SOCIAL SUPPORT AND THE QUALITY OF CHILDREN'S EYEWITNESS TESTIMONY

by

Stephen John Moston

Thesis submitted for the degree of Ph.D. in Social Psychology,

University of Kent (1989)

Abstract

It has been argued that children do not make competent witnesses. Their accounts of witnessed events tend to be limited in scope and they are seen as being highly suggestible. However, assessments of competency have been biased by situational variables such as stress at the time information is recalled.

The provision of social support is one way of reducing stress but this issue has been neglected by eyewitness researchers, seemingly because of the assumption that the presence of a support person undermines the reliability of the interview.

This thesis examined the conditions under which peer social support could influence children's testimony. It shows how fears concerning social support stem from a poor understanding of the causes of suggestibility and that social support can have considerable beneficial effects on testimony without undermining the quality of an account.

The effects of social support were examined in three studies involving children aged from 4 to 10 years of age. In each study children witnessed a live staged event and were then asked to describe what had occurred. Several types of experimental interview were conducted, each being compared to a control group of children interviewed alone. The experimental interviews typically involved the interviewing of witnesses in the presence of a peer who had not witnessed the staged event. These additional children were termed non-witnesses, their purpose during the interviews being to provide social support.

The mere presence of a non-witness peer had no effect on recall. However, when the non-witness was allowed to talk with the witness about the staged event prior to recall, their subsequent presence during the interview resulted in improved recall by the witness. The sharing of information was crucial to the improved recall performance. The results are the first experimental confirmation of the beneficial effects of social support on children's free recall.

Acknowledgments

This thesis would not have been possible but for the assistance I received from the following people:

Mr R.H. Harding (Joy Lane County Primary Junior School, Whitstable), Mr G. Shepherd (Ospringe C.B. Primary School, Faversham), Mrs G. Bubb (Canterbury Day Nursery, Canterbury), Mr P.T. Holliday (Davington County Primary School, Faversham), Mr D.M.D. Hayward (Chartham County Primary School, Canterbury) and the teachers and pupils at each of their schools.

From I.S.A.P. I would like to thank Beatrice Shire, Pat Warren and especially Ruchira Bose for helping to carry out the recall interviews. All three deserve credit for the smooth running of the studies.

Also from I.S.A.P., Robin Goodwin for acting out the staged events so successfully and without a hint of overacting, despite the threatened Richard III.

My supervisors, Professor Geoffrey Stephenson and Dr Kevin Durkin, for their advice on designing the studies and the overall organization of the thesis.

I would also like to thank my girlfriend Terry Engelberg who read through draft chapters, checked the coding, taught me about Fishbein and made my "final year" at Kent so interesting. Thanks ET.

This research was funded by an Economic and Social Research Council competition award (number A00428524364) for which I am most grateful.

Finally, I would like to thank my parents for their constant support (including a "little" financial support) during my 7 years as a student. This thesis has to be dedicated to them.

Note

None of the work described in this report has been included in any other submission for any other degree or qualification of any University or Institution.

SOCIAL SUPPORT AND THE QUALITY OF CHILDREN'S EYEWITNESS TESTIMONY

Contents Page

Results Tables

Statistical Tables

CHAPTER 1

General Introduction

and

Thesis Overview

1. General Introduction

The use of children as eyewitnesses has traditionally been seen as a hazardous pursuit. Children, it has been argued, do not make competent witnesses. Their accounts of witnessed events tend to be patchy and limited in scope, they have been accused of merging fact with fantasy and are seen as being highly suggestible. These limitations are believed to apply across a wide range of situations, such as when asked to describe an accident, a suspicious stranger or even sexual abuse.

However, these assumptions are now undergoing a severely critical re-examination, which has, to some extent, exposed them as incorrect, or at least heavily misleading. In fact, the whole field of eyewitness research is currently undergoing something of an upheaval. Long-held beliefs and "facts" are being dispelled as either myths or biased misinterpretations. As will be shown, many of the problems have stemmed from an over-reliance on "common-sense", which is understandable, whilst somewhat ironically, the other major failing stems from an over-reliance on experimental "evidence". The literature on adult eyewitness testimony contains some of the best examples of these errors.

For example, Elliott (1985), in a retrospective review on the effects of the book *Eyewitness Testimony* by Loftus (1979a), argued that the claims of the book were simply not supported by the facts. In particular, the book overstated the case concerning psychologists real input to the debate on eyewitnesses. Elliott argues that lawyers are so well equipped with a number of criticisms of the book that they can often make psychologists

appear quite ridiculous in court. Lawyers readily point out that Loftus frequently misreports a vast number of studies, such as Shepard (1967), which is cited as an example of the unreliability of recognition memory over time, whereas the actual results argue more in favour of the reliability of recognition memory.

Similarly, with regard to studies on the wording of questions and post event information on memory, Loftus is attacked for her selection bias in failing to have mentioned those studies (including some of her own published articles) that contradicted her main findings. For example, Loftus cites studies such as Loftus and Zanni (1975) on the effects of the definite and indefinite article in questioning, but not Zanni and Offerman (1978) which failed to replicate this finding. Elliott points out that this example is all the more interesting because a non-significant result from the same Zanni and Offerman paper was presented in support of Loftus' position on stress and accuracy.

Treadway and McCloskey (1987) add further criticisms of Loftus and several other key figures (e.g., Buckhout, 1974; Yarmey, 1979). Their argument is that in the eyewitness literature the Allport and Postman (1947) study of rumour has consistently been described inaccurately in that both the procedures and implications of the study have been substantially distorted. The original study was a version of the game "Chinese whispers" involving a description of a picture being passed along chains of people, but authors cite it as if it were simply a memory test involving presentation of stimulus and then recall. For example, Buckhout (1974) and Yarmey (1979) made the suprising blunder of saying that the first person in

the chain incorrectly 'recalled' that the black man had the razor, when the first person was in fact holding the picture whilst describing it.

Treadway and McCloskey further point out that these incorrect descriptions have also found their way into the legal literature (e.g., Johnson, 1985), apparently as the results of legal scholar's reliance on the inaccurate secondary reports in the psychological literature. The misinterpretation has even been used as a line of defence, namely as indicating that the recollections of a person are likely to have been tainted by their prejudices. The misinterpretions thus appear to have taken on a life of their own, independent of the original report.

The overwhelming impression one gets from reading these and other critiques of established findings, such as the effect of different verbs in questions (e.g., Read, Barnsley, Ankers and Whishaw, 1978; Kallio and Cutler, 1987) and the effects of discredited testimony (e.g., Weinberg and Baron, 1982; Whitley, 1987), is that for some time now researchers have been making unwarranted claims about the eyewitness competencies of adults. Although this fact is apparent to those prepared to read the existing literature carefully, it is disturbing to note the extent to which these false impressions have permeated popular thinking. It will be argued throughout this thesis that in the case of children as eyewitnesses, the prevailing accusations of incompetency are equally unjustified. That is, despite containing some elements of truth, they too are based on weak premises and some highly selective reading of the literature.

Ten years ago there was suprisingly little published work on children as eyewitnesses. Policy recommendations were based on only a handful of studies, such as the study of suggestibility in children by Varendonck (1911), whose work was originally cited by Whipple (1913), although most current researchers are more familiar with the translation included in Goodman (1984b).

Historically, Varendonck's study is the most important single piece of research on children as eyewitnesses. Working on a murder case in Belgium, Varendonck was asked to evaluate the information obtained from two young girls aged 8 and 10. The children had initially claimed to know nothing about the murder, but under some highly suggestive questioning they had given investigators a description of the murderer (in fact they described the father of one of the girls). Varendonck devised a series of experiments in which he incorporated questions similar to those asked of the young girls. For example, some seven-year-olds were asked the colour of the beard of one of the teachers in their building. The majority answered "black" and two children did not answer. In fact, the teacher had no beard. The majority of eight-year-olds (19 out of 20) offered a colour to the same question. Only one said he had no beard. In an other experiment a teacher visited a class, stood talking to them for five minutes. All the time he kept his hat on. Immediately after he had left the children were asked "In which hand did he hold his hat?". Seventeen said "right", seven said "left", and only three gave the correct answer. These responses enabled Varendonck to convince the court that the young girls' testimony may have resulted from suggestive questioning.

There were other studies on the questioning of child witnesses published at the same time (e.g., Stern, 1910; Pear and Wyatt, 1914), but none matched the impact of Varendonck's study. The simple elegance of the design ensured its easy acceptance into psychological and legal thinking. Its message was clear: child witnesses cannot be trusted.

Years later, belief in the suggestibility of children had become firmly entrenched. For example, McCarty (1929) gave the following summary of the existing research to lawyers, "There is a very common impression that children are more suggestible than adults" (p.270). McCarty also claimed that a devious lawyer could control the testimony of a child by means of suggestion, and could elicit from a child evidence that is wholly false and unreliable. In a later influential review of eyewitness research, Rouke (1957) made similar recommendations.

Probably because Varendonck's results appeared so conclusive, and more importantly, they agreed with 'common sense', there was very little research conducted for nearly 70 years and even the few reports that did emerge during this time appeared to support the notion of the unreliable child. One notable example was that by Trankell (1958) which discussed the alleged sexual assault on a boy, Lars, aged 5. Trankell investigated the case in the role of an 'expert' witness. He found that the child had not been the victim of any assault, but had created a story to cover up for some of his own transgressions, and also because of the insistent questioning of his mother.

The accusations of suggestibility were persuasive arguments against the use of child witnesses and until only recently the legal profession has been highly dismissive of children's testimony. Decisions on the validity of a child's statements are made at several points in the legal process (Yuille, 1987). When an incident is first reported a police officer must decide whether to make the child's statements part of the official record. If a case goes to trial, a lawyer must decide whether to take the risk of putting a child on the stand and once the child testifies, the judge or jury must decide what weight to give that testimony.

Before testifying in court children have had to undergo competency tests in which they are questioned by the judge (Flin, Davies and Stevenson, 1987) and when finally allowed to testify their evidence has been of only limited value. That is, the uncorroborated evidence of a child was not enough to convict someone of an offence, even the corroborating evidence of other children was not enough (Spencer, 1987b). These restrictions have generally applied to anyone under 14 years of age. In other countries such, as the U.S.A. (Scottish Law Commission, 1988) and Canada (Yuille, 1987), similar wide ranging restrictions on the testimony of children also apply.

However, this critical view of the child witness is currently undergoing a dramatic degree of rethinking. Legal reforms in England are now being gradually being introduced to give the evidence of children greater status (Davies, 1988a), although some severe restrictions still exist (Davies, 1988b).

This rethinking stems from the realization that children can, on occasions, make highly effective witnesses and that their statements are not inherently unreliable. Probably the most dramatic change in attitudes centres on discussions of child sexual abuse. Recent studies (e.g., Finkelhor, 1979; Russell, 1983) have shown the widespread nature of such abuse, but until recently allegations of sexual abuse were routinely dismissed as childish fantasies. This reflected the fear that children easily confuse fact and fantasy (Johnson and Foley, 1984).

Goodwin, Sahd and Rada (1982) found that reports of false accusations of incest in psychological and psychiatric reports were incredibly rare. Goodwin et al. (1982) contrasted this finding with the claims made in reports such as MacDonald (1971) which implied that false accusations are an important forensic problem, despite the fact that most of MacDonald's case examples are drawn from a book published in 1913.

Goodwin et al. argue that although reported false accusations of incest are rare, legal and mental health professionals tend to be suspicious of incest accusations. This is partially because of the continued influence of Freud's conclusion (e.g., 1953) that many reports of incest were based on fantasy, which was made even though Freud never reported a detailed case example of false accusation of incest. In fact he actually confirmed some accusations by interviewing family members.

According to Goodwin et al. false accusations tend to occur when the alleged victim has something to hide, such the case of a girl accusing a

hated stepfather of incest to shield the boyfriend who had made her pregnant. They state that:

> "False accusations of incest by children appear to be opportunistic lies rather than symptoms of a specific hysterical or delusional state. A desperate child decides the benefits of the lie outweigh the risks and has, at hand, the information necessary to fabricate an incest story. In the reported cases the child usually has an adult confederate, and the child readily admits the lie on direct questioning. Where the child has made more than one false accusation, more specific pathology may been found." (Goodwin et al., 1982; p. 18)

The case of custody hearings is an example in which adults may have a reason to encourage a false report (Green, 1986). However, if anything, children are likely to say nothing about an alleged sexual assault and the only common 'lie' occurs when the child falsely withdraws an accusation for reasons such as not wanting to have the offender punished, or after threats. The situations in which this may occur are more fully explained by Summit (1983) in his child sexual abuse accomodation syndrome theory.

DeFrancis (1969) suggested that untrained interviewers often accepted false denials of incest at face value and this had led to the underestimation of the incidence of incest and to the assumption that many accusations are false. The report by Eckenrode, Powers, Doris, Munsch and Bolger (1988) which analysed nearly 1800 cases of sexual abuse, physical abuse and child neglect in order to identify the case factors that predicted the substantiation of the reports, bore out the claims of DeFrancis. Eckenrode et al. found that reports from professionals, as opposed to non-professionals were far more likely to be substantiated. Untrained interviewers were more likely to accept poor indicators of abuse

as evidence. Such referals which often proved groundless, would unfortunately tend to give the impression that false accusations were common.

Together with a number of case studies in which children's evidence was found to be highly accurate, even in children aged only three years (e.g., Goodman, 1984a; Jones and Krugman, 1986), popular opinion has totally shifted away from the previous position of unreliability, to one of almost total faith in the evidence of children, although sometimes this faith can be so narrow minded as to preclude the possibility that children may be making errors. For example, Yuille (1987) cites a report to the Attorney General of California by Van De Kamp (1986), which gives the following illustration of the new philosophy.

Social worker:	"So, we, we do believe the children."
Suspect:	"Uh huh."
Social worker:	"Okay, that you are involved."
Suspect:	"Then no matter what I, what I say doesn't even matter then?"
Social worker:	"Well, yeah of course it matters, but, but our stand is that we believe the children."

This extreme position almost certainly stems from the speed with which attitudes have changed. In a very short period of time there has been a total reversal in thinking from one end of range to the other. Just as the earlier position has now been revoked, our current thinking may also change. Support for this contention stems from the effects of the Cleveland child abuse "crisis" in 1987 in which large numbers of 'diagnosed' cases of abuse were not substantiated by later investigations (Report of the Inquiry into Child Abuse in Cleveland 1987 by Lord Justice Butler-Sloss, 1988). In

the years preceding Cleveland, interest in child abuse as a national issue had been steadily growing, several organizations were founded and the number of reported cases was increasing (National Society for the Prevention of Cruelty to Children, 1986). However, in the year following Cleveland some doctors have expressed a fear that attitudes have changed and allegations of child abuse are likely to received far more sceptically than two years ago.

Amongst psychologists (although not necessarily jurors, as will be shown in Chapter 9), children's testimony is now often seen as being reasonably reliable. For example, Goodman and Michelli (1981; p.83) stated that "The view that children's testimony is not to be trusted in the courts may be an adult prejudice. In fact studies show that they can recall events accurately enough to testify - if they are not confused by adults." Other reports echoed this sentiment, for example Berliner and Barbieri (1984; p.129) claimed "that children, even very young ones, can give valuable testimony if they are properly prepared and interviewed".

Psychologists currently emphasise that children can make good, or at least reliable eyewitnesses, provided they are not confused by adults. However, therein lies the key dilemma. Finding ways of eliciting children's eyewitness statements without confusing the child and thereby distorting the account has been the major stumbling block in eyewitness research. We do not know enough about why children become confused in interviews and even less about how to properly prepare and interview children.

