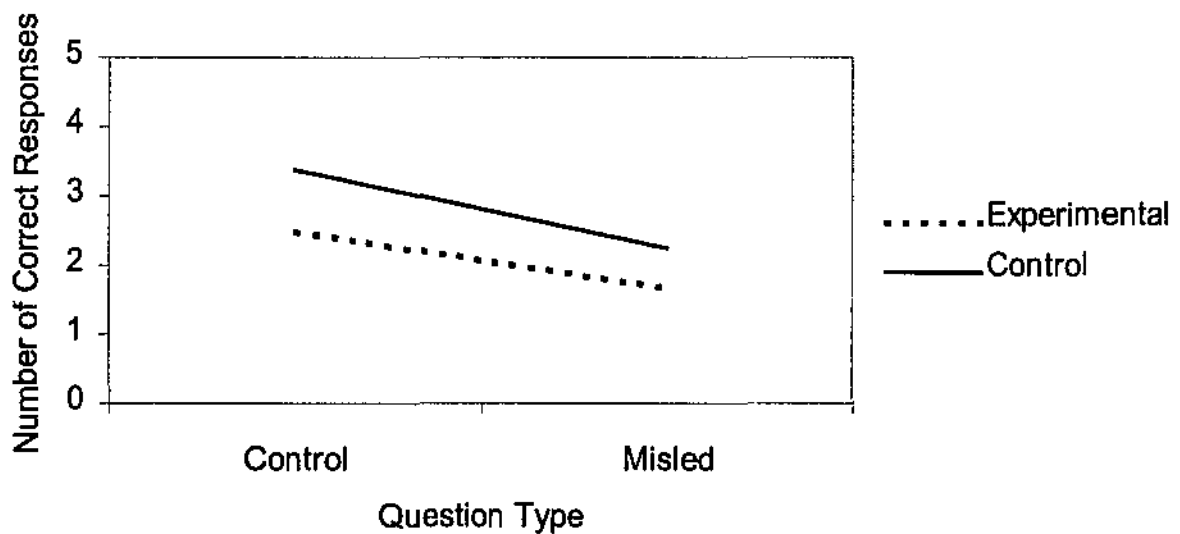


Figure 4. Misleading Postevent Information – Number of Correct Responses by Training and Question Type

Don't Knows

A split plot ANOVA was finally conducted to examine whether there were any significant differences between condition (experimental/control) and question type (control/misled) in the number of don't know responses. There was a significant main effect for question type $F = 4.628, p = 0.034$ with a greater number of don't knows for the control items than the misled items ($\underline{M} = 0.59$ versus

$\underline{M} = 0.37$). There was also a significant main effect for condition $\underline{F} = 37.553$, $p = 0.000$ with a significantly greater number of don't know responses for the experimental group than the control group ($\underline{M} = 1.88$ versus $\underline{M} = 0.04$). There was no significant main effect for question type and condition $\underline{F} = 2.885$, $p = 0.093$.

In summary, the children in the training group utilised the 'don't know' option if they were unsure of an answer whilst the children in the control group did not utilise this option.

Accuracy Calculations

A calculation of the accuracy of critical control and critical misled items was conducted by dividing the correct responses by the combined total of correct and error responses. For the control questions, the control group was more accurate than the experimental group (68% versus 63%). For the misled questions the control group was also more accurate than the experimental group (45% versus 39%).

DISCUSSION

The results of the present study revealed that the pre-interview training reduced compliance to misleading questions but also resulted in a decreased number of correct responses to nonmisleading questions. The results of the study also revealed that the children were misled by misleading postevent information but the warning did not reduce the 'misinformation effect' for the children in the experimental group. In fact, the children in the control group achieved a greater number of correct responses than the children in the experimental group.

Compliance

The results of the present study revealed that the pre-interview training package significantly reduced children's compliance to misleading questions. The control group had a significantly greater number of errors for the misleading questions than the training group, indeed this effect was quite dramatic (84% errors in control group versus 27% errors in training group).

The misleading forced choice questions used in the present study were also the most 'dangerous' question type to use in an interview (Gudjonsson, 1990b). Forced choice questions enable the participant to choose from the options provided by the interviewer, resulting in a higher risk of guessing (Foddy, 1994; Gudjonsson, 1990b). As Gudjonsson (1990b, p. 186) notes, "closed false alternative questions should only be used by interrogators when such questions are based on well founded and informed premises and expectations." The study conducted by Gee and colleagues (in press) investigated the effect of question type on children's compliance to misleading questions. Results revealed an increased number of errors to forced choice misleading questions in comparison to misleading specification or yes/no questions, due to children's higher risk of guessing. In the present study the

pre-interview training successfully reduced children's compliance when using misleading forced choice questions, so these findings are of particular importance.