1.2 Thesis Overview

Although child witnesses are now seen in a more positive light there are still some highly damaging accusations still standing against them. First, it has been claimed that their free recall descriptions of witnessed events are too short to be of value (e.g., Marin, Holmes, Guth and Kovac, 1979). This issue will be discussed in Chapter 2 of this thesis where it will be shown that children's descriptions of witnessed events can make detailed and highly effective testimony. However, on most occasions children fail to provide such testimony. This can only in part be explained by age related differences in memory.

While it is acknowledged that free reports produce the most accurate information, there is no guarantee that a witness will unaided produce relevant information. Dent (1982) argues that interviewers are unlikely to tolerate this situation and will resort to using prompts to elicit more information, even though this involves the risk of a reduction in accuracy. As will be shown in Chapter 3, the use of such prompts, particularly in experimental tasks, is problematic on both methodological and legal grounds. It is argued that contextual factors present during interviews result in the child witness appearing excessively suggestible, which is the second damaging accusation levelled against them. This has left interviewers with something of a dilemma, they know that children can recall far more than they do, but they do not know how to access this information without distorting the validity of the account.

In Chapter 4, the inherently stressful nature of being interviewed is identified as a major reason why children's free recall accounts tend to be so brief. That is, children can produce far more information than they do, provided they are not unduly stressed at the time of recall, this fact being most evident in the courtroom. It is suggested that by reducing the stress present during an interview, even outside the courtroom, children's free recall accounts are enhanced, thereby reducing the need to rely on prompts. One possible means of reducing stress is the provision of social support. Studies are described which show that in interviews children express a desire to be with another person whom they know. Social support is a controversial issue with eyewitness research and its implementation is usually discouraged. It is often alleged that the presence of a support person brings in problems concerning suggestibility. However, this attitude stems more from a general mistrust of children as witnesses than empirical findings.

Chapter 5 introduces a series of studies looking at the effects of peer social support on the quality of children's eyewitness testimony. It is argued that part of the reason why children recall so little in interviews is because the social environment is particularly intimidating for them. Here, the cause of poor recall is explained in terms of contextual effects, rather than a limited memory capacity. It is hypothesized that the experimental provision of social support would lead to improved recall. The effects of social support on eyewitnesses are essentially unknown. Therefore, the present studies represent a new area of interest within eyewitness research. The emphasis here is placed on variations in the recall environment itself, rather than identifying individual differences

that might predict recall quality. The form of social support to be examined was the presence of peers during the recall interview.

The first experimental study is described in Chapter 6. This study compared the free recall descriptions of a staged event by three groups of children aged 7 and 10 years old. The three groups were (1) A control group of children interviewed alone, as is common in eyewitness interviews. (2) A witness interviewed with peer support. That is, a witness is questioned in the presence of a peer who had not witnessed the staged event. (3) A dyadic recall group, that is, pairs of witnesses giving a combined account of the event.

The first study found that dyads recalled more than individuals, but the presence of a peer had no influence on recall. This was probably because the peers, termed non-witnesses, knew nothing about the event under discussion and thus could be of little practical assistance. In the second experimental study, described in Chapter 7, children aged 4, 7 and 10 were questioned about a staged event. There were two types of recall interview conducted, (1) A control group, as in the first study. (2) Child witnesses interviewed in the presence of a peer who had not witnessed the staged event, but had discussed the event with the witness prior to recall.

The second study found a large effect of the experimental group on the children's free recall. Those interviewed in the presence of an informed non-witness recalled far more than those interviewed alone, with no detriment to the accuracy rate. During the recall interviews the contribution of the non-witnesses was negligeable. This result was

interpreted as evidence that the very presence of the informed non-witness led to the improvements in free recall. However, this conclusion was not entirely justified given that the second study included the confounding variable of discussion as well as social support. Consequently, a third study looking at the separate and combined effects of discussion and social support was carried out.

Chapter 8 includes details of the third study. Once again, children aged 7 and 10 witnessed a staged event. The key variables here were the absence and presence of discussion prior to recall, and the absence and presence of a peer during the interview. Four types of interview were to be studied. (1) Control, child alone, no discussion. (2) Child with peer support, no discussion, as in study 1. (3) Child with peer support, after discussion, as in study 2. (4). Child alone, after discussion. This study found that although the presence of an informed non-witness (group 3) led to the greatest improvements in recall, the presence of discussion alone (group 4) also had some benefits.

Chapter 9 addresses the question of why children's testimony is viewed so sceptically, even though it tends to be highly accurate. Here the free recall protocols from the three studies were examined for signs of powerless speech, that is, hesitant or nervous speech. It was found that all of the children's accounts were characterised by the widespread use of powerless speech. It is proposed that this probably explains the low levels of perceived credibility of children's statements.

Chapter 10 discusses the results of the thesis. The interactions between witnesses and non-witnesses are classified into different forms of helping, however, the results suggest that it is not through direct assistance (e.g., prompts) that the non-witnesses influence recall. It is their very presence and their potential for helping that is significant. Possible criticisms of the thesis are discussed.

Chapter 11 considers the implications of the studies, looking at the potential value of social support in interviews of child witnesses and in laboratory based studies of memory. The results of the study are used to support the decoding deficit hypothesis, that is, the quality of children's free recall is largely determined by factors present at the retrieval stage of memory. The present research shows one way of minimising these problems. Chapter 11 also considers some possible studies arising from the issues identified in the thesis. Designs for studies on the provision of adult social support are proposed, as are designs for examining the question of why children are perceived as poor witnesses.

CHAPTER 2

Children's Ability

to

Recall Information

2.1 Age Related Differences in Free Recall

In this section the evidence concerning children's ability to freely recall information is discussed. It will be shown that in eyewitness studies young children tend to give only brief accounts of events. Older children and adults consistently recall more information but these accounts do not appear to be any more accurate than those of the younger witnesses. The findings of experimental studies will be contrasted with the results of more naturalistic observations which suggest that children can provide detailed accounts of incidents.

Eyewitnesses may be asked to relay descriptions of a wide variety of events in an even wider set of circumstances. The most obvious need for eyewitness descriptions is after some criminal activity such as a robbery, or after an accident. In such circumstances the witness is asked to describe an incident of perhaps only a few seconds duration. The incident itself may have been either quite dramatic and eyecatching, or quite mundane and easily missed. The witness may not even have realised they had witnessed anything of importance leaving the interviewer with the intriguing problem of how to direct subjects to search their memory for relevant details. On other occasions events such as sexual abuse may be quite traumatic and last over long periods of time.

Just as event types may vary, so might the circumstances in which recall is elicited. Recall may be requested either immediately or after a period of months or even years. The interviewer might be a police officer, social worker or lawyer, each of whom might stress the importance of

remembering different aspects of the event. They may ask for overall descriptions or focus on only one crucial detail. Interviewing styles can vary as well, for example the interviewer may be either aggressive or supportive.

The range of possible methodologies open to eyewitness researchers is thus quite varied. However, there exists one precondition on all research, namely the need for a high degree of face validity in studies to maintain credibility. The legal profession, for whom most of the studies are designed, tends to be highly sceptical about the contribution that psychology can make to the legal process (e.g., Loftus and Monahan, 1980) and so research needs to be clearly applicable to real-life problems. Typically, the face validity requirement is met by testing recall of meaningful live events, rather than using films or written materials. Ethical constraints on unduly stressing subjects normally prevent the use of arousing events such as staged crimes, consequently the live events tend to be designed so as to be "emotionally neutral" (Yuille, 1987).

Age related differences in recall have been demonstrated in several studies that arguably meet this face validity criterion. Probably the most widely cited of these is that by Marin, Holmes, Guth and Kovac (1979). In this study, subjects from four age groups (ages 5-6; 8-9; 12-13; and college students) were interviewed individually about a witnessed event. The event involved an angry confrontation between two experimenters and a confederate, lasting about 15 seconds. After an intervening task of 10 or 30 minutes the subjects' recall was assessed using free recall, objective questions (including 1 leading question), and photo identification tests.

In the free recall section, subjects were told that the incident was staged and asked to describe what had happened. The mean numbers of correctly recalled items were found to increase with age until the seventh and eighth grades (ages 12-13) when it closely matched adult levels.

On average, the youngest subjects recalled only a single item of useful information, whilst the college students gave five times more than this. However, it is interesting to note that the youngest age group also gave significantly less incorrect statements in free recall than any other group. That is, they gave fewer descriptions of items, or events, that had not actually been part of the original event.

A more recent study by King and Yuille (1986) supports the general findings of Marin et al.. King and Yuille (1986) tested subjects from four age groups (mean ages 6.6, 9.9, 11.9, and 16.0 years). The study consisted of two parts, first the subjects witnessed a staged event and then they saw a series of slides depicting a purse snatching.

For the staged event each child was tested individually. The event consisted of a confederate entering the room, carrying a tray of plants. He briefly spoke to the child, tended the plants and then left. The event took about two minutes. The interviewer was not present during this time. After a filler task the children were questioned. The children were first asked to describe what the man had done (event description) and then what he had looked like (physical description).

The slide event was then shown. Once again, the interviewer was not present at this time. The free recall interview was structured in the same way as the staged event.

In summary, King and Yuille (1986), as with the Marin et al. study, showed that the eyewitness abilities of children can vary with the age of the child. Although the findings from both the live and the slide event showed an age related progression, it is interesting to note that the scale of these differences was different for each event type. For example, in the live event, the physical description scores of the oldest subjects (a mean of 5.36 correct statements) was approximately twice the score of the youngest children (mean of 2.29). However, the comparable scores in the slide event showed the oldest subjects giving more than three times as many statements as the youngest group (9.64 vs. 3.00 statements respectively).

For the live event, as with Marin et al., the older subjects gave more incorrect statements than their younger counterparts, but the overall accuracy rates of the free reports (event and physical descriptions combined) showed only slight variation with age. That is, the proportion of correct to incorrect information was consistently high across all age groups.

There were, however, differences between event and physical descriptions. The event descriptions were consistently reliable for all age groups; however, errors were found in the physical descriptions. This became more marked with age as the older subjects were more likely to

include "filler" information (inferences). The majority of errors were concerned with colour descriptions of clothing.

Another study demonstrating age differences in free recall was that by Goodman and Reed (1986) in a study involving an arm movement game. Here with subjects aged 3, 6 and adult, there was a main effect of age. Adults recalled more than both of the other age groups, and the 6-year-olds recalled more than the 3-year-olds. This study differed from its predecessors in that the free recall accounts were only taken after the participants had been exposed to misleading information provided in a series of suggestive questions, just prior to the free recall.

Although there was no effect of these suggestions on any age group, individuals of all ages made other kinds of intrusion errors. For example, adults tended to recall that the confederate introduced himself when in fact the experimenter introduced him. Adults made significantly more such intrusion errors than either of the other groups, whilst the children's scores were not statistically different from each other.

Taken together then, the studies by Marin et al. (1979), King and Yuille (1986) and Goodman and Reed (1986) suggest that the amount of information provided in free recall descriptions of witnessed events increases steadily until preadolescence, at which time it reaches adult levels. Young children will only give fragmented accounts, typically containing only a handful of details. However, though limited in size, these statements are generally seen as being highly accurate, or at least no more inaccurate than the comparable statements of adults. The age

differences demonstrated so far seem to centre more on the overall amount recalled, rather than the kind of information recalled, implying a quantitative rather than a qualitative difference.

It is worth noting that the age related differences in recall in eyewitness studies are comparable with the age related performance trends found in other learning experiments using materials such as lists of items (e.g., Cole, Frankel and Sharp, 1971; Kobasigawa and Middleton, 1972; Bjorklund and Jacobs, 1985; Bjorklund and Harnishfeger, 1987).

The experimental studies cited thus far have typically portrayed young children's recall abilities as deficient, as compared to those of adults. However, Brown and DeLoache (1978) warned against placing too much reliance on lab-based studies. They suggested that before reaching any conclusions about the competency of children, researchers should become thoroughly familiar with the task demands of their experiments and how these appear to the child. That is, one must know whether the child is familiar with the materials and the task demands, whether they can understand the instructions, and whether the point of the experiment seems reasonable to them.

This has important implications for eyewitness research in that when events have some meaning or importance to a child, as should often be the case in eyewitness research, given the range of subject matters studied, then recall performance may be expected to be better than in more ambiguous situations.

Case study reports of children's memory suggest that even children as young as three years of age can provide fairly detailed accounts of events. The most significant example here is that of Jones and Krugman (1986) who report on a case in which a 3-year-old girl, Susie, was sexually assaulted and left for dead. Incredibly, the girl survived the assault and supplied the police with a description of her assailant and later managed to identify the man from a set of photographs. The man's confession to police officers confirmed the accuracy of the girl's account. Similar reports on the abilities of 3-year-olds are given by Goodman (1984a) and Davies, Flin and Baxter (1986).

These examples compare with the "quasi-naturalistic" studies of young children's memory (e.g., Nelson and Ross, 1980; Todd and Perlmutter, 1980; Wellman and Somerville, 1980; Sheingold and Tenney, 1982). More recently, Forbes (1988) has described the impressive memory of his 2-year-old daughter Morag who could, for example, accurately recall the names of senders on some 50 Christmas cards.

In all of these studies it is not argued that the recall of young children is as good as that of older children or adults, rather it is suggested that these accounts emphasise a greater degree of competency than is apparent in the lab-based studies. For example, contrast the claim of Marin et al. that the youngest children (aged 5-6) only recalled one piece of useful information, to the recall performances of Susie or Morag. That is, although young children do not necessarily recall a great deal of information they can still make effective witnesses.

In conclusion, the picture we have of children's abilities to relate accounts of witnessed events to investigators is one in which the age of the witness would generally reflect the length of the description. However, there is no apparent age related effect on the actual quality, or accuracy of the free recall accounts.

The question that then arises is, why do younger children recall less than their older counterparts, and what, if anything, can be done to improve this state of affairs. In the following sections some potential explanations for age related differences in recall will be discussed. These factors include children's ability to encode information; the effects of the knowledge base on recall; the ability to make inferences; organizational factors in memory; and the effects of context on memory testing.

2.2 Age Differences in Encoding Abilities

An issue of debate in the eyewitness literature (e.g., King and Yuille, 1986) is whether the recall deficits of young children are caused by problems during the encoding of information (the encoding deficit hypothesis), or in retrieval problems (the decoding deficit hypothesis). Let us first turn to the ability to encode information.

It has been suggested that there are age differences in how children represent or encode information (e.g., Piaget and Inhelder, 1973). For example, preschoolers have been shown to be especially attentive to the physical characteristics of stimlui, such as the acoustic features of

words, whereas older children are more apt to be attentive to conceptual features, such as the semantic properties of words (Bjorklund and Muir, 1987). However, it is not certain that children actually observe less than adults. In some situations, children may sometimes see things that older children and adults miss. For example, Neisser (1979) showed that younger children may be more attentive to peripheral, or seemingly unimportant elements of events. The ability to increasingly attend to core issues and to ignore non-relevant information, is seen as developing with age.

Several studies (e.g., Bjorklund, Ornstein and Haig, 1977; Ceci, 1980; Sodian, Schneider and Perlmutter, 1986) have shown that under certain conditions, even young children can be led to process to-be-remembered words according to semantic information available in permanent memory. For example, Moely, Olson, Halwes and Flavell (1969) gave children (aged 5 to 11 years) pictures of various objects to remember. They found that older children rearranged the pictures to form categories. When younger children were encouraged to do this, their recall improved. Thus, the deficits of young children appear to be attributable to their failure to adopt a strategy which they are capable of using.

Ornstein and Corsale (1979) suggest that children may also fail to process information in preparation for recall, partly because they do not understand what it means "to remember". However, even though young children may not fully understand the specific task requirements of recall studies, it is possible that some sets of materials (e.g., highly related items) may elicit organization-like processing. For example, Lange (1973, 1978) suggested that young children's clustering in recall may be more a function

of the associations among the items themselves than the result of the deliberate use of a memory strategy. Although the use of organizational processing at stimulus input would appear to reflect a deliberate decision by the child, and in this sense be somewhat different from Lange's automatic clustering, it is nonetheless possible that the kinds of materials (i.e., related vs. unrelated) used would affect the tendency to utilize any strategies.

The results of these studies suggest that in certain circumstances, young children may be able to encode information as capably as adults. However, Davies, Flin and Baxter (1986) suggest that except in isolated instances, as in the child remembering the licence plate of a vehicle involved in a crime, eyewitnessing rarely involves deliberate memory. Accordingly, differences in performance with age due to encoding strategies will be minimised. A similar point was made by Cole and Loftus (1987) when they suggested that in many cases, the events which children are to be questioned about occur without prior knowledge that something is about to take place which should be remembered. The problems concerning children's encoding of information may not be key factors in influencing children's recall. Of more importance are the use of retrieval strategies, namely, the difference between what could be remembered and what is remembered, which will be discussed in later sections.

2.3 Knowledge base and Recall

An important factor in influencing recall would seem to be a person's knowledge base. It is generally true that the older child knows more than

the younger child and is thus better able to interpret events and thus report them accurately (Bjorklund and Muir, 1987). However, knowledge will not always favour adults over children. In fact, there is now evidence to suggest that for some topics, children's knowledge can exceed that of adults, leading to superior recall from children, rather than adults. Recall is thus seen as being knowledge dependent, rather than simply a function of age.

It is now generally accepted that a person's acquired knowledge, or his "memory in the wider sense", powerfully influences what he stores and what he retrieves from storage, or his "memory in the strict sense" (Piaget and Inhelder, 1973). Similarly, inputs that have little meaning for the individual, namely those that do not fit readily into his acquired knowledge structure, tend to be hard to store and retrieve (Flavell, 1977).

This claim is supported by the study by Richman, Nida and Pittman (1976). Here, meaningfulness values (that is, whether or not words were understood) for a series of words were obtained from children in the kindergarten, second, and sixth grades. Richman et al. then constructed recall lists which varied on this dimension, and gave them to children in each of the three age grades. Age differences in free recall were found when the lists differed in terms of meaningfulness. However, the youngest children's recall was just as good as that of the older children when meaningfulness values were equated over age. Thus performance differences were eliminated when meaningfulness was equal.

The importance of the knowledge base on recall has also been shown in a number of studies in which the child subjects are 'experts', relative to adults. For example, in a famous study, Chi (1978) showed how children who were chess experts recalled more legitimate arrangements of pieces than adults who were novices at the game. To demonstrate that these effects were the result of knowledge about chess, the subjects also performed memory-span tasks in which the location of digits rather than of chess pieces was tested. Results of this digit-span task were exactly reversed from those of the chess task. That is, developmental trends were obtained, with adults recalling more digits and taking fewer trials to reach perfect recall than did the children.

Similar findings were also reported by Lindberg (1980) who found that children recalled a great deal more than adults about topics such as cartoon characters, teachers, and certain books.

Knowledge may serve to improve subsequent recall, but it may also have undesired consequences. A good example of this phenomena is the study by Ceci, Caves and Howe (1981) which examined the memory of children (aged seven and ten) for stories which featured familiar characters (e.g., The Six Million Dollar Man, James Bond, Tarzan) in either familiar (congruent) or unfamiliar (incongruent) roles. For example, an incongruent story would be one in which The Six Million Dollar Man couldn't carry a can of paint because it was heavy.

Ceci et al. found that children's long-term recall of these stories showed systematic distortions in the direction of their pre-experimental

knowledge. Long-term memory for unfamiliar characters in parallel stories showed no such shift, indicating that the memory distortion for the incongrous information was influenced by prior knowledge. Information that was congruent with prior expectations was largely recalled very accurately.

Ceci et al. argue that distortions and errors in memory are, therefore, not all due to random forgetting and may instead reflect active processes, such as incorrect inferences (Paris and Upton, 1976). Rather than forming a literal copy of information, the child transforms it, using processes of integration and reorganization so that memory for the new material is consistent with existing cognitive structures.

This long-term distortion, although evident in both age groups, was more marked for the younger subjects. Ceci et al. suggest that this may have reflected the greater levels of metacognition in the older subjects. That is, these children may have made a mental note to themselves that certain characters were described in terms contrary to their prior expectations. Later, during recall they may have remembered being suprised and consequently recollected in an appropriate manner. The incongruity having acted as a mnemonic cue.

Here then, existing knowledge does influence children's long-term recall of information. This influence is through two proceses. First, it may simply bias a person's recall in the direction of their prior knowledge, this seems to be most evident in younger children. Or second, it may serve the almost opposite function of biasing recall in the direction away from prior expectations. However, this may depend on the subject's

ability to use the new information as a form of organizational strategy, as for example, in cases where certain behaviours are striking because they contradict existing schema. This issue of organizational factors in memory will be discussed in more detail later.

From these studies one may conclude that knowledge can influence a person's recall of information. However, any such effects will not automatically become more evident with increasing age. In fact it is quite possible that for certain topics or pieces of information, that children may have a greater knowledge base than adults.

If one then considers the possibility that children are quite likely to be interviewed about activities with which they are quite familiar, we might expect their memories to be at least as good, and on occassion better, than those of adults (Johnson and Foley, 1984). That is, a large number of witnesses are likely to be interviewed about events taking place within their own 'environment', and possibly involving known people, roles or settings (e.g., a familiar shop). Therefore, the degree of prior knowledge possessed by each witness will generally be quite high, each person being an 'expert' on their 'home ground'.

However, any testing conducted outside of this domain will only be influenced by the subject's general knowledge base, local knowledge being of minimal, if any, value. Thus in unfamiliar locations, or new situations, adults may be expected to perform at a higher level than children because of their greater all-round knowledge base.

Therefore, traditional methods of testing eyewitness memory, namely the use of films depicting events in unknown locations, would probably consistently favour adults over children, whilst real-world studies are not so likely to be biased in favour of either population. To conclude from film-based studies that children are likely to make poor witnesses could well be invalid.

The King and Yuille (1986) study described in section 2.1 appears to support this contention. In that study it was found that the scale of age related differences in recall was greater in the slide condition than the live event condition. When one considers that slide or filmed events are typically used in eyewitness research involving children (e.g., Cohen and Harnick, 1980; Parker, Haverfield and Baker-Thomas, 1986) then it is not suprising that large age related differences are found. The initial knowledge base of the subjects may be at least partially responsible for these findings.

2.4 The Ability to Make Inferences

A question that arises out of the studies described in the previous section is that of how does a child use his or her knowledge to elaborate information that is to be remembered? One factor that seems to be important is the child's ability to make inferences from the material he or she is asked to remember.

It is possible that what is stored in memory may include more information than was initially presented. Flavell (1977) suggests that in

memory, subjects will disregard some features of an input, highlight others, integrate or reorganize still others, and even add information not actually present in the input. The act of comprehending and encoding into memory is thus a Piagetian assimilation-type process of construction of an internal conceptual representation of the input (hence, the term "constructive memory").

There are a number of studies which have examined the ability of subjects from different age groups to make inferences in their comprehension of a narrative or event. One early example was that by Flapan (1968) who showed films to children aged 6 to 12, and then asked them to say what the characters had been feeling. Because the feelings were not explicitly stated in the dialogue the assumption was that the child would have to infer them from facial expressions, or from reactions to actions and their consequences. Flapan found that as the children got older, their answers more closely matched those stated by adults. For inferences concerned with feelings, Flapan concluded that younger children cannot make such inferences, or at least have difficulty in doing so.

However, Stein and Glenn (1979), examined this issue again, using a different methodology. Here, children were read stories and then asked a series of "Why?" questions on each major category of story information. When asked for what was the most important aspect of the story, many of the children stressed the motives, feelings, and thoughts of the characters. More than a quarter of the children gave inferences of a moral nature as answers, with no age related differences for this kind of inference.

A more widely quoted study on children's ability to make inferences was that of Brown, Smiley, Day, Townsend, and Lawton (1977). Brown et al. taught children (from grades 2, 4 and 6) either about "Eskimo Targa", "Indian Targa", or, as a control, about the Spanish. One week later, children were told a story called "Tor of the Targa" which they were then asked to recall in their own words. The amount of information recalled increased with age. However, more interestingly, the children who had been given some form of previous recall orientation (either Eskimo or Indian Targa) also brought extra information into the story, namely intrusions that related to their particular orientation. The proportion of such intrusions increased with age.

It is evident from this last study that even young children may fail to distinguish between what was presented, and what they know about what was presented. The children in this study elaborated on the story with whatever knowledge they could bring to bear, something that seemed to increase as they grew older. As Brown et al. (1977, p. 1464) put it: "The intrusions were creative errors as they added to the cohesion and coherence of the story that was remembered and probably helped initially in rendering the material interpretable."

Such findings provide evidence that recall is enhanced when a relevant recall framework is provided and it may be, as Brown et al. (1977) point out, that one of the reasons that recall typically increases with age is that older children are better able to identify relevant contexts for comprehension and recall. In support of this interpretation is the finding

that older children's recall protocols normally contain more theme relevant intrusions than younger children's.

Overall, the inference studies show that as they get older, people increasingly draw on relevant knowledge in comprehending and organizing information. This may lead to both improvements in recall (e.g., Lindberg, 1980) as well as confusions (e.g., Ceci et al., 1981). Generally, children are less likely to make inferences than adults, which may limit their recall. However, one advantage of a limited ability to make inferences is that subjects are less prone to distortions in memory introduced by unwarranted inferences or incorrect expectations (Johnson and Foley, 1984).

2.5 Organizational Factors in Memory Development

The generally poorer recall performances of children may also be partially attributed to a failure to develop systematic retrieval plans (or strategies) to guide recall. The child's failure to use such strategies may occur because the child does not realize that such information would be useful, or possibly because of motivational or other reasons. However, it is worth noting that when young children do use strategies, perhaps through the experimenter providing appropriate hints, recall improves. Thus young children appear to suffer a "production" deficiency in recall (Liben, 1982). This deficiency was effectively demonstrated in the study by Kobasigawa (1974).

Kobasigawa examined the issues of when children are trying to remember something, what kinds of retrieval cues are useful in recall, and are

children increasingly likely to make efficient use of available retrieval cues as they get older? Children aged 6, 8 and 11-years-old were presented with eight sets of pictures of three items belonging to a given category and told that they would later have to recall them. The sets included such items as three types of fruit, three pieces of furniture, etc. Each set of pictures was accompanied by a cue card (e.g., pictures of a seesaw, slide and swing were accompanied by a picture of a park).

The children were then assigned to different experimental conditions and asked to recall as many of the items as possible. One-third of the children were instructed to recall as many items as possible with no cue cards present (free recall condition); one-third were given the cue cards face down in their laps and told that they could use them if they thought it would help their remembering (cue condition). The remaining third were presented with the cards one by one and told that there were three small pictures that went with the picture on the card and to attempt to remember the three small pictures (directive-cue condition).

It was found that the presence of a cue improved the recall of the oldest children whether or not they were instructed to use it. When the cue was present, they were able spontaneously to initiate a retrieval strategy. In contrast, the first graders did no better under the cue condition, when the cue was available but they were not directed to use it, than under the free-recall condition. Only when a strategy for use of the cue was presented to them and they were directed to use it did their recall improve, and then they remembered as effectively as the sixth graders.

Similar results to those of Kobasigawa were also reported by Davies and Brown (1978) who showed a series of 20 objects, one at a time, to a group of five year olds. Later, when asked to recall them, the children were only able to spontaneously recall about 45% of the items. However, when systematic search prompts were provided, such as "Do you remember seeing any fruit? Any animals?", the recall figure rose to 69%.

These findings have some interesting implications since they demonstrate the impact of different instructions on free recall. In eyewitness studies although there is a general idea of what constitutes free recall, there are vastly different ways of accessing it. For example, an important point could be the difference between the researcher using a simple prompt such as, "Tell me about what you saw", or using more of an organizational approach, such as, "Tell me about what you saw, including what was said, what the man was wearing" and so on. Both techniques access free recall, but would seem to have different implications for the type, or amount, of data recalled.

This point was illustrated in the study by Dent and Stephenson (1979a). In this study 10-11-year-old children's recall of a filmed event, was elicited through either free report, general questions, or specific questions. These conditions may be seen as increasingly specific levels of organizational prompts.

Dent and Stephenson (1979a) showed that either form of prompting impaired the accuracy of children's recall. Free reports produced much more accurate, though less complete recall than answers to general or specific

questions. Interestingly, descriptions of people were particularly impaired by prompting, whilst narrative information was less easily influenced and was even enhanced by the minimal prompting involved in general questions.

This finding suggests that the level of organizational prompt used by each researcher may influence the amount of information recalled. When one considers the findings of Kobasigawa, suggesting that younger children benefit from prompts to such an extent that their performance matches that of older children, then an apparent weakness in the eyewitness literature appears. That is, when a researcher uses a 'bland' introduction to their recall task, without any degree of organizational prompts, then traditional patterns of recall increasing with age are likely to be found. However, when a more elaborate introduction is used, then age differences could well be minimized. For example, the instruction to "Tell me all about the man" contains far less of an organizational prompt than the instructions "Tell me all about the man, including what he looked like and what he did".

Clearly this is only speculation, the size of the effects of differing levels of organizational prompts may not be enough to fully account for age related differences in recall. However, they may go some way towards explaining different sizes of age related effects between studies. This is clearly an issue that needs to be clarified.

As well as affecting the amount of information given in free recall, the organizational strategies used to guide recall, may also influence the kind of information that is recalled. That is, different organizational

prompts may affect the recall perspective with which a person attempts a task.

This is a topic that was studied by Anderson and Pichert (1978), who had adult subjects read a story about two boys "playing hooky" from school, from the perspective of either a burgalar or a person interested in buying a home. After recalling the story once, subjects were directed to shift perspectives and then recall the story again from the new viewpoint of either a burgalar or house buyer, depending on their original orientation.

In the second recall session subjects produced significantly more information important to the second perspective that had been unimportant to the first. They also recalled less information unimportant to the second perspective which had been important to the first. The study clearly shows the operation of retrieval processes independent from encoding processes. The results suggested that the instruction to take a new perspective led subjects to invoke a schema that provided implicit cues for different categories of story information.

Schmidt and Schmidt (1986) attempted to repeat Anderson and Pichert's findings in a younger population. Schmidt and Schmidt initially proposed that young children's recall would be less likely to show evidence of changes in recall following different recall perspectives. They read children (mean ages 5.11, 7.11 and 10.0 years), four short stories, each of which was preceded by one of two, equally valid "themes". The children then gave free recall accounts of each story. The children were then asked to give a second free recall account, after having been presented with either

the original theme again (the on-theme condition), or the alternate second theme (off-theme condition).