The children in the experimental group utilised the 'don't know' option more often than the children in the control group. In fact, there was not one 'don't know' response from any of the children in the control group regarding the misleading and nonmisleading questions. The pre-interview training was therefore beneficial in assisting those children who were unsure of the correct answer. The children were not complying with the demand characteristics of the interview situation and seemed willing to respond 'don't know' to the authoritative interviewer. A more explicit 'don't know' instruction (Mulder & Vrij, 1996) may be necessary than just a brief instruction to respond 'don't know' (Moston, 1987). In addition, the present study involved two practice questions after the 'don't know' instructions, so this may have provided further reinforcement not to guess if unsure of the answer.

The results of the present study also revealed that the children in the training condition utilised the 'neither' option. The children were not complying with the social pressures to provide a response and were willing to question the interviewer's expertise. The 'neither' component of the training package was therefore an additional bonus in the present study as a means of reducing children's compliance to misleading questions. This can be illustrated by a number of remarks from the children in the training group regarding the misleading questions. A common response was "you're trying to trick me by asking a silly question. Both of those answers are wrong. But I do know the right answer." This sort of response could be very important in a courtroom and would provide a lot more information than a 'don't know' response. Whilst 'don't know' implies that the child does not know the answer, the 'neither' response indicates that the interviewer is mistaken.

Unfortunately, the pre-interview training resulted in a decreased number of

correct responses to the nonmisleading questions. This problem was also found in the studies conducted by Gee and colleagues (in press, Study 1) and Saywitz and Moan-Hardie (1994, Study 1). Saywitz and Moan-Hardie (1994) modified their training package in their second study by placing greater emphasis on children's ability to provide correct responses and less emphasis on "admitting lack of knowledge" (p. 419). This strategy did result in reduced compliance to misleading questions without reducing the number of correct responses to nonmisleading questions. This strategy was also utilised in the present study with the added reinforcement of providing two practice questions (e.g. "What type of child are you?" Boy or girl). This strategy was not sufficient in the present study.

The children may have been reluctant to provide correct responses due to an overgeneralisation of the 'don't know' or 'neither' response. The children may have become complacent in answering the questions by taking the easy response options rather than searching their memories for the correct response (Krosnick, 1991). Another explanation concerns the higher rate of guessing. In the present study the children in the training group were given four answer options at the end of each question whereas in previous studies (Gee et al., in press; Saywitz & Moan-Hardie, 1994) the children have only been given two answer options. A greater number of response options results in a higher rate of guessing which may have influenced the number of correct responses to nonmisleading questions. It may be necessary to provide a greater number of practice questions to emphasise to children that they will definitely be able to answer some of the questions.

In previous studies (Gee et al., in press; Saywitz & Moan-Hardie, 1994) the children have only been given the pre-interview training at the beginning of questioning. In the present study the children participated in the pre-interview training and were then provided with a 'don't know' and 'neither' option at the end of

each question. Due to children's limited cognitive abilities (Flavell et al., 1993) the children may have forgotten the training strategies towards the end of questioning in the previous studies. The children may not remember that they have alternative responses (e.g. 'don't know') if they are unsure of the answer. Providing the 'neither' and 'don't know' options, in addition to the two forced choice alternatives, at the end of each question provides a reminder for the child not to guess the answer. This strategy may have contributed to the low compliance rates in the present study.

The greater number of 'don't know' and 'neither' responses in the experimental group may also be due to the study being conducted in a school. Moston (1987) noted that children may be more willing to respond 'don't know' at school as they are in a warm, familiar environment. Children may feel uncomfortable in an unfamiliar environment, however and may be more willing to comply with an authoritative interviewer. A courtroom is another daunting, unfamiliar environment to a child who is providing an eyewitness testimony. The child may feel uncertain of responding 'don't know' or 'neither' even if they have participated in pre-interview training, due to the increased demand characteristics of the environment. This problem could be rectified by involving the child in a court-preparation group (Sisterman-Keeney, Amacher & Kastanakis, 1992) and providing a cursory tour of the courtroom to enable the environment to be more familiar to the child (Nicholson & Murray, 1992; Saywitz & Snyder, 1993). In the United States a number of states are now adopting court-preparation groups for children who have to provide eyewitness testimonies in court (Sisterman-Keeney et al., 1992). In Tennessee, before children appear in court they have a tour of the court-house where they participate in role plays and scenarios regarding the court process. As Sisterman-Keeney and colleagues (1992, p. 205) note, "this brings a familiarity that greatly reduces anxiety for both children and adolescents."