For example, if a story included two themes, such as a fire truck and a trip to the post office, only one of these themes was identified prior to the child hearing the story. For example, one story was preceded by the statement, "This is a story about how Sam saw the fire truck come up the street and go to the fire at Mrs. Brown's house." Here, in the on-theme condition the experimenter reiterated this statement prior to the second recall test.

In the second recall session in the off-theme condition, the child would be given a new theme, such as, "This is a story about how Sam asked his mother if he could go to the post office and then went there to pick up his package." Free recall was then assessed again.

Interestingly, evidence of theme switching was most pronounced for the youngest children. Whilst the older subject groups recalled more following the provision of the old theme information, the youngest subjects recalled more following the provision of a new theme.

This may be accounted for by the tendency of the youngest children to initially attempt recall in line with whatever theme they were presented just prior to recall. However, the older subjects tended to recall the stories firstly in line with whatever initial theme they had been presented, and only then would they switch to the new theme. Thus the recall of kindergarten children was strongly tied to the thematic structure

as explicitly defined by the experimenter, whilst the older children were more independent and flexible in their ability to infer thematic structure and to generate their own retrieval plans.

Although the Anderson and Pichert (1978) and Schmidt and Schmidt (1986) studies were concerned with theme switching across recall trials, it has implications for eyewitness interviews as it suggests that younger children are more likely to bias their free recall accounts in line with the organizational cues provided by the interviewer. However, older children would seem to be less dependent on the frameworks provided.

The study by Zimmerman and Bauer (1956) would seem to bear out claims concerning the importance of the retrieval perspective on influencing the kind of information that is recalled. Here, adults' recall of correct points, or arguments, on subjects such as teachers' salaries, was influenced by whether or not the message was congruent with the views of the audience, who would, for example, be either supportive or hostile to the arguments. Supportive audiences increased recall, whilst hostile audiences decreased it.

These differences were not simply a function of more information being stored by the respective subgroups. Recall tests carried out immediately after the material had been presented suggested that there were no obvious differences in storage. However, when the subjects were asked to recall the information a week later in the presence of audiences, then there were clear differences.

The general conclusion of the study was that the anticipation of communicating to an audience of which one has preconceived ideas can affect what people will remember. Zimmerman and Bauer suggest that "When the audience is seen as agreeing with the new information or arguments presented, recall of that information is more accurate than when the audience is perceived as disagreeing with the information or arguments." (p.245)

The implication of the studies cited here is that when accessing free recall the interviewer should consider the reason they are giving for needing the information. That is, how one directs a subject's attention to the information to be recalled may influence their recall, both in terms of amount and type. This would seem to be a particularly important point with young children as they are probably less likely to understand an interviewer's motives, particularly in experimental tasks. When the child understands the adult's reason for asking a question, they would probably be more able to give the necessary information. However, when the child is not fully aware of the adult's intentions, or does not have an adequate recall perspective, then misinterpretations may arise as the child is forced to give some meaning to the adult's questions. This problem will be discussed further in the next section on the effects of context on recall.

2.6. Context Effects on Memory

The final issue to be discussed in relation to children's ability to recall information concerns the effects of contextual factors on memorization. Contextual factors are the more general aspects of testing,

such as the purpose of the task, that can affect performance. There is another aspect of context that can be important, namely the social context, which will be discussed in detail in Chapter 4.

The ability of children to use the encoding and retrieval strategies described thus far can also be influenced by the context in which memorization takes place. That is, children's willingness, or ability to use strategies can vary across both time and situation. For example, it has been claimed, most notably by Istomina (1975), that the assessment of children's memory capacity and metacognitive skills is influenced by the artificiality of many laboratory tasks used by most experimental researchers, which the child may not fully understand or engage in. This is an important accusation. If children do not remember details because the purpose of the interview is lost on them, then it is not suprising that they recall so little.

To support her case, Istomina contrasted children's memory for lists in a relatively standard list-learning situation, with their memory for comparable lists embedded in a meaningful (to the child) activity. The "meaningful" task used by Istomina was a shopping list to be taken to a play store. Recall was clearly superior (around 2 to 1) in this condition. From these results Istomina suggested that when remembering is an intrinsic part of some meaningful activity, one obtains a higher estimate of young children's memory capabilities. This is because the children are more motivated to remember. Istomina argues that although the youngest children know what it means to remember "...this is not enough: they must not only know what remembering is by itself but also be able to see it as an end

result, an objective to which activity must be directed, i.e. to grasp it as a goal" (p. 59). The goal of remembering is more salient in the game situation, so that children are more likely to adopt it as their own goal. This is seen as contrasting with other, more typical memory studies in which we are often uncertain that the child shares the experimenter's goal.

This has implications for eyewitness research in that when the child views the recall task as meaningful, then their recall is likely to be higher than in more ambiguous situations. This implies that interviewers should ensure that their subjects understand the purpose of the task before beginning an interview. Meaningfulness, like the recall perspective, could influence the amount of information recalled. However, despite the apparent logic of such claims there is some evidence to dispute its validity, most notably from the studies by Schneider and Brun (1987) and Weissberg and Paris (1986), which attempted to repeat Istomina's findings.

Schneider and Brun (1987) point out that although Istomina gave a detailed description of her study, including details of several individual cases, it is difficult to reconstruct the design exactly because the experimental procedure was described only in vague terms. For example, there are problems in interpreting whether or not the two experimental groups were tested in a counterbalanced order. Further, some children, particularly in the game condition, obviously asked the experimenter to repeat the items, which the experimenter did. Such flaws would generally bias performance in the direction of the play condition. Consequently, the generally superior recall found in the game condition can at least partly

be explained by methodological flaws, rather than the benefits of naturalistic experimentation advanced by Istomina.

Schneider and Brun confirmed these hypotheses in two studies, both using 4 and 6 year-old children. The first was a perceived replication of Istomina's study, complete with the apparent flaws of the study, such as repetition of the lists by the experimenter when requested. Here, recall was found to be superior in the game condition, thereby supporting Istomina. However, it seemed apparent that the repetition of the word list was an important factor in explaining these differences, largely because it was the children who requested a repetition that performed best.

In the second study the repetition of the lists was prevented. Here there was no significant effect of experimental group, although the same trend of results as study 1 did emerge.

Schneider and Brun's results are supported by the experiment by Weissberg and Paris (1986) using 3 to 7-year-old children, which also failed to replicate Istomina's findings.

The two attempted repetitions of Istomina's study show that Istomina's conclusions can no longer be seen as valid. Schneider and Brun (1987) suggest that while the context of a play activity may be more interesting and motivating for children, there is no evidence that this more favourable context also leads to better memory performance, as compared to more traditional memory tasks.

Despite the failure to replicate Istomina's findings, there is some evidence concerning the importance of personal interest and memory. For example, the study by Sommerville, Wellman and Cultice (1983) shows how motivational factors can influence recall. Sommerville et al. looked at 2, 3 and 4-year-olds intentional remembering in reminding tasks. The children were asked by their parents to remind them of something at a later time. The tasks were classed as either of high or low interest to the child (e.g., buying sweets vs. taking laundry to the dryer). At the specified time, children were asked to remind their parents of the items. It was found that the high interest tasks were correctly performed more often than the low interest tasks. Particularly interesting was the finding that for the high interest tasks, there were no age differences in performance.

This may go some way to explaining the differences between the portraits of children's memory capacities, based on experimental results or more naturalistic observation. In standard memory tasks, the experimenter's reasons for requesting the child's cooperation may be obscure, at least to the child. In real-life situations, the rationale for an adult asking questions is likely to be highly salient. The child's understanding of what is required of them would thus probably be greater in naturalistic settings. Further, children are likely to be more highly motivated to describe an event in real-life situations.

Here then, recall of information is influenced by the context in which recall is tested, that is, whether or not the context is meaningful, or inherently interesting for the subject. This returns us to Brown and DeLoache's (1978) suggestions concerning the need to be aware of how

children perceive experimental tasks. When tasks are ambiguous or apparently meaningless, recall will be poor. When the task has a clear purpose, recall may be superior.

2.7 Conclusions

This Chapter has shown that children's free recall descriptions of witnessed events are typically very brief. This finding has been most evident in experimental studies where age related differences are quite marked. However, children will not always recall less than adults. When differences in the knowledge base are equated across age and when the task is meaningful, the recall of younger children tends to improve. The use of films in eyewitness research coupled with instructions that can appear ambiguous to children, would, therefore, tend to bias performance in favour of adults.

The most important finding here for interviewers is that when children are provided with organizational prompts their recall increases, suggesting that children do know more about an event than they will spontaneously report. Decoding factors thus appear to be more important than differences in encoding.

In Chapter 3 the types of prompts used by interviewers and their effectiveness will be discussed. The influence of contextual factors on recall and ways in which the social context can be manipulated will be discussed in Chapter 4.

CHAPTER 3

How Children Interpret and Respond to Questions: Sources of Suggestibility in Interviews

3.1 Strategies to Enhance Recall: Questioning Witnesses

Chapter 2 showed how in eyewitness studies, young children will probably only give brief accounts of witnessed events. Interviewers, however, are unlikely to tolerate this situation since they need to obtain as full an account as possible (Dent, 1982). Consequently, in order to "fill in the gaps" they will ask the witness questions about the incident, either in the hope of sparking further elaborations or to check certain ideas. In this Chapter some of the evidence on children's responses to questions is presented and explanations are given as to why interviewing is so problematic. This analysis will explain why children can appear so suggestible in interviews.

It has already been shown that young children can recall more than they will spontaneously report. For example, Kobasigawa (1974) suggests that developmental differences in recall may be substantially reduced when remembering occurs in highly structured situations. Johnson and Foley (1984) suggested that this implies that young children may profit from directive, but non-suggestive, questioning. However, when such a technique is adopted, in studies of children as eyewitnesses (e.g., Dent and Stephenson, 1979a), although the amount of obtained testimony does increase, the corresponding rise in the error rate of the information seriously undermines its value. As will be shown below, age related trends in responses to direct questions are somewhat contradictory, but support the Dent and Stephenson (1979a) findings concerning decreased accuracy.

The use of questions as a means of information gathering is typically employed after the witnesses have given their unprompted free recall accounts and often takes the form of an organizational strategy for recall. That is, it draws attention to several possible areas of information which the witness may have neglected to include in their free recall acounts (e.g., describing clothing). However, in experimental tasks at least, questioning more often takes the form of a recognition memory test concerned with the specific details of an event (e.g., "Did he have a black coat on?"), which may require only a "yes" or "no" response from the witness.

In experimental studies questions may be asked either in addition to free recall, or as an alternative. The number of questions asked can vary from a handful, concerned with random aspects of a witnessed event (e.g., Marin et al., 1979; Parker, Haverfield and Baker-Thomas, 1986), to longer sets of questions which cover every possible aspect of an event (e.g., Dent and Stephenson, 1979a; Pear and Wyatt, 1914).

Questions are typically divided into two categories. The first of these, direct, or objective questions, includes questions about aspects of the witnessed event that the interviewer knows have happened. This is an easily used procedure in experiments, since the witnessed event was under the control of the researchers.

The second type of questions are termed suggestive, or misleading. These are questions about aspects of the event that the researcher knows to be incorrect. The misleading question may either include incorrect

information (such as suggesting an item of clothing was blue, when it was not), or suppose the existence of something that was not part of the event. Such questions are believed to assess the suggestibility of subjects. The short-term effects of suggestibility may be assessed by the subjects initial responses to the misleading questions. Long-term effects are tested by the influence of the misleading questions on subsequent recall performance (as will be shown in Chapter 7).

There have been several studies to have incorporated both objective and leading questions into their designs. Marin et al. (1979) questioned subjects from four age groups (preschoolers through to college students) about a live event in which a man had entered the room and argued with another confederate of the experimenter. The children were asked 20 yes/no objective questions about the physical and behavioural aspects of the event. Generally, performance was relatively poor. There were no significant age differences in the accuracy rates on this test. On average, subjects correctly answered 74% of the 20 questions. However, since they would have been expected to answer 50% correctly by chance alone, Marin et al. argue that this figure is not particularly impressive. There were no differences in the responses to the single leading question either.

Cohen and Harnick (1980) had subjects aged 8-9, 11-12 and adult, answer 22 questions about a 12 minute film depicting a purse snatching. The questions varied by form (suggestive vs. non-suggestive). The responses to both question forms showed an age related increase in performance. In both cases, the youngest children were less reliable than the other two groups which did not differ significantly.

Goodman and Reed (1986) questioned 3-year-olds, 6-year-olds and adults (mean age 22 years), about a game played with an adult, explained as a motor task, which emphasized the man's appearance. The game lasted for about five minutes. Another adult then questioned the subjects 4-5 days after this interaction. The subjects were asked 22 questions. 17 were classed as objective, the others containing misleading, or simply leading questions. Out of the 17 objective questions the mean accuracy rates were 10.00 (age 3), 11.75 (age 6) and 12.63 (adults). The difference between the two older groups was not significant. However, both of these groups differed from the 3-year-olds. For the suggestive questions, performance increased with age, all age groups differing from each other.

In the study by Parker et al. (1986) 8-year-olds and adults saw 4 slide sequences depicting crimes. After a recognition task, subjects were asked 10 multiple choice questions of which 4 were about characteristics of the subject, 5 were about peripheral events such as information about the colour of a blanket, and 1 question was misleading. Subjects marked their responses in a booklet which listed alternative responses (including "Don't know"). For the descriptive questions the adults gave significantly more correct responses than the children, however, for the peripheral questions the children gave slightly more correct answers, although this last finding was not statistically significant. There was no effect of age on the misleading question.

Overall, these result appear to support the idea that there are some age related differences in the ability to respond to questions. However, these differences are generally quite slight in terms of actual accuracy

rates. That is, if one looks at the percentages of correct responses given by each age group, it is only in the Cohen and Harnick study that there are any marked differences. The key message here then, is that although performance generally undergoes some improvement with age, this should not be taken as evidence that children's testimony is that much more unreliable than adults. Other studies would appear to support this conclusion. For example, Pear and Wyatt (1914) showed that for some questions children's responses could be very accurate. Similarly, Dale, Loftus and Rathbun (1978) found that for items that had been present during the films shown to pre-schoolers, there was a 73-90% probability that the children would say "yes" when asked if they had seen them.

The points raised by Pear and Wyatt (1914) and Parker et al. (1986) concerning certain items being remembered more effectively than others may explain why some of the above studies conflict. It appears that children are particularly resistant to suggestions made about salient parts of an event, a finding also reported by King and Yuille (1986). Goodman, Hepps and Reed (1986; cited by Goodman, Aman and Hirschman, 1987) provide a significant example here. When children aged 3-7 were asked questions such as "Did the person hit you?" after a visit to a doctor, all of the children said "No" to such questions.

Although specific questioning about events is also used in real-life interviews (Macfarlane and Krebs, 1986) it represents a particularly hazardous method of data collection, being problematic on both methodological and legal grounds.

A major methodological problem with an approach such as direct questioning, or indeed almost any study based on organizational factors in memory, is that in eyewitness interviews, one rarely knows all the facts at the outset, so it would not be obvious what specific questions to ask a child (Johnson and Foley, 1984). Studies employing direct questioning are dependent on the interviewer having some knowledge of the event under discussion. Although this is quite feasible in experimental tasks where witnessed events are carefully controlled by the researcher, such knowledge is unlikely to be available to investigators such as police officers.

A further methodological criticism concerns the basis for distinguising between "objective" and "leading" questions. Although these distinctions are easily made in the lab, they are normally impossible to make in the field. Dent (1982) showed how even experienced interviewers would readily introduce suggestive questions when trying to elicit eyewitness descriptions. As in Dent and Stephenson (1979a) the use of prompts increased the amount of information obtained but largely undermined its validity. The distinction researchers make between leading and misleading questions is thus somewhat tenuous.

There are also problems concerning legal restrictions on the use of specific questions. Macfarlane and Krebs (1986) point out that, technically, any question that can be answered with a "yes" or "no" answer, could be classed as a leading question, since they are calculated to lead an individual to make a particular statement. Goodman (1984b) suggests that many cases involving child witnesses are lost or dropped because of poor techniques used during the pretrial stage. For example, the use of

suggestive questioning, or even suggestive line-ups can undermine a prosecution.

Although there is some debate as to what constitutes a leading question in the courtroom (e.g., Loftus and Goodman, 1985), MacFarlane and Krebs suggest that generally, leading questions and verbal reinforcement, should only be used to provide as much direction as children may need to overcome their fear and resistance to disclosure. Generally, investigators in criminal cases, tend to take the view that information obtained by suggestive interview techniques is more beneficial than no information at all, even though a subsequent criminal prosecution may be made difficult (Macfarlane and Krebs, 1986).

Even though the age related trends in responses to questions are not as marked as would have been expected. The value of direct questioning of child witnesses is limited. As stated earlier, the methodological and legal arguments against such questioning cannot be ignored. Apart from in experimental studies, interviewers are unlikely to know what questions to ask. In the following sections some sources of suggestibility in interviews are discussed. This will show how an interviewer's questions can be misinterpreted by a subject. This will show how the need to elicit more information from children results in the image of the suggestible child.

3.2 Children's Suggestibility in Interviews

Probably the most significant problem with the use of questions to enhance recall is that concerning the supposedly excessive suggestibility

of children. Suggestibility is the issue that is used most frequently as an argument against the use of children as witnesses. For example, as early as 1909, Whipple made the claim that "The one factor that more than any other is responsible for the poor reports of children is their excessive suggestibility" (p.162). This claim has been made repeatedly since then, for example, by Loftus (1979a) who stated that "In sum, the preponderence of research indicates that not only are children relatively inaccurate but they are also highly suggestible" (p.162). Children, it is believed (e.g., Yarmey and Tressillian-Jones, 1983), are especially susceptible to confusions and distortions as a result of suggestions made to them by adults. It is somewhat paradoxical then that probing questions are most likely to be used with the subjects who are seen as being the most incapable of reliably answering such questions.

King and Yuille (1986) argue that any memorial deficits that children may have, are amplified by the structural dynamics operating in the interview situation. This being illustrated by the fact that children will accept misleading suggestions even when they contradict evidence given under free recall. King and Yuille (1986) further report that on several occasions in their experimental study that children gave unprompted admissions that they had simply "gone along" with misleading suggestions. The explanation for such findings would seem to be found in the interview situation in which testing occurs.

In research with children, the use of interview testing has become so widespread that few have considered how young children work out what is expected of them. Bridges (1985) suggests that a common assumption has been

that as long as care has been taken to settle the children, to introduce the tasks properly and to present the items clearly, then the questions used in an experiment will tap underlying knowledge or mental processes in a fairly direct way. Appropriate responses are taken as indicators of underlying competence, whilst incorrect answers are deemed to be the result of ignorance, immaturity, performance biases or lapses in attention.

Bridges further suggests that children's behaviour in experimental situations usually serves to confirm the interviewer's conviction that they understand what is expected of them. Children's responses to questions are usually situationally 'appropriate' and they will typically behave in a manner that suggests that they understand what is expected of them. The possibility that adults and children are at cross-purposes is rarely considered.

King and Yuille (1987) suggest that the key problem in research with children is the tendency for adults to overestimate the child's linguistic competency. This is probably caused by the considerable difference between the child as speaker and the child as listener. A child who speaks voluntarily is in control of the topic, the ideas and the presentation, thus causing adults to overestimate their linguistic competence. However, as the listener, the child is not in control and must use all the cues available to aid their understanding of the message.

When one considers the plight of children in experimental tasks it becomes somewhat easier to understand how misunderstandings can arise. Typically, children will be asked to assist an adult in a simple test or

game. However, the rationale given to the subjects will often be obscure, or possibly even misleading, depending on how elaborately the researcher is 'hiding' the purposes of their experimental manipulations.

In such circumstances the child is often forced to give the adult's actions some meaning. For example, older children may assume that an adult asking them questions constitutes some kind of test, or assessment, which will be related to their academic performance, such as determining which 'set' or 'stream' they will be put in. This may in turn be affected by whether or not the children believe that their teachers will see the results of the test.

In interpreting the experimental situation the child will make use of any available information, including verbal and non-verbal cues, as well as the context in which testing takes place. The importance of seemingly obvious cues such as practice runs may be underestimated here.

The extent to which children will try to make sense of any test, no matter how bizarre it may be, is illustrated by the Hughes and Grieve (1980) study. Here, children, aged 5 and 7, were asked bizarre" or "conceptually ill-formed" questions like, "Is milk bigger than water?", and "Is red heavier than yellow?". Although these questions were apparently meaningless, the children would typically give answers. These answers were not simply inspired guesses, instead they were derived from either the context of the study, such as relating the colour question to items present in the room (such as cushions), or by importing context, that is, taking ideas from general knowledge (e.g., milk comes from cows).

Similarly, Strohner and Nelson (1974) showed that children do not usually guess randomly in answering an adults questions. Instead, influenced in part by context, they will apply extrasyntactic stategies, such as the probable event strategy (e.g., cats often chase mice), or upon the order "actor-action-object" that occurs in active sentences.

Here then, children are actively trying to make sense of questions within some form of meaningful context. The child's interpretation of a question may thus be very different from that of the interviewer. Goodman, Golding and Haith (1984) give a good example of this principle. They report on a case where a child answered answered a question quite literally. That is, when asked "Were you in the man's house?" the child said "no", but said "yes" to the question, "Were you in the man's appartment?"

The reason that children may give inappropriate, or incorrect responses to questions is not seen as being due to the inherent suggestibility of children. Instead, suggestibility is seen as a response to the demands of the interview situation itself (King and Yuille, 1987). Suggestibility is thus viewed as a form of sensitivity to context. Children may appear more suggestible than adults as they are likely to find themselves in more unfamiliar situations than their more experienced counterparts. Children will pay attention to anyone, especially an adult, who they believe knows how to behave in a given situation.

The ideas discussed here are equally applicable to any interview with children, not just eyewitness interviews. In fact, many of the studies cited in this Chapter stem from developmental work on children's cognitive

development, in particular studies examining Piaget's (e.g., Piaget and Inhelder, 1973) ideas on conservation.

In the 1970's there was a large amount of research looking at how children's understanding of task situations affected their responses. Some of these studies (e.g., Rose and Blank, 1974; McGarrigle and Donaldson, 1975; Donaldson and Lloyd, 1976) illustrated important limitations to Piaget's methods.

For example, Light (1983) suggested that 'pre-operational' children involved in some studies respond to what they think the experimenter means when he asks them questions, rather than to the questions themselves. Their interpretation of his meaning is highly sensitive to the linguistic and extra-linguistic context of his questions. This contradicted Piaget's assumption that the child's responses to instructions were evidence of that child's reasoning. Language was treated as unproblematic, allowing the constructor of cognitive tests a direct access to the child's underlying logical competence.

However, studies of cognitive testing tend to emphasize the context dependence of the child's understanding of words and utterances. For example, McGarrigle and Donaldson (1975) contrasted 4-6-year-old children's performances on standard tests of number and length conservation, in which the experimenter's transformation appeared to the child to be 'accidental'. Here, a "naughty teddy", manipulated by the experimenter, "spoilt" the conservation "game". There was a substantial rise in the frequency of conserving responses under these latter conditions.

Donaldson and Lloyd (1976) similarly showed how tests of egocentrism in children can be affected by the way the task is presented. Here, they had children talk with a giant panda (fitted with a microphone and speaker). The children were told the panda wasn't very clever and were asked to describe objects to it as part of a referential communication task. Here, the supposedly egocentric children were able to adopt to the listener's perspective in providing task relevant information.

These results, coupled with other similar findings (e.g., Light, Buckingham and Robbins, 1979) called into question the view that pre-operational children cannot understand the invariance principle, and suggests that it is vital to take extra-linguistic aspects of the test situation into account when assessing cognitive abilities.

Generally then, there is often a mismatch between the adult experimenter's goals and the child's understanding of what is expected of them. Experimental testing with children thus entails a number of potential hazards which may undermine the value of any conclusions drawn. In the following sections, some of the most significant problems in interviewing children will be discussed. This will demonstrate how any question, whether leading or non-leading, may result in confusions amongst children.

3.3 Source Credibility and Suggestibility

A key factor influencing suggestibility would appear to be the perceived credibility of the source of the misleading information. That is, the impact of any suggestive or misleading communication will be influenced

by the person who is conveying this material. One issue of debate has been the effects of relative levels of social status on suggestibility (e.g., Eagly, 1983; Ceci, Ross and Toglia, 1987). However, most of the experimental research carried out to date, has focused on degrees of apparent knowledge (of the witnessed event) between the subject and the source of the misleading information. That is, whether or not the subject believes that the source of the misleading information is reliable, by virtue of that person's superior knowledge of the event (e.g., Dodd and Bradshaw, 1980; Smith and Ellsworth, 1987).

The importance of relative differences in social status in determining suggestibility has often been commented on, though somewhat suprisingly, there are very few studies relating to eyewitness contexts to prove this point. Eagly (1983) suggested that much of the apparent differences in suggestibility ascribed to gender, can largely be accounted for by societal differences in role status between the sexes. That is, men are traditionally more often in positions of power than women, therefore, it is perhaps hardly suprising that women often appear more suggestible than men, even when status is artificially equated in laboratory tasks.

Developing this line of argument, Goodman (1984c) suggested that young children may thus be especially subject to suggestion, simply because so many people (older children and adults) are generally authoritative in relation to them. One of the few studies to actually offer some evidence here is that by Ceci, Ross and Toglia (1987).

Ceci, Ross and Toglia (1987) had an adult read children (aged 4 years) a story with related pictures, about a girl's first day at school. The day after the story, the children were presented with information about it that was either biased on unbiased in terms of what actually occured in the story. The important variable here was the age of the person providing this information. This person was either a 7-year-old boy or an adult. Attempts to train a younger child so as to totally eliminate the age gap proved unsucessful. Two days after this meeting the subjects were given a forced-choice recognition test of the pictures related to the story. The pictures also included some that related to the misleading information. The key finding here was that for the misleading information, the subjects were biased significantly less by the information from the child, than the same information from an adult.

Although the forced-recognition test represents a very specific form of testing recall, this study still gives an important indication of the importance of social status in suggestibility. Clearly, misleading information has more of a biasing effect when it comes from a person with authority. This result matches the finding of Kwock and Winer (1986) who asked children aged 9 and 12 years questions which implied the subject should choose from one of the two options presented, when in fact the correct answer was either one. For example, after showing subjects a black square, they would be asked, "Is this black or a square", the correct answer "both" being a rejection of either of the single options implied in the question. This study showed that when peers asked the questions, as opposed to adults, children were more likely to respond correctly. Interestingly, Winer, Rasnake and Smith (1987) found that the tendency to

reject the logical answer "both" was equally evident in adults as well as children, suggesting the importance of demand characteristics in experimental tasks, which will be discussed in the following section.

As well as social status, there is also an 'expert' component to source credibility. That is, any person may become a credible source of information, if the recipient believes that person to be well informed concerning a particular topic, that is, a relative expert. So, when a person who knows about an event and has no apparent reason to lie passes on information, then they are likely to be seen as a highly credible source of information. However, if that person has a motive to lie, or clearly knows nothing about the subject under discussion, then their communications are likely to be viewed with some degree of healthy scepticism.

In fact, there are a number of studies to suggest that when subjects are led to mistrust a particular source of information, they are more likely to detect any inconsistencies in their speech. For example, McDevitt and Carroll (1988) showed children videotaped messages in which the speaker was either consistent or inconsistent in their arguments. When children were warned that the speaker was trying to trick them, the children were far more likely to report the inconsistencies in their messages. Further, when subjects distrust the source of a message, then they are less likely to be influenced than when the source is credible (e.g., Hovland and Weiss, 1951).

Another example, within an eyewitness context, is that by Dodd and Bradshaw (1980), who argued that misleading questions will not distort or

bias a witness's memory of an event, if the witness has reason to challenge the questioner's motive and is suspicious of the interrogator asking leading questions. Here, adult subjects saw a slide sequence of a car accident. Shortly after viewing the accident, the subjects were given a written account of the event that they believed was prepared by an actual eyewitness to the accident. For half of the subjects the description contained biased or misleading information about critical elements of the accident. The other half received a non-biased account of the event. Subjects were led to believe that the eyewitness who gave the account was either a neutral bystander, or, the driver of the car that caused the accident. The driver, who would be expected to have a vested interest in the case, was seen as a less credible information source.

Dodd and Bradshaw found that the biased or misleading information only distorted the subject's memory of the accident when they believed the written account was from a neutral witness. In the condition in which the witness was the driver of the car, there were no suggestibility effects.

The study by Smith and Ellsworth (1987) bears out this point. Here, adult subjects were questioned about a filmed bank robbery. When the interviewer was believed to have some knowledge of the film, because they had studied it earlier, their suggestions were more readily accepted than those from an interviewer who was believed to be naive. Thus it appears that the source credibility of misleading information, can determine whether or not it is accepted.

These findings have a particular significance for studies involving children, since in many of them the interviewers appear to have been with the children at the time that the event was seen (e.g. Dale et al., 1978; Cohen and Harnick, 1980). This confers upon the adults a credibility factor both from social status and expert power. Young children are likely to find this situation confusing, since why should an adult ask questions about something which they should logically already know the answer.

There are a number of studies (e.g., Maratsos, 1973) which illustrate that children's performance in interviews is influenced by this knowledge variable. One example is that by Pratt, Scribner and Cole (1977) who conducted a study in which children (aged approximately 6 and 8 years) had to describe the rules of a new game to another child. The listener either had a copy of the game in front of them or did not. Speakers from both age groups gave more explicit information in the second condition. For example, 85% of the younger subjects provided at least one explicitly descriptive statement when their listeners could not see the materials, as compared to 30% when the listeners could see.

Menig-Peterson (1975) also examined this issue, highlighting possible ways in which children's use of language in interviews is modified by the listener's prior knowledge. Menig-Peterson made comparisons between contexts in which the listener did, and did not, possess prior knowledge of the situation being described (e.g., stories enacted to the child and events in which the child participated).

Two aspects of speech were studied, the appropriate introduction of new elements, and whether references to objects and persons were appropriately specified. For example, in a story about a cat, when the animal is introduced for the first time, it would be appropriate to say: "Yesterday I saw a cat," but not: "Yesterday I saw the cat." The latter would be correct only if the listener had prior knowledge of that particular cat. Thus one of the linguistic conventions concerning new elements is that they are generally introduced with the indefinite article (a or an), rather, than the definite article (the).

Menig-Peterson also considered whether young children specified referents in a way appropriate to the listener's state of prior knowledge. For example, pronouns (such as he, she or it) should only be used when it is clear that the listener has sufficient knowledge to identify the noun that the pronoun replaces. The sentence: "He came up and pushed him," is inappropriate unless the listener knows who "he" and "him" are refering to, as would happen when the listener has witnessed the event.