Even though there was a decreased number of correct responses to nonmisleading questions, the dramatic reduction in compliance to the misleading questions reflects the importance of pre-interview training. The children in the present study were also younger than the children in the Gee and colleagues (in press) study. Research consistently shows that younger children are more compliant than older children (Warren, et al., 1991). The pre-interview training package in the present study was successful though in reducing even 6 to 8-year-old children's compliance to misleading questions.

The results of this study emphasise the importance of utilising more than one strategy in reducing children's compliance to misleading questions. Rather than just a warning (Warren et al., 1991) or instructions to respond 'don't know' (Moston, 1987; Mulder & Vrij, 1996) it may be necessary to incorporate a number of different strategies to reduce children's compliance to misleading questions. The training package in the present study included instructions to respond 'don't know', 'neither' or 'correctly', followed by six practice questions. Practice questions have the added bonus of allowing the interviewer the opportunity to correct the child if they guess the answer and to reinforce and praise correct responses (Gee et al., in press).

The training package was also very brief and simplistic and took only five minutes to implement on each child. Similiar pre-interview training results were found in Saywitz and Moan-Hardie's (1994) study but their study involved quite an elaborate and complex training package. Their package included a story about a child who complied with leading questions, a practice session, a video, visual reminders, feedback and a review. This may be quite a time-consuming, costly and difficult process to utilise in an applied setting (as noted by Gee et al., in press) whereas similiar results have now been found with a brief and simple package. This may be a more realistic option for a child providing an eyewitness testimony in a

court situation. Court systems are often filled to their capacity with cases (Spencer & Flin, 1993) and may lack staff to implement court preparation programs. A simple and brief pre-interview training package may therefore be a realistic and cost-effective option to implement in a court setting.

Misleading Postevent Information

The results of the present study indicated that the children were misled by misleading postevent information therefore revealing a "misinformation effect." There was a significantly greater number of errors for the misled questions than the control questions (53% errors versus 29% errors). This is evidence that the children were influenced by information from the misleading narrative in their recognition of the original event.

The warning and pre-interview training did not reduce the 'misinformation effect' for the children in the experimental group. Surprisingly, the control group had a greater number of correct responses than the experimental group. The results of this study therefore do not support the results found by Christiaansen and Ochalek (1983). In the Christiaansen and Ochalek (1983) study adult participants were warned that some of the information in the misleading postevent narrative may be incorrect. Results revealed that participants could filter out the incorrect information from the misleading postevent narrative when given the warning up to 45 minutes after reading the story.

The findings of this study though do support the results by Lindsay (1990) who found that warning adults about incorrect information did not reduce the 'misinformation effect.' Even though participants were explicitly told that the information in the narrative was wrong they still reported these details in the final test. The children in the present study also reported the misleading items in the final

test even though they were warned that some of the information may be incorrect. Lindsay (1990) notes that adults may have difficulty locating the true source of their memories, mistaking the misleading information as the original event. This could be particularly true with children as a number of children did identify the misleading information but had difficulty remembering whether the misled item was in the original event or the narrative story. Research has found that source monitoring errors occur when participants make quick decisions without great thought and deliberation (Lindsay, 1990; Lindsay & Johnson, 1989). The children in the present study answered the questions very quickly even though the warning explicitly stated that they should think really carefully about their answers.

The control group may have performed better than the experimental group due to the number of answer options for each question. In the experimental condition each question had four answer options - two related to the video or story, a 'don't know' option and a 'neither' option. These four answer options result in a 25% chance of choosing the correct answer. In the control condition each question had only two answer options which were those related to the video or story, resulting in a 50% chance of choosing the correct answer. The children in the control group therefore have a greater chance of guessing the correct answer than the children in the experimental group. This pattern was found in the present study with the control group achieving greater accuracy for both the control and misled questions.

There was, as expected, a greater number of 'don't know' responses in the experimental group in comparison to the control group. The experimental group who were trained to respond 'don't know' may have utilised this option if they were unsure of the correct answer. Surprisingly, there were a greater number of 'don't know' responses for the control questions in comparison to the misled questions. This is evidence that the children were not having difficulty answering the misled

questions, deliberating between the original information and the misleading postevent information. This supports the results of previous research (Loftus et al., 1989) where it has been found that participants exposed to misleading information do not display lower confidence ratings for misled questions in comparison to control questions. Rather, Loftus and colleagues found that participants actually display increased confidence for errors to the misled questions.

The warning may have not reduced the 'misinformation effect' in the present study due to a number of cognitive and social factors. Children may lack the cognitive strategies to utilise the warning due to inferior encoding and retrieval abilities (Flavell et al., 1993). The children may have had difficulties encoding the information from the original event. If the original memory trace is weak or nonexistent there is a greater chance that children will choose the misleading information (Brainerd & Reyna, 1988). The warning therefore may not have assisted the children in their recall as there was no original memory for them to retrieve.

Children also have high rates of forgetting so if the misleading information is more recent it will be more accessible (Loftus & Davies, 1984). In the present study the misleading information and recall test occurred one day after the children had viewed the original event. The children may have just forgotten what the original memory details were and therefore chose the more recent information from the misleading narrative.

Children also lack metacognitive strategies to search their memories for the desired information (Flavell et al., 1993). If children lack the strategies to organise material in their mind for later recall a warning would not have assisted the children in retrieving the original memory (Flavell et al., 1993).

The children may have also forgotten the warning instructions due to their high rates of forgetting. The children were only warned once and this occurred

before questioning commenced. In addition, the children also had to participate in the pre-interview training so this may have distracted them from the warning regarding the misleading information. It may be beneficial in future studies to offer the warning at the beginning of each question or at quarterly intervals during questioning. This will reinforce to the children to think very carefully about their answers and offer a reminder about the misleading postevent information.

The demand characteristics of the interview situation could also have influenced the results in the present study. The children may have responded with the misleading information as they trusted the interviewer's knowledge more than their own memory (Saywitz & Snyder, 1993). The misleading postevent information was more recent in the children's memories and was read out by an adult interviewer. If the children are unsure of the response they may choose the misleading information as they believe the adult would not try to trick or deceive them (Saywitz & Moan-Hardie, 1994). Even though the children in the experimental group were warned that some of the information was wrong they may have still complied with the adult interviewer due to the social pressures of the interview situation. This problem could be rectified by providing the children with a more explicit warning emphasising that sometimes adults are wrong and don't always know the right answer. Just a simple warning that some of the information may be wrong may not be specific enough for young children.

Limitations of the Present Study

The limitations of the present research include the schools chosen to participate in the study. The schools were all private schools from middle-class socioeconomic areas and therefore the sample may not be representative of the general population. It would be beneficial to replicate the study in lower and higher socioeconomic areas to see if similar results are obtained.

The interviewers in the present study were also not blind to the purpose of the experiment as they were present in all phases of the experiment (video, narrative story, interview). This may have increased the demand characteristics of the interview situation. The children may have trusted the interviewer's knowledge as they were present at the original event and the misleading narrative. It would be beneficial to replicate the study with a different experimenter in each phase of the study (e.g. video, narrative story, interviewing). This may reduce the demand characteristics of the interview situation for children to comply with the adult interviewer.

The present study also did not involve stressful events for the children to recall. Due to ethical limitations it is difficult to conduct the study on children who have been involved in abusive situations or have been a witness to a crime. It is difficult therefore to generalise the results of the present study to real-life situations.

Recommendations for Future Research

The results of the present research are promising regarding the effects of pre-interview training on children's compliance to misleading questions. Unfortunately, the pre-interview training had an adverse effect of decreasing correct responses to nonmisleading questions. It may be beneficial in future studies to include a greater number of practice questions regarding correct answers to reinforce to the children that they definitely will be able to answer some of the questions.

The present study and previous research efforts investigating children's compliance to misleading questions have involved primary school aged children (Gee et al., in press; Moston, 1987; Saywitz & Moan-Hardie, 1994). It would be interesting to see if the present study could be replicated on pre-school children as these are the children most likely to comply with misleading questions (Ceci &

Bruck, 1993; Goodman & Reed, 1986). One study has been conducted on pre-school children who participated in pre-interview training and were asked misleading questions about their visit to the school nurse (Dagnall, 1997). The results of this study were not significant, with the pre-interview training not decreasing compliance to misleading questions. Further research investigating the effects of pre-interview training on preschool aged children would be beneficial especially with the increasing number of children in this age group providing testimonies in court (Spencer & Flin, 1993).

The warning in the present study was not sufficient in reducing the effect of misleading postevent information on 6-8 year old children. Further research is necessary regarding the effect of warnings on children as research is lacking in this area. A more explicit warning, with either a small story about children being misled or an emphasis that sometimes adults are wrong may be advantageous. This more explicit warning may even be accompanied by a picture book or a cartoon story so it is more applicable to young children.

Another option is to emphasise the warning at the beginning of each question so the children remember to search their memories carefully for the original information. This may be sufficient in reducing the 'misinformation effect' in young children but it must be noted that it is not really a realistic solution for an applied setting. It is hard to imagine a lawyer warning a child about incorrect information before they ask every single question. It may therefore be more practical to use a more explicit, stronger warning during the court preparation procedure before the child actually provides evidence in court.