Menig-Peterson found that the speech that 3- and 4-year-old children produced, did vary with the listener's prior knowledge. Mean numbers of new elements were consistently greater if the listener was naive. The children seemed to talk more and to need less prompting when the experimenter was assumed to be naive as opposed to knowledgeable. Similarly, the children also tended to use the definite article more when the listener was knowledgeable.

This last study aptly illustrates the importance of interviewer knowledge on children's speech in interviews. If an interviewer is believed knowledgeable, then children are likely to say less than they would if the interviewer was uninformed. Thus although the use of a single experimenter to both present the experimental materials (by either showing a film or taking part in a staged event) and to ask the follow-up questions, may be a practical necessity for some researchers, it is not a desirable method for eyewitness research.

Studies in which the research interviewer witnessed the event under discussion, or demonstrates an inappropriate degree of advance knowledge of the event, would seem to be of limited value. Even asking a series of questions about an event implies advance knowledge on the part of the interviewer. Such methodological flaws will make a study take on bizarre overtones that are unlikely to be present in real-life interviews where the interviewers would be likely to know little, if anything of the event. When an adult asks questions to which they should already know the answers, then it is not unreasonable for the subjects to infer some bizarre motive for the question being asked. This will in turn affect the answers that they do eventually give. This point is discussed further later in this Chapter.

As an indication of the effect of interviewer knowledge on children's statements, it would be interesting to examine the recall transcripts of past studies, particularly those involving free recall descriptions, for indications that the adult and child are in fact indulging in a form of conversation, with a degree of joint knowledge, rather than a one-way transmission of information. For example, transcripts could be examined for

the use of linguistic forms suggesting shared referants, such as the definite article being used when 'new' items are being described. Alternatively, a study could be conducted in which children are interviewed either by a person who was or was not present during the time of the target event. Such enquiries would almost certainly serve to invalidate the findings of several studies (e.g., Dale et al., 1978), to eyewitness researchers at least.

3.4 Demand Characteristics

In recent years, a large number of experimental studies (e.g., Markman, 1977; Carey, 1978; Hughes and Grieve, 1980) have shown how children and adults will attempt to follow out an adults instructions, or answer questions, even when the requests are "bizarre", or even meaningless. In attempting to explain such behaviour, one should consider the demand characteristics implicit in experimental research (Orne, 1962). In any task or experimental situation, if a question or problem is posed, then the subject is expected to make some attempt to respond. Subjects are not allowed to reject the experimenter's 'advances' and non-participation is not normally permissable (e.g., Hughes and Grieve, 1980; Cohen and Harnick, 1980). However, even when subjects are allowed to demur and question their instructions, they often fail to do so.

For example, Markman (1977) showed how 6-year-old children would attempt to carry out an interviewer's instructions, concerning the teaching of card games and magic tricks, even though the instructions of how to play the game were plainly inadequate. The 6-year-old children attempted to

perform the tasks and even when prompted, they failed to request more information. Similar responses have also been illustrated by McGarrigle, Grieve and Hughes (1978) and Olson and Torrance (1983).

Here then, children interpret, what are to them, ambiguous or confusing instructions, into a form that makes sense, given the parameters of the situation. That is, children reinterpret the experimenter's instructions within the wider context of the whole interview situation. It would seem that once young children think they understand what it is they have to do, then they may attempt the task at hand. For example, Istomina (1975) reported that some of the children in the play section of her memorization experiment rushed off to the "shop", without waiting to hear the list of items they were being asked to collect.

The child's responses to requests are heavily dependent on the context in which testing takes place. That is, when requests are meaningless, or simply ambiguous, the child forces meaning upon them by relating them to the context in which they were asked. Questions are thus interpreted not solely on their linguistic structure, but in terms of what they 'probably' mean. For example, Carey (1978) asked children to give a puppet "more", "less", or "tiv", to drink. Carey suggested that the response bias in the study meant that children would tend to give the puppet more to drink, regardless of the instructions given to them. In the case of the "tiv" instruction, the children responded regardless of the language used in the instructions. Instead their responses are biased by the context of the test, namely that they should do something to the puppet's drink. Similar results were also obtained by Grieve and Stanley (1984).

In such studies it is the younger children who typically rely most on contextual information, such as non-verbal cues, rather than just the language used. However, there is some evidence to suggest that adults are also influenced by contextual cues. In the previous section it was reported that Winer et al. (1987) found adults just as likely to be misled by the implications of a question as children. Winer, Hemphill and Craig (1988) took such demonstrations one step further by having both children and adults take part in conservation-type experiments in which they were asked questions such as, "Do you weigh more when you are standing or crouching?". Winer et al. (1988) found that subjects, regardless of age, would reply with one of the options contained in the question. These findings were interpreted as evidence of the subjects willingness to acquiesce to the incorrect implication of the experimenter's question, thus making it a further demonstration of the effects of demand characteristics.

The study by Winer et al. (1988) throws some interesting light upon Varendonck's (1911) study, which incorporated two interesting demand characteristics not normally discussed. That is, in Varendonck's 'hat' experiment there are two possibly important confounding variables. As Varendonck reports, the removal of a hat is an important social practice. From this he reasoned that the failure to remove the hat would have been highly salient. Varendonck's question to the children was "In which hand was Monsieur B. holding his hat?" (Goodman, 1984b). The correct answer being neither. This question is an interesting parallel to those of Winer et al. (1988) in that the question implies the need to choose from one of two incorrect responses (right or left). The Winer studies showed that subjects of all ages are unlikely to breach the rules of the experimental

situation by saying that neither of the experimenters offered solutions are correct. Varendonck it seems, was demonstrating a characteristic not only apparent in children, but adults too.

The second confounding effect of Varendonck's study was the social acceptability of responses. That is, the removal of a hat was an important social practice. By directing the children's attention to this social blunder and then asking them to publicly expose it further, he may have placed a dilemma before the children. Perhaps the children were so keen to offer a response to the question (either "left" or "right") to avoid implying the adult had made a mistake. Clearly this is only a speculative point, but one that should be considered. The social desirability of responses reflects another potent source of demand characteristics.

It has been suggested (e.g., Dent and Stephenson, 1979a) that one of the reasons why children (and adults) do so badly in eyewitness studies may be this emphasis on giving some form of answer, regardless of their confidence in the accuracy of the response. Further, "Don't know" type responses are not normally encouraged (Warnick and Sanders, 1980).

Some researchers (e.g., Dale et al., 1978) have claimed that children are particularly unlikely to say "Don't know" when being questioned. The studies by Grieve and Stanley (1984), Carey (1978) and many others would seem to bear out this point. When questioned or given instructions, children seem quite willing to attempt some form of response, even though they may not understand the request.

Warnick and Sanders (1980) suggested that it is response expectancies, or demand characteristics that underly such behaviour, even in adults. To prove this point, Warnick and Sanders conducted an experimental identification task in which they had an explicit option for their adult subjects to say "Don't know". Such an option significantly decreased the number of false identifications made, with no cost to the proportion of correct identifications.

This finding goes some way to explaining the causes of suggestibility. In interviews, of almost any kind, it is rare to see subjects, of any age, being told that they do not have to give an answer to a question. In fact, in some studies such non-responses are actively discouraged. For example, in the Hughes and Grieve study, even though some of the children did say "I don't know" to some of the "bizarre" questions, this response was unacceptable to the researchers, so the question was repeated until the childen gave some form of concrete, or classifiable answer.

Moston (1987) attempted to reduce the response expectations, or the demand characteristics, of interview testing with children. Three groups of children, aged 6, 8 and 10 years of age, were questioned about a staged incident. Prior to these interviews, half of the children were told that they could say "Don't know" to any of the interviewer's questions. The remaining children received no such instructions, although if they gave "Don't know" responses they were accepted as valid responses.

Providing subjects with instructions in the acceptability of the "Don't know" response, increased the number of such responses given, although

unlike the Warnick and Sanders study, "Don't know" instructions had no effect on the amount of incorrect responses. However, it is worth noting that subjects from both groups were more likely to say "Don't know" to questions about events that hadn't occured (misleading questions), rather than to questions about events that were witnessed.

Despite the suggestion by Dale et al. (1978) that children rarely ever say "Don't know", even the control subjects were prepared to give such answers. Children's use of the "Don't know" response would thus seem to be at least partially dependent on whether or not the adult interrogator is prepared to allow such a response in their study.

Moston (1987) suggests that the use of "Don't know" type responses is also likely to be affected by differing test locations. Familiar environments may be more conducive to certain types of response, such as saying "Don't know", whilst unfamiliar locations may not. For example, in the Hughes and Grieve (1980) and Moston (1987) studies, the children were interviewed at school, where the children freely offered "Don't know" responses. However, a large number of studies with children are conducted in laboratory settings (e.g., Dale et al., 1978; Marin et al., 1979) and it may be that testing children in such environments somehow affects the type of responses they give. For example, it is possible that children only feel confident enough to offer "Don't know" responses in familiar, or supportive environments. Less familiar environments, where the child may be nervous, may increase the demand characteristics of an interview. The result being that children feel some obligation to provide a 'concrete' answer that will satisfy the interviewer.

Providing a "Don't know" option may thus prove to be of most importance in circumstances where the subject is likely to be feeling anxious (e.g., in laboratories). Telling subjects that they do not have to give an answer may reduce the amount of errors that result from guessing. This would, in turn, probably reduce the apparent suggestibility of subjects.

Alternatively, in experimental tasks at least, subjects should be allowed to state their degree of confidence in their answers, ranging from "guessing" through to "certainty", as is often done in memory studies with adult subjects (e.g., Stephenson, Brandstatter and Wagner, 1983). However, although this may be possible with adults, it may be more difficult to develop a practical method of asking children how confident they are in their answers. Given that children are unlikely to be given written questionaires with 'degree of confidence' options following each question, there is the problem of how to assess confidence orally. Asking children if they are sure about an answer, using almost any methodology, leads into the problems inherent in repeated questioning. Any request for confirmation, or even certainty, may be misinterpreted, as will be illustrated in the following section.

3.5 Repeated questioning

Related to the issue of demand characteristics is that of repeated questioning. The repetition of a question is typically done because the subject's initial answer is seen as somehow inadequate or unacceptable. This repetition may be interpreted as a signal to change a response or reconsider a decision (Neilson, Dockrell and McKechnie, 1983). This is

especially so when the repetition occurs after the speaker has just made changes in the materials presented to the child, as is the case in Piagetian conservation tasks. This point was most notably demonstrated in the study by Rose and Blank (1974).

Rose and Blank (1974) examined the effects of context on children's performance of a Piagetian conservation task, namely, the two sticks problem. Here, two identical sticks are placed side by side and the experimenter asks, "Are they the same length?", to which the child responds "Yes". The experimenter then moves one of the sticks, such that they are no longer parallel and repeats the question. Typically, most children under 7 would change their answer, and say that the sticks were different when asked the second question.

Rose and Blank offered an alternative explanation of this standard outcome by suggesting that children may change their answers because of contextual cues, thinking, "Why ask the same question if nothing has happened?". Rose and Blank found that asking the question only once, after the sticks had been moved, greatly reduced the number of children who thought the sticks were not the same.

Although there is now some doubt as to whether Rose and Blank's findings generalise to other Piagetian tests (e.g., Neilson et al., 1983), there is evidence from other research areas, such as tests of language comprehension (e.g., Wilcox and Palermo, 1982), to indicate the impact of repeated questioning on task performance.

For example, in the Hughes and Grieve (1978) study, when asked the question, "One day there were two flies crawling up a wall. Which one got to the top first?", 4 of the 8 five year-olds initially said "Don't know", but then gave some form of "bizarre" answer when the question was repeated.

The issue of repeated questioning within an eyewitness context was experimentally demonstrated by Moston (1987), who showed that repeated questioning weakened the accuracy of responses to questions about a witnessed event from children aged 6, 8 and 10-years of age. The mean percentage of correct responses given to first questioning was 68.9 per cent, for second questioning using identical or similar questions, it was was down to 53.8 per cent. Response accuracy was found to decrease for all three age groups, suggesting the possibility that such effects may extend further up the age range than has so far been considered.

Repeated questioning did not, however, significantly affect the mean percentage of incorrect responses given in the Moston (1987) study. This is probably attributable to each child's guessing at the answers. If a child is guessing the answer to a question, then he or she is probably just as likely to get it wrong the first time of asking as the second time. Thus incorrect responses are likely to remain consistently inaccurate, despite repetition.

These effects would seem to be dependent on the repeated questioning occuring within an interview session. The study by Dent and Stephenson (1979a) found that questioning carried out immediately after children (aged

10 and 11) had seen a film, and again the next day brought almost identical results.

Overall then, the studies of repeated questioning show that when an adult repeats a question that has elicited a response, children often take this as an indication that their first answer was wrong and that they should offer a new one. Repeated questioning is thus another important factor in explaining suggestibility. Moston (1987) suggests that it may be an especially significant one, since because of the prevailing belief in the unreliability of children's testimony, interviewers may be reluctant to accept a child's evidence, and may, therefore, repeat questions that have already obtained a response in the hope of checking that the child is not mistaken. This attempted clarification process may thus be serving to confuse the issue, not resolve it. It seems likely that when first questioned, children will try to give what they believe to be correct answers. However, if questioned again, they may mistake a request for confirmation as an indication that their first answer was wrong and, consequently, offer a new one, thus reinforcing the idea of excessive suggestibility in children.

3.6 The Linguistic Form of Questions

Eyewitness research has tended to be very selective in its areas of study and one of the few areas that has been regularly discussed is that of the effects of different linguistic forms on memory (e.g. Loftus and Palmer, 1974; Read et al., 1978; Kallio and Cutler, 1987). In particular, this debate has tended to centre on the effects of the definite and

indefinite article in questioning. This stems from a study by Loftus and Zanni (1975) in which adult subjects were asked about a filmed car crash. Loftus and Zanni varied the use of the definite article "the", and the indefinite article "a", to assess their relative effects on questioning. They found that subjects were more likely to admit to seeing non-existent events if questions were asked using the definite article, as in "Did you see *the*....?"

Loftus and Zanni suggested "the" was more suggestive than "a", because if a speaker has already seen an item, and assumes his listener is also familiar with it, then he will use the definite article "the". In contrast, questions which include the indefinite article "a" do not necessarily presuppose the existence of some object or event.

Dale et al. (1978) re-examined this topic using subjects who were aged under 5. These children were questioned about four short films they had seen. Dale et al. found that for items that had been present in the film, the type of article used in questions did not have any effect. However, for items that were not present, then the article "the" made subjects more likely to say "Yes" when asked if they had seen them.

However, some researchers have failed to find any effect of article change in questioning in children. For example, Moston (1985) found no differences between using "the" and "a" when questioning children aged 6, 8 and 10-years-of-age about a staged event which they had just witnessed. Similarly, Zanni and Offerman (1978) failed to find an effect of article change using adult subjects. Generally though, reviewers of eyewitness

testimony (e.g. Loftus, 1979a; Yarmey, 1979) recommend that questions using the indefinite article are more likely to obtain correct answers than questions using the definite article.

Although widely debated, the actual importance of this topic to an understanding of suggestibility in children is very much open to question. Using the definite article doesn't seem to have any effect in questions about items that were present during events (e.g., Dale et al., 1978) and for non-witnessed events the claims by Loftus and Zanni, and Dale et al., may be out of all proportion to the actual impact of this variable. The effects of article on questions with a false premise, although statistically significant, is fairly minimal in terms of absolute numbers. For example, Loftus and Zanni reported only an 8% increase (from 7 to 15%) in false "recognitions" for questions using the definite article as opposed to the indefinite.