It may also be advantageous to devise ways of improving source monitoring techniques to reduce the 'misinformation effect' in children. This would enable the children to source their memories correctly, not mistaking the misleading

information for the original event. This may be possible through the cognitive interview technique which involves four components - 1) mentally reinstating the scene of the crime, 2) reporting everything, even irrelevant information 3) recalling events in temporal order and 4) reporting the events from a number of different perspective's (Geiselman, Saywitz & Bornstein, 1993). It would be interesting to see if this method assisted children in sourcing their memories more accurately and retrieving details from the original event.

Conclusion

The results of the present study are promising regarding reducing children's compliance to misleading questions. A five minute pre-interview training package may be an effective means of reducing the demand characteristics of the interview situation. Realistically, the brief pre-interview training package used in the present study would also be quite simple and easy to implement in a real-life court room setting.

The influence of misleading postevent information on the accuracy of children's testimonies is an area of concern. Providing a simple warning may not be sufficient in reducing the misinformation effect in primary school aged children. A more explicit warning with the aid of pictures or a cartoon story may be more appropriate for young children.

Further research would be beneficial investigating both areas of the present study - compliance to misleading questions and the misinformation effect. Every endeavour should be made to ensure that children provide the most accurate and reliable eyewitness testimonies in court. With the increasing number of children appearing in court these are urgent questions for the legal system.

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Appendix A

Edith Cowan University
Joondalup, Western Australia
Department of Psychology
Phone 9 400 5551

Dear Principal,

As part of my 4th Year Psychology Honours Thesis at Edith Cowan University I am investigating ways of improving the accuracy of children as eyewitness testimonies. I would very much like your permission to investigate this issue with children at your school. The children I would like to examine would be 6-7 years of age (grade 2) and the study would run over a two day period. If possible I would like to conduct the study on the 30/7/98 - 31/7/98. Day one will involve a fifteen minute time period before morning tea and day two will involve interviewing each child for approximately 10 minutes.

The study looks at the effects of pre-interview training and the effects of warning children about misleading information. The results of this study will contribute to the body of knowledge regarding children as eyewitness testimonies. All children will watch a video titled "Banduk" which deals with environmental issues and is suitable for children 6-7 years of age. The children will then hear a narrative story that contains some misleading information about the video. Half of the children will then have pre-interview training and be warned that they may have heard some wrong information. The children will then be interviewed separately with a test that examines their ability to remember the original details. It is hoped that those children who have received the pre-interview training will have more correct responses and will be less likely to be misled by the wrong information in the story.

The children's results will be totally confidential and I will not show or discuss any individual results with anyone else. My report of this study will only discuss the average results of the children and not individual results. The children's participation is entirely voluntary and they can withdraw from the experiment at any time.

Please find attached a copy of the consent form, the narrative story and the recall test for your perusal. I will contact you to ascertain if I have your approval for the study. If you have any queries in the meantime please feel free to contact Julie Jost on ph. 9245 6071 or Dr. Susan Gee (Honours Supervisor) on ph. 9400 5526.

Thank you.

Yours sincerely,

Julie Jost
Honours Student

Appendix B - 1

Edith Cowan University
Joondalup, Western Australia
Department of Psychology
Phone (09) 84005551

Dear Parent or Guardian,

As part of my 4th Year Psychology Honours Thesis at Edith Cowan University I am conducting a study investigating the accuracy of children as eyewitness testimonies. The results of this study will contribute to the body of knowledge of how children can give the most accurate answers when appearing in a court situation. Your child's help would be very much appreciated.

The study looks at the effects of pre-interview training and warning children about misleading information. The study will run for approximately 20 minutes a day over a two day time period. All of the children will watch a video titled "Banduk" which deals with environmental issues and is suitable for children 6-7 years of age. The children will then hear a story that contains some wrong information about the video. Half of the children will then have pre-interview training with practice questions and instructions. The children will then be interviewed separately with a test to see how much they remember about the video. We are interested in finding out whether the training can help the children to answer the questions correctly.

I will not show or discuss your child's individual results with anyone else. My report of this study will only discuss the average results of the participants and not your child's individual results. There also maybe the possibility of a publication in a scientific journal. Participation of your child is entirely voluntary and your child can withdraw from the experiment at any time. This will not be held against either yourself or your child by myself, nor the school. I will be happy to answer any questions you may have, or if you would like any further information please feel free to contact Julie Jost on ph. 9245 6071 or alternatively Dr. Susan Gee (Honours Supervisor) on 9400 5526.

If you would be prepared to give permission for your child to take part in our research, please sign the form below, tear it off and return it to your child's teacher by the 28th July, 1998. Thank you for your help!

Yours sincerely,

Julie Jost
Honours Student

Appendix B - 2



Consent Form

I give my consent for my child _____ to participate in this study. I understand that:

- The study is investigating the accuracy of children as eyewitness testimonies.
- The study will run for approximately 20 minutes over a 2 day period.
- My child will be shown a video, read a story and asked questions about the video.
- Some children will have training before the interview.
- My child may withdraw from the study at any time.
- My child's individual results will not be shown to or discussed with anyone else.

Participant's parent or guardian

Date

Appendix C -1

Narrative Story 1

Items of misleading information in italics

Our story begins as a flock of beautiful birds are looking for food in the grass. Little do the birds know, but a man is lurking in the bushes. He is waiting to trap the birds. When the poor birds wander into his trap, he pulls the rope, and they are caught.

A little while later, the man drives into town in his brightly coloured ice cream van. He stops at the post office and climbs out of the van clutching a big parcel and *one* tube. He doesn't look like a bird smuggler! In fact he looks quite normal as he heads off into the post office to post his parcels.

Meanwhile, just down the road, a little girl called Banduk is looking around the shops with her brother. She is a little aboriginal girl, so she has dark skin and dark curly hair. She is dressed to stay cool in a dress with no sleeves. In one of the shops they spy a beautiful set of drums, on sale for \$100. They would love to buy the drums and make a band, but they haven't enough money.

So instead Banduk goes for a walk. She wanders through the bush and sees a colourful bird caught in the smugglers trap. She sets the bird free and away it flies. Who could be doing this to the birds she loves?

The next day Banduk and her brother head off to look for crabs. If they can find lots of crabs and sell them, maybe they can make enough money to buy the drums. Banduk has changed into a red dress with white flowers on it, but her brother is still wearing his *blue* T-shirt. When they have found a good place they stop. The brother digs while Banduk watches. It doesn't take long for them to find an enormous dark crab.

Banduk and her brother head off with their uncle to sell the crabs at the mine nearby. A group of workers are having lunch, so the children cart over the crabs. The crabs are too expensive but when the children bring down the price all the men buy the crabs. Banduk counts her money quietly.

Appendix C – 2

They go back into town and the uncle goes into the post office to collect some mail. The woman from the ice cream van is there. She seems very nervous! What could be in all those parcels she is posting off?

The children meanwhile rush straight to the shop with the drums. They look longingly at those beautiful drums but they haven't enough money to them. They head off to buy ice creams from the ice cream van instead. Banduk starts licking her ice cream. While she is waiting for her brother to get his icecream Banduk wanders around the van, and in the back she sees a *cage*. Maybe the people from the ice cream van are the ones catching the birds. The woman from the ice cream van arrives back from the post office and finds Banduk looking in the back of the van. She scowls at Banduk and slams the van doors shut.

Banduk decides to keep an eye on the two from the ice cream van, and the next day she tracks them down. They are in a tent, and the ice cream van is covered to keep it hidden. The ice cream man and his wife are getting parcels ready to post. Banduk creeps nearer for a closer look. The man hears her - he searches around, but Banduk escapes back into the bush safely. The man puts the tubes and parcels into the van, and the woman drives it away. She must be going back to the post office.

The children run to tell their uncle what they have seen. He drives off into town to tell the police. Sure enough when the uncle takes the police into the post office, there is the ice cream woman trying to post her parcels and tubes. "I'd like to examine these" says one of the police officers. The policeman opens up the first parcel and out falls a huge snake. The woman tries to runaway. The uncle is at the door though - she is caught! The other packages are opened and they both contain animals too: another snake and then a *turtle*.

Meanwhile, the children are in the bush watching the man from the ice cream van. He is carrying cages filled with beautiful birds down the beach and loading them into his boat. The brother runs away to help the police. Banduk rushes down to free the birds. The man yells at her, but the police are already on their way, with

Appendix C – 3

sirens blaring and lights flashing. The ice cream man tries to run away but the police catch him. They lead him off and put him in the back of the police vehicle with his wife.

Well, Banduk's brother got dressed up in his good cream shirt, and Banduk got dressed up in her best top and skirt - didn't they look fine! Banduk and her brother and uncle go to the police station. A police officer shakes their hand, and gives Banduk a big reward for helping to catch the smugglers.

Guess what Banduk spends the reward on ... the drums! She rushes into the shop, hands over the money and smiles! Then to celebrate the new drums the children put on a concert. Banduk's brother plays the drums while Banduk plays the *tambourine*. The adults laugh and clap, and even the toddlers dance. So everything turned out well - the smugglers were caught and the children got their drums - I guess that means that they lived happily ever after!

Appendix D – 1**Narrative Story 2***Items of Misleading Information in Italics*

Our story begins as a flock of beautiful birds are looking for food in the grass. Little do the birds know, but a man is lurking in the bushes. He is waiting to trap the birds. When the poor birds wander into his trap, he pulls the rope, and they are caught.