It is suggested here that a possible reason for the contradictory findings on the effects of article may well be attributed to the interaction between linguistic form and the subject's perception of the person asking the question. That is, as discussed earlier, when the subject and interviewer were both present during the staged event or film, as seems to have occured in the study by Dale et al., then their shared knowledge of the event makes the use of the definite article take on a greater significance. Use of the definite article may be more suggestive by virtue of its apparently legitimate usage. However, when the subject believes that the interviewer has no knowledge of the target event, then their use of the definite article is inappropriate and thus not effective in biasing

responses. This would seem to be borne out by the fact that the study by Moston (1985) which failed to find an effect of article change, used interviewers who were not present when the staged event occured. It seems possible that the effects of interviewer knowledge and source credibility have an impact on a number of aspects of the recall interview, including an influence over the impact of linguistic form.

3.7 Conclusions

This Chapter has shown how an interview can be a potent source of confusion for both children and adults. When asking questions, interviewers should be aware that there are a number of contextual factors that can determine a person's responses. Suggestibility appears to be an ever-present danger in interviews, both in the lab and the field. Any question can become a leading question, depending upon the context in which it is asked.

The problems in the use of questions as a means of eliciting further information from a child witness leaves interviewers with something of a dilemma. They know that children can recall more than they do, but that using prompts only elicits testimony of highly questionable validity. What is needed is a way of enhancing testimony without introducing the dangers of suggestion described here.

In the following Chapter it will be argued that testimony can be enhanced by reducing the stress present at the time recall is elicited. The stressful nature of being interviewed is a factor that researchers have

generally failed to consider. Reducing stress in an interview might result in improved free recall, thereby reducing the need for prompts.

CHAPTER 4

The Recall Interview as a Source of Stress: Consequences and Recommendations for Procedural Changes

4.1 The Effects of Stress on Eyewitness Performance

Chapter 2 showed that children frequently know more about an event than they will spontaneously report (e.g., Kobasigawa, 1974). Attempts to access this 'hidden' information results in more information being obtained, but at the price of accuracy (e.g., Dent and Stephenson, 1979a). Chapter 3 showed how an interview is a potent source of confusion for children (and adults) which may explain why they appear so suggestible. In this Chapter it will be argued that the quality of children's testimony is further undermined by the way interviews are conducted. That is, children face problems in interviews that have until very recently been overlooked. The key issue here is the inherently stressful nature of being interviewed. Possible means of reducing this stressor will also be discussed.

In the eyewitness literature, stress is typically seen as a variable that exerts its primary influence at the time information is input into memory. This has sparked debates on whether arousal can be either beneficial or detrimental to recall (e.g., Kuehn, 1974; Deffenbacher, 1983; Hosch, Leippe, Marchioni and Cooper, 1984; Loftus, Loftus and Messo, 1987). The differential effects of stress have been explained in terms of the Yerkes-Dodson (1908; cited by Eysenck, 1982) study concerning arousal and performance. This basically presumes that strong motivational states such as stress or other emotional arousal facilitate learning and performance up to a point, after which there is a decrement. This fits in with Easterbrook's (1959) theory that increased arousal brings about a restriction of the range of cues that a subject utilizes in performing a task. The location of the point at which performance begins to decline is

determined by the difficulty of the task (Deffenbacher, 1983). Modest increases in arousal are seen as enhancing testimony, but higher arousal levels stemming from crimes of violence, are almost invariably going to be greater than the Yerkes-Dodson optimum. However, this "law" is a purely post-hoc explanation of findings (Elliott, 1985) and appears to have almost no predictive power. It does not explain why some witnesses to extremely traumatic events have excellent recall (e.g., Pynoos and Eth, 1984), whilst others remember very little (e.g., Kuehn, 1974).

Experimental evidence of the relationship between stress and recall has been noteably unconvincing. Given the ethical constraints on "stressing" experimental subjects, studies have tended to be methodologically weak (McCloskey and Egeth, 1983), since subjects are never really stressed. Consequently, some reports have looked at actual cases of assault on witnesses and tried to define levels of stress. Typically, stress levels in such cases are uniformly high, however, some claims have still been made. For example, Kuehn (1974) found that crime victims who had been physically attacked, though not seriously injured, tended to have particularly poor levels of recall.

Studies on the effects of stress and memory in children are a very recent development in eyewitness research and the existing reports tend to emphasise potential methodologies rather than detailing experimental findings (e.g., Peters, 1987). In the study by Goodman, Hepps and Reed (1986; cited by Goodman, Aman and Hirschman, 1987) children aged 3 to 7 went into medical clinics. One group of children received an injection, the others did not. Recall of the event was tested by free recall and

suggestive questioning. On no measures were there any differences between the groups. However, parental ratings of the stress experienced by each group were remarkably close showing that all of the children in the study were stressed.

In an even more applied study, Pynoos and Eth (1984) worked with children who had witnessed one of the most stressful events possible, namely the murder of one (or more) of their parents. Pynoos and Eth found that children's recall of the murder was highly detailed. Young children were seen as being extremely attentive to significant, affectively charged details such as verbal exchanges between the assailant, the victim and themselves. Such exchanges were vividly recalled, not easily forgotten, and often labelled the "worst moment".

The studies cited so far have emphasised the importance of stress at the time information enters into memory. However, examinations of stress as a variable at the retrieval phase of memory are far less common. In fact, recall at the time of output is sometimes dismissed as a confounding variable. For example, Hosch and Cooper (1982) looked at the effects of being a victim or a witness on memory. They found no differences in recognition memory for the theft of an adult subject's own watch (presumed high stress), or a stranger's calculator (presumed lower stress). They explained that this lack of effect may have been influenced by the fact that prior to recall the subject's were informed that the incidents were staged, thereby reducing stress at the time of recall. When the study was repeated (Hosch, Leippe, Marchioni and Cooper, 1984) adult subjects were not told the event was staged. The interviewer (a campus police officer)

maintained the pretence that it had been real. Here, there were some effects of victimization. When victim subjects were put under pressure to make an identification, their performance declined relative to the bystander group. Here then, stress at the time of input combined with stress at output weakens performance. In this case, stress at input alone appeared to have no marked effects.

It is argued here that the stress present at the time of output can be a major factor in determining the quality of an eyewitness account. This point was demonstrated by Dent (1977) who found that children are adversely affected by the stress in making identifications from live lineups, in contrast to identifications made from coloured slides. Although the absolute percentages of correct identifications were relatively low, significantly better performance was found with identifications made from slides (29% accuracy), compared to only 12% accuracy in live identifications.

Dent also described differences in the overt behaviours between children in the two conditions. Children performing in the live situation appeared nervous, embarrassed, and frightened. In fact, two of the children refused to participate, whilst others expressed a fear of possible repercussions in the live condition. However, none of the children in the slide condition appeared frightened, nervous, or wished to leave before carefully examining all of the slides. Dent suggests that the stress inherent in the live situation clearly unduly influenced the recognition memory of these children and their willingness to participate as witnesses.

In a similar study by Dent and Stephenson (1979b) using adult subjects, the differences between subjects in each condition was not statistically significant. However, Dent and Stephenson (1979b) also failed to find any effect of experimental group in children. The discrepancy with Dent's (1977) study was explained in terms of reduced anxiety for the children because the actor had been introduced to them by their teacher, thereby making the manipulations designed to reduce anxiety redundant.

It is interesting to note that the recent identification study involving adults by Cutler, Fisher and Chicvara (1988) showed that adults witnesses to a staged theft could make equally reliable judgements by using either a live or a videotaped lineup.

Overall then, it appears children are affected more than adults by the stress of making an identification. However, the detrimental effects of stress on children are not confined to identification parades. Stress can also influence children's performance in recall interviews. It is not clear how stress inhibits recall. It may be that because of stress subjects only provide brief accounts so that they can escape the stressor, namely, the interview. Alternatively, it may block access to mnemonic cues thereby restricting the amount of information subjects can remember at that time. Whatever the cause, the effects of stress are clearly apparent.

It has often been reported (e.g., Berliner and Barbieri, 1984; Hedderman, 1987) that courtroom interviews can be a particularly traumatic experience for young children. Parker (1982) pointed out that,

> "It is perhaps one of the most tragic ironies of modern court procedure that renders the court both the child protector of last resort and one of the most serious perpetrators of child abuse. The child witness often faces victimization in the courtroom." (p. 643)

Parker (1982) argues that the legal system in the USA promotes secondary trauma in children who testify in courts. This is not solely a problem for those alleging sexual abuse, even non-violent civil cases like divorce may pose a psychological risk for a child witness.

Secondary trauma occurs when the conditions in which recall of an event is obtained are so stressful as to be disturbing for the child. For example, Terr (1981) in his report on the psychic trauma suffered by children who had been victims of the Chowchilla school-bus kidnapping in 1976, reported the case of the 10-year-old girl, Terrie. Terrie's immediate post-traumatic symptamology was amongst the lowest of all the children. However, 16 months later when Terrie was asked to testify in court, she became extremely upset while testifying. Terr explained this reaction as being caused by the stress of having to relive the original trauma. However, it is often reported (e.g., Forward and Buck, 1981) that aggressive cross-examination on seemingly minor details of a case can also be very distressing for children.

An important thing to be aware of in understanding the effects of interviews on stress is that problems occur across a wide range of situations. Factors such as reliving a traumatic event, the intimidating physical environment of the interview (e.g., a courtroom), or the appearance of the interviewer (e.g., wearing a uniform) may each be

important, either independently or cumulatively in influencing stress. But one must realise that even in the absence of all these variables, interviews can still be stressful.

The laboratory based study by Marin et al. (1979), would seem to bear out this point. Marin et al. reported that some of the children in their study were so upset that they were unable to participate. Similarly, Goodman and Reed (1986) report that one three year old in their study refused to participate in the memory test unless accompanied by a parent. In a footnote, Goodman and Reed state that the parent was allowed to stay in the room under the condition that she should not in any way indicate an answer to the child. It is not unreasonable to conclude that even some of the children who remained in these supposedly 'unemotional' studies, may also have been distressed to some extent.

It rare to see researchers even mentioning that children may have been upset by any part of a study. This may occur because of two reasons. First, most researchers are unlikely to even notice that children are upset, unless they start crying. Once this occurs then it is virtually impossible to gain that child's co-operation, at least not without considerable effort. The second reason why researchers rarely mention causing distress, is probably because to admit doing so would be seen as a sign of failure in managing to deal with their subjects, thereby implying some flaw in the experimental design. This is something that few researchers will readily admit to.

Future studies of stress and memory should use more elaborate designs than so far employed. Stress during an event and stress during an interview need to be seen as separate, though possibly interacting variables. This idea is already common knowledge amongst many interviewers. For example, some police forces now have special procedures for dealing with rape victims that include interviewing the person in a specially designed house, which is believed to be less threatening than taking the victim to a police station. This ties in with Dent's (1977) findings that children can make good eyewitnesses on more occasions than they appear to, provided the conditions at the time of output are favourable. Other examples of performance benefits arising from changes in the social environment at the time of testing are given later (e.g., Sarason and Sarason, 1986).

The fact that the interview environment can affect task performance is not a new topic within psychology, but its recognition represents a relative innovation within psycho-legal debates. Its importance stems from the fact that it seems highly likely that young children do know more than they will spontaneously report. In eyewitness contexts, relative to adults, children rarely perform well. Such performance discrepancies can only partially be explained by differences in memory. The question that remains is how to elicit the maximum amount of information, without reducing the validity of the account.

4.2 Innovations in Interviews of Child Witnesses

The most widely discussed way of reducing stress in interviews with child witnesses is the potential use of video recordings and live video

links (e.g., Spencer, 1987a; Murray, 1988). These reforms emphasise the need to reduce stress in the courtroom. This follows from the all too regular occurence of children providing detailed testimony to police interviewers but then failing to give their evidence in court. That is, the children initially recalled enough information to encourage the police to bring a prosecution, but then failed to recall this material in court. Even though the gap between the first interview and an appearance in court can be quite long, only in exceptional cases can this be attributed to the child forgetting what happened. Normally, after the trial the child will still be able to recall the witnessed event in detail, which fits in with experimental studies of long-term memory which suggest that information can be retained over long periods of time with only a slight decline.

For example, Fivush, Hudson and Nelson (1984) found no difference in recall of five-year-old children's class trip to a museum when tested immediately afterwards and again six weeks later. Even a year later, recall was still high but with some decline. On a grander scale, Sheingold and Tenney (1982) showed how a salient event at four years of age, namely the birth of a sibling, could be accurately recalled by subjects even after 16 years.

The use of video recordings, made at the pre-trial stage, as evidence, has been called for on several occasions, most recently by the The Police Federation, but this actually does little to alleviate stress during interviews. Video recordings would simply prevent the child from having to unnecessarily repeat their accounts, the stress of the first interview still remains. It should be noted here that in cases of sexual abuse, it is

unusual for children to disclose a great deal of information in a first interview. It is usually necessary for the interviewer to build up a degree of empathy with the child before obtaining an account of the abuse, which may take some considerable time (Faller, 1988). Video recording would only serve to reduce stress arising from unnecessary interviewing after the child had made a statement.

The use of video links is designed to reduce stress at the time of a trial (Hedderman, 1987). It is generally acknowledged that courtrooms are intimidating places for young children. The clothes of the officials, the size of the room, the presence of an audience as well as the accuser and the hostile tactics of defence lawyers can all serve to increase the child's discomfort (Scottish Law Commission, 1988). The use of live video links would allow the child to be cross-examined by a court appointed interviewer in a room away from the courtroom, by an interviewer in plain clothes. Questions would be passed to the interviewer through an ear piece. The child's responses would then be seen in the courtroom. At this time, as a half-way point between video links and normal courtroom practices, screens may be placed around a child in court so that they cannot see the accused.

Evidence to support these innovations with regard to free recall of information is very scant, being derived largely from anecdotal sources. For example, a recent court case saw the conviction of three men for sexual abuse of five children, aged between 7 and 13 (Daily Mail, 3.11.87; p.5). The success of the prosecution was largely attributed to the fact that the children were allowed to give their courtroom statements from behind a

screen. However, despite the screen, two of the children broke down in tears while testifying, being comforted by a social worker who waited with them (Daily Telegraph, 21.10.87; p.3).

It is difficult to experimentally prove the value of such innovations, since variations in cases, particularly the personality of the witness and the severity of the offence, as well as ethical and legal problems, make comparisons between cases virtually impossible. Nevertheless, legal reforms are being introduced on the strength of these anecdotal examples which have a high degree of apparent validity.

Although such innovations are almost certainly of considerable value in ensuring that children are able to testify, they ignore the far greater problem of how to interview children outside of the courtroom. Suprisingly few recommendations are ever made as to ways of enhancing testimony at the pre-trial stages. This is a serious oversight since the initial collection of data largely determines whether or not a prosecution is to be brought. Further, the majority of cases involving children are dropped before they ever get to court (Parker, 1982), making courtroom reforms of benefit to only a handful of children. There is also the additional problem that legal reforms are needed to allow video links to be used, although this is gradually being achieved (Davies, 1988b).

What is clearly missing from the discussions of reducing stress is a procedure that can be implemented at any stage of an investigation. In order to see what innovations might be of benefit, the starting point for

analysis should be at the very beginning of the child's involvement with the legal process and not with the final stage, namely the courtroom.

The child's first interview as a witness, depending on the nature of the witnessed event, is probably with either a police officer, a social worker or clinical psychologist. As soon as any of these professions have identified a child as a witness their first act prior to starting an interview is to isolate the child. The child may already be in a state of stress following witnessing an incident such as a murder, or the child may be stressed by the events following the discovery of the event. For example, the arrest of a parent in a case of sexual abuse.

According to Pynoos and Eth (1984) the isolation of the child from significant others is yet another source of stress. For example, in cases of witnessed attacks on the child's parents, the child may be abruptly separated from the dead or dying parent and left to wonder what happened to the body. Further, in parent-parent homicide, the police will deny contact between the child witness and the parent suspect.

To complicate matters even more, the child may also be kept from other family supports as well since the police are instructed to keep witnesses apart to prevent discussion between them. Pynoos and Eth (p.97) report that "Children complain bitterly of being placed in different rooms from their brothers and sisters. Such separation may not only be continued at the police station, but perpetuated if siblings later receive different guardianship or foster care placements."

The police usually discourage the active participation of a guardian, advocate, or trusted adult during the interrogations for fear of the child's account becoming distorted through discussion, or threats.

Pynoos and Eth go on to say that the goal of the police is to obtain an immediate description of the event and a positive identification of the suspect. However, when confronted with an immobilized preschool child, most police officers are unsure of how to proceed. Consequently, in frustration, they often tend to ignore the young witness, despite the child's potential value.

The one consistent theme in all of the interviews described so far has been the isolation of the child from their family and friends, leaving them alone in the presence of an adult stranger. This methodology is virtually a compulsory part of experimental and applied work with children. Children are normally isolated because of fears of their evidence becoming 'contaminated' by contact with others. Quite why this 'policy' has developed is hard to determine. In the case of police interrogations it may stem from sexual abuse cases in which the child makes allegations against one relative but later retracts it because of pressures from other relatives. However, the general insistence on isolating the child pervades all situations, even when the people around the child could have no possible motive for silencing the child.

More probably, the source of this attitude can be put down to a general lack of faith in the ability of children as witnesses. There is the fear that children are so suggestible that their evidence will be ruined if they

should either discuss an incident with anyone, or been seen to be coached or prompted in any way when giving an answer. Consequently, by isolating the child any later accusations of suggestion can be dismissed.

However, it seems highly likely that the practice of isolating the child actually causes more problems than it solves. Perhaps it is the isolation of the child that is the initial cause of stress in an interview. Other factors, such as the location of the interview, only compound this problem. The general neglect of this issue in the literature probably comes from interviewers failing to realise that situations that seem unthreatening to them can take on very different overtones for young children.

What then can be done to eliminate this additional source of stress? The immediate answer seems obvious: Don't isolate the child, allow them to stay with someone they trust. In fact, just such a proposal was made by Porter (1984) who suggested that the presence of another person would provide some degree of social support for the child who might otherwise feel isolated and afraid.

Although others such as Murray (1988) also recommended the use of social support in interviews, interest in social support for child witnesses has been minimal, being confined solely to sporadic claims that it might be important (e.g., Benedek and Schetky, 1986). However, interest from significant sources is increasing, for example, in a recent Discussion Paper from the Scottish Law Commission (1988) the following proposal was made.

> "...a judge should permit a child to have a relative or other support person seated alongside him while that child is giving evidence unless for some good reason the judge directs otherwise. The judge should, however, direct that relative or other person that he must not coach or assist the child in any way during the giving of his evidence." (p.70)

The Discussion Paper suggested the support person would probably increase the child's confidence but that judges should have some discretion since when a child is older, such a practice may be inappropriate, or even embarrassing for the child. The proposal quoted above is also intended to force some legal clarification concerning whether or not such procedures are currently permissible.

Social support is permitted in Australia. The Children's Interests Bureau (1988) in Australia report on recent legal reforms on evidence in that country. They summarise the law thus:

> "Children are entitled to have a person present in Court whilst they give evidence, to provide emotional support. This support person may be within "reasonable proximity" but must not interfere in the proceedings. Another potential witness in the trial cannot ordinairily be the support person." (Children's Interests Bureau, 1988; p.1)

One difference between the Scottish and Australian positions is that the Scottish Law Commission propose that the support person could act as a witness, provided they gave their evidence before the child and that the child was not present at the time.

No details are ever given to support these recommendations apart from isolated examples or intuitive reasoning. In the remaining parts of this Chapter, the relevance of social support to eyewitness interviews will be

explained more fully, as will the possible benefits arising from the provision of social support, as well as the drawbacks that have hitherto sucessfully discouraged research on this issue.

4.3 The Need For Social Support

One of the key premises underlying the provision of social support is that in stressful situations people prefer to be with other people. This motivational factor was described by Schachter (1959) in his book "The Psychology of Affiliation". For example, in one study by Schachter, female subjects were told that they were to be given either painful or mild electric shocks. They were then asked if they would prefer to wait alone, or with other people. Subjects expressed the strengths of their desires on questionnaires.

The subjects in the high anxiety group (painful shock) showed a clear preference to wait with someone. The low anxiety subjects (mild shock) were less likely to care one way or the other. Schachter took this as evidence that anxiety increases the affiliative tendency. Schachter's subsequent studies found that this affiliative desire was independent of the opportunity to communicate, for it persisted in a variety of conditions ranging from completely free communication to absolutely no verbal communication.

Schachter also presented results concerning which people expressed the greatest desire to be with others. His studies illustrated the importance of birth order in determining who expressed the greatest need for

affiliation. It was found that adults who had been first born or only children were more likely to desire the company of others than later-born children. This raises the wider question of who needs social support? Here, some evidence to suggest that child witnesses widely report a desire to be with others is presented.

The provision of social support in the context of eyewitness research is very rarely discussed, seemingly because of the assumption that the presence of a third party, undermines the reliability of the interview. This suggestion was most recently echoed in the final report on the Bexley project (Metropolitan Police and Bexley Social Services, 1987). In a series of recommendations concerning effective interview techniques, it was suggested that interviewers should "Reduce as far as possible the number of people in the room, but this must be balanced with the needs of each child and the wishes of the parent." (p.49).

The Report recommends that by not having a 'third party' present, the danger of alleged suggestion is removed. It is also suggested that in some cases a parent may inhibit a child, in which case they should be asked to wait outside. In the Bexley project the use of video recordings meant that parents would still have the opportunity to see and hear their children giving their statements at a later time. Unfortunately, no evidence concerning the dangers of suggestibility resulting from the presence of third parties was included in the Report.

In the official evaluation of the Bexley project, Charnley (1987) shows the number of cases in which third parties were actually present during

interviews (Table 3; p.81). Charnley was only able to carry out an evaluation of 33 cases, slightly less than half of the total number included in the Project. Of these, 28 interviews were carried out by both a police officer and a social worker, the remaining 5 being conducted by a single police officer.

Charnley (1987) Other People Present at Interviews with Children:

The Bexley Project

Present at Interview	n
Mothers	18
Both parents	3
Sister	1
Teacher	1
Warden	1
Woman police officer	1
None other	8
Total	33

Of the 33 cases then, 25 interviews were carried out with a 'third party' present. However, it should be noted that the 'woman police officer' category may refer to one case where a child insisted on being interviewed by a single woman police officer. It is not clear from the report whether this officer actually interviewed the child, or whether she acted as a third party, as is clear from the remaining 24 cases.

Consequently, despite the fact that Charnley only had access to selected cases, it is clear that the recommendation in the Bexley Report to avoid the presence of third parties was not strictly implemented. Presumably, in the 24 cases in which a third party clearly was present, this was determined by the needs of the child. It is apparent then that children do 'need' someone with them during interviews. Typically this

person will be the child's mother, however, other people may be used. It is interesting to note that in one case the child was accompanied by his/her sister. Unfortunately, the ages of the children were not included in the report (to ensure confidentiality), so it is not possible to determine whether or not the sister was much older than the child witness.

The potential value of social support has also recently been discussed in relation to courtroom testimony in the USA. In a preliminary report, Goodman, Jones, Pyle, Prado-Estrada, Port, England, Mason and Rudy (1988) discuss the emotional effects of giving courtroom testimony on child victims of sexual abuse. Despite some obvious shortcomings in the report, particularly with regard to the methodology involved during data collection which is only briefly described, it seems clear that many of the children expressed positive attitudes about the possibility of being accompanied into the courtroom by a non-offending parent.

For example, one measure of pre-court anxiety was the "faces" test, where children pick the 'face' that most appropriately expressed their mood (ranging from very happy to very unhappy) concerning future possible scenarios. The table below, adapted from Table 2 in Goodman et al. (1988; p.51) shows the number of children who selected each face type in response to questions about their attitudes towards having their parents with them during their courtroom appearances. The majority of children responded that having the mother, or even the father present made them feel "Very happy".

Goodman et al. (1988) Children's Attitudes Towards Being Accompanied into Court by Either Parent: The "Faces" Test.

	Number of Children Selecting Each 'Face'			
	Very Happy	Happy	Unhappy	Very Unhappy
Mother Present	19	5	3	4
Father Present	11	1	4	0

Similarly, children's verbal responses to the same question (coded as positive, ambiguous/neutral and negative) also showed a marked trend towards favouring the presence of the parents.

The findings of Charnley (1987) and Goodman et al. (1988) appear to mirror the findings of Schachter (1959) by suggesting that in stressful situations people express a desire to be with others. However, not all children share this view. Goodman et al. (1988) showed there were some cases of children saying the presence of a parent would make them "unhappy" or "very unhappy". One might reason that such cases reflect circumstances in which the child knows their parent does not approve of them giving testimony, rather than a genuine resistance to the very idea of social support. In most cases the desire for social support is uniformly strong.

To understand why social support is desired and how it works, the following sections describe some of the benefits and drawbacks of social support. This will illustrate that social support can be provided in a number of different ways and its influence is dependent on factors such as the personality of the person being given support, the source of support and the nature of the interaction between these people.

4.4 The Beneficial and Detrimental Effects of Social Support on Task Performance

Although Charnley (1987) shows that the children in the Bexley project clearly made use of social support resources during their interviews, there is suprisingly little experimental evidence ever cited to directly support or refute such procedures. In this section, the evidence for and against the provision of social support will be discussed.

The evidence to be presented here draws heavily on the adult literature on social support since studies involving children are quite rare (Berndt and Perry, 1986). One question that will be returned to in detail later (Section 4.5) concerns the identity of the person providing support. As will be shown, the answer to this question is not so straight forward as most suggest. However, it is worthwhile to point out here that the most commonly asserted source of support is *similar others*. For example, Schachter (1959) claimed that the affiliative tendency is highly directional in that anxious subjects only want to be with those in a similar plight. Schachter offered subjects the choice of either waiting with some other girls taking part in the same study, or, in the other condition, they could wait with a group of girls waiting to talk to their professors and advisors. In the "same state" group, 6 subjects wanted to wait with the other participants. 4 didn't care one way or the other. In the "different state" condition, all 10 subjects said they didn't care where they waited. The strengths of desire in each group were clearly different. This was interpreted as evidence that people generally want to

wait with similar others, but are not motivated to wait with different others.

Similarly, Thoits (1986) argues that it is not possible for just any significant other to supply effective coping assistance. Instead, effective support is most likely to come from socially similar others who have faced or are facing the same stressors, and who have done so or are doing so more calmly than the distressed individual. Sociocultural and situational similarity will enhance the likelihood of the perception and reception of "empathic understanding", the condition under which coping assistance should be most effective. That is, the individual must know that the person providing support understands their situation.

Recipients may see attempted assistance from dissimilar others as controlling and demanding, rather than as helpful (Coates and Wortman, 1980). According to Thoits this may be because the recipient sees such interventions as motivated more by the helper's needs than by his or her own needs. There is a fine line between perceiving coercive control and perceiving assistance which depends on the factor of empathic understanding. This factor may explain why the same words and deeds from helpers can be seen as either comforting or upsetting (e.g., Hobfoll and London, 1986). This point will be returned to later.

Only a handful of experimental studies have shown how the quality of a child's task performance is sensitive to the social relationship that exists when it is elicited. For example, Labov (1969) argued that the poor performance of black children in interviews may be due to suspicion and

hostility elicited by the interview situation, and in particular, by the interviewer, who is likely to be a white middle-class psychologist.

Labov found that the speech of black children from urban ghettos was influenced by the social situation of the interview. For example, Labov describes a series of interviews with an 8-year-old boy called Leon. Initially, Leon was interviewed alone and the interviewer had difficulty in getting him to talk. In a subsequent interview some changes were made, the adult interviewer brought along a supply of potato chips, reduced the height imbalance by sitting on the floor with Leon, allowed 'taboo' words to be spoken, and brought along Leon's best friend, 8-year-old Gregory.

These changes made a striking difference, for the better, in the volume and style of Leon's speech. Labov reported that the monosyllabic speaker who had nothing to say about anything and could not remember what he did yesterday had disappeared. In his place there were two boys, who each had so much to say that they kept interupting each other.

A more interesting line of research on social support and stress comes from the dental and medical literature in which children are faced by stressful situations such as those now advocated by researchers such as Peters (1987) and Goodman, Aman and Hirschman (1987). For example, in a study of children's long-term behavioural adjustment following time spent in a hospital, Vernon, Foley and Schulman (1967) found that maternal presence had a calming effect on children's (aged 2-6) distress during anesthesia induction but made little difference during a non-stressful procedure such as admission to the hospital.

The majority of the other studies on the value of experimentally provided social support come from the adult literature (e.g., deAraujo, Van Arsdel, Holmes and Dudley, 1973; Winstead and Derlega, 1985; Costanza, Derlega and Winstead, 1988) and in particular, the work of Sarason (e.g., Sarason, 1981; Lindner, Sarason and Sarason, 1986; Sarason and Sarason, 1986).

Sarason's work has centred on the experimental provision of social support across various problem-solving tasks. A key issue running through his work is that there are different types of people who actually benefit from such support. For example, Lindner, Sarason and Sarason (1986) looked at the interaction between environmental characteristics and personal perceptions of support, as calculated by the Social Support Questionnaire (SSQ). Social support was defined as an experimenter's offer of assistance (if it was needed) to students (classed as high or low in social support resources) who were about to work on a story completion task. The experimenter told the subjects that she would be available to help them throughout their work, for example, to answer any questions that might come up. This statement followed the reassurance that many people felt uneasy about writing stories, so the subjects should not worry if they felt this way.

Although no subject requested help, those subjects who had low scores on the SSQ performed significantly better than a comparable group who did not receive these instructions. Their performance was within the same range as that of high SSQ subjects. The administered support did not raise the performance of the high SSQ subjects, in comparison with that of an

untreated control group. Thus the interactive effect of the administered support was clear: Administered support was helpful only to the group whose self-evaluated support was low.

Sarason and Sarason (1986) had similar findings using an anagram solving task. As in the Lindner et al. study, the experimenter offered assistance if it was required. Further, after the task the subjects completed a questionnaire on their thoughts during the task via the Cognitive Interference Questionnaire (CIQ). The table below (n = 20 per cell) is adapted from Table 1 of Sarason and Sarason (1986; p.1224). SSQN is the measure (from the SSQ) of the number of available others to whom individuals believe they can turn in time of need.

Sarason and Sarason (1986) Mean Number of Correct Anagram Solutions as a Function of Assessed and Provided Social Support.

	Assessed