A little while later, the man drives into town in his brightly coloured ice cream van. He stops at the post office and climbs out of the van clutching some parcels. He doesn't look like a bird smuggler! In fact he looks quite normal as he heads off into the post office to post his parcels.

Meanwhile, just down the road, a little girl called Banduk is looking around the shops with her brother. She is a little aboriginal girl, so she has dark skin and dark curly hair. She is dressed to stay cool in a dress with no sleeves and *sandals*. In one of the shops they spy a beautiful set of drums, on sale for \$100. They would love to buy the drums and make a band, but they haven't enough money.

So instead Banduk goes for a walk. She wanders through the bush and sees a colourful bird caught in the smugglers trap. She sets the bird free and away it flies. Who could be doing this to the birds she loves?

The next day Banduk and her brother head off to look for crabs. If they can find lots of crabs and sell them, maybe they can make enough money to buy the drums. Banduk has changed into a red dress with white flowers on it, but her brother is still wearing his T-shirt. When they have found a good place they stop. The brother digs *with his hands* while Banduk watches. It doesn't take long for them to find an enormous dark crab.

Banduk and her brother head off with their uncle to sell the crabs at the mine nearby. A group of workers are having lunch, so the children cart over the crabs in their *bag*. The crabs are too expensive but when the children bring down the price all the men buy the crabs. Banduk counts her money quietly.

Appendix D - 2

They go back into town and the uncle goes into the post office to collect some mail. The woman from the ice cream van is there. She seems very nervous! What could be in all those parcels she is posting off?

The children meanwhile rush straight to the shop with the drums. They look longingly at those beautiful drums but they haven't enough money to them. They head off to buy ice creams from the ice cream van instead. Banduk starts licking her ice cream. While she is waiting for her brother to get his icecream Banduk wanders around the van, and in the back she sees something unusual. Maybe the people from the ice cream van are the ones catching the birds. The woman from the ice cream van arrives back from the post office and finds Banduk looking in the back of the van. She scowls at Banduk and slams the van doors shut.

Banduk decides to keep an eye on the two from the ice cream van, and the next day she tracks them down. They are in a tent, and the ice cream van is covered to keep it hidden. The ice cream man and his wife are getting parcels ready to post. Banduk creeps nearer for a closer look. The man hears her - he searches around, but Banduk escapes back into the bush safely. The man puts the tubes and parcels into the van, and the woman drives it away. She must be going back to the post office.

The children run to tell their uncle what they have seen. He drives off into town to tell the police. Sure enough when the uncle takes the police into the post office, there is the ice cream woman trying to post her parcels and tubes. "I'd like to examine these" says one of the police officers. The policeman opens up the first parcel and out falls a huge snake. The woman *hits the policeman and tries to runaway*. The uncle is at the door though - she is caught! The other packages are opened and they both contain animals too.

Meanwhile, the children are in the bush watching the man from the ice cream van. He is carrying cages filled with beautiful birds down the beach and loading them into his boat. The brother runs away to help the police. Banduk rushes down

Appendix D - 3

to free the birds. The man yells at her, but the police are already on their way, with sirens blaring and lights flashing. The ice cream man tries to run away but the police catch him. They lead him off and put him in the back of the police vehicle with his wife.

Well, Banduk's brother got dressed up in his good cream shirt, and Banduk got dressed up in her best top and her *blue skirt* - didn't they look fine! Banduk and her brother and uncle go to the police station. A police officer shakes their hand, and gives Banduk a big reward for helping to catch the smugglers.

Guess what Banduk spends the reward on ... the drums! She rushes into the shop, hands over the money and smiles! Then to celebrate the new drums the children put on a concert. Banduk's brother plays the drums while Banduk plays along too. The adults laugh and clap, and even the toddlers dance. So everything turned out well - the smugglers were caught and the children got their drums - I guess that means that they lived happily ever after!

Appendix E – 1

Questionnaire

1. What colour was the icecream van?

pink [] blue [] don't know [] neither []

2. What did the icecream man have on his face?

moustache [] beard [] don't know [] neither []

3. When the icecream man went into the post office he was carrying a parcel. He was also carrying some tubes. How many tubes were there?

one [] three [] don't know [] neither []

4. What was the icecream man wearing on his head?

cowboy hat [] no hat [] don't know [] neither []

5. What was the little girl wearing on her feet?

sandals [] bare feet [] don't know [] neither []

6. When Banduk went for a walk what did she find?

dead bird [] dead mouse [] don't know [] neither []

7. What did the little boy dig for the crab with?

hands [] stick [] don't know [] neither []

8. What colour was the brothers T-shirt?

red [] blue [] don't know [] neither []

9. Where did the kids go to sell the crabs?

shop [] house [] don't know [] neither []

Appendix E - 2

10. What did they carry the crabs in?

plastic crate [] bag [] don't know [] neither []

11. What did Banduk see in the back of the icecream van?

feathers [] cage [] don't know [] neither []

12. When Banduk tracked down the people from the icecream van they were in a tent. What colour was the tent?

red [] blue [] don't know [] neither []

13. When the policeman opened the first parcel a big snake fell out. What did the icecream woman do?

scream [] hit policeman [] don't know [] neither []

14. What was in the last parcel the police opened?

turtle [] lizard [] don't know [] neither []

15. Who sets the birds free from the cages?

policeman [] uncle [] don't know [] neither []

16. When Banduk got changed into her good clothes, what colour was her skirt?

red [] blue [] don't know [] neither []

17. What colour was her top?

white [] red [] don't know [] neither []

18. Who went with Banduk and her brother to buy the drums?

mother [] policeman [] don't know [] neither []

Appendix E - 3

19. What instrument did Banduk play in the band?

sticks [] tambourine [] don't know [] neither []

20. Who was dancing at the concert?

grown-ups [] little kids [] don't know [] neither []

Appendix F - 1

Pre-Interview Training Questions

Remember yesterday we saw a video about the little aboriginal girl and the bird smugglers. Well, I'm going to ask you some questions about the video. This will take about 10 minutes and no-one else will see or hear your answers. It is not a test. I just want you to try and give the best answers you can. If you want to go back to class you just tell me and we'll stop. Does that sound O.K?

Now you might have been told some wrong information after the video so I want you to think really carefully before giving your answer. If you don't know the answer I don't want you to guess or make up an answer. I just want you to tell me you don't know. But sometimes I might ask a question where the answers are both wrong and I want you to tell me when this happens, too. Don't forget though that you will be able to answer some of the questions. Now we are going to start with some practice questions. Are you ready?

Practice Questions (Don't Knows)

1. What kind of pet do I have?
cat dog

If child gives don't know response praise them and emphasise that of course they don't know if you have a cat or dog. If child gives a response other than don't know ask them if they are guessing and reiterate the importance of answering don't know. Then repeat the question.

2. What is my middle name?
Barbara Jane

If child gives don't know response praise them and emphasise that of course they don't know what your middle name is. If child gives a response other than don't know ask them if they are guessing and reiterate the importance of answering don't know. Then repeat the question.

Practice Questions (Neither)

Sometimes though I might ask you a really silly question where both of the answers are completely wrong. If this happens I want you to tell me they are both wrong. So if I asked you -

Appendix F – 2

3. What is your name?

Lucy Sally (Girls)
Joe Bill (Boys)

If child says neither of these names praise them and emphasise how sometimes both answers will be completely wrong. If child attempts to answer ask them if that is really their name (which it isn't), emphasise the importance of not guessing and repeat the question again.

4. What colour is my jumper?

Yellow Green

If child says neither (as interviewer will not be wearing these colours) praise them and emphasise how sometimes both answers will be completely wrong. If child attempts to answer ask them what colour the jumper really is, emphasise the importance of not guessing and repeat the question again.

Practice Questions (Correct answer)

Sometimes though I might ask you a question where one of the answers is definitely right. If this happens I want you to tell me the right answer. So if I asked you

5. What is the name of your school?

St Mark's	St Stephens	(School One)
North Beach Primary	Our Lady of Grace	(School Two)
Whitfords Catholic Primary	Padbury Primary	(School Three)

If child answers with correct school praise them and emphasise how they will know some of the answers. If child answers with wrong answer or don't know emphasise they will be able to answer some of the questions and repeat question again.

6. What type of child are you?

A girl A boy

If child answers with correct gender praise them and emphasise how they will know some of the answers. If child answers with wrong answer or don't know emphasise they will be able to answer some of the questions and repeat question again.

O.K. you did really well in those practice questions! So sometimes you won't know the answer so you say don't know, sometimes both answers will be completely wrong and I want you to tell me when this happens, but don't forget you will be able to answer some of the questions.

O.K. are you ready to start?

Appendix G**Pre-Interview Questions - Control Group**

Remember yesterday we saw a video about the little aboriginal girl and the bird smugglers. Well, I'm going to ask you some questions about the video. This will take about 10 minutes and no-one else will see or hear your answers. It is not a test. I just want you to try and give the best answers you can. If you want to go back to class you just tell me and we'll stop. Does that sound O.K? Why don't we start off with some easy questions about you first!

Practice questions - Control group

1. What have you been doing in school today?
2. Have you got any brothers and sisters?
3. Have you got any pets?
4. What's your favourite T.V. show?
5. What's your favourite food?
6. What do you like to do for fun?

O.K. that's really good. Are you ready to start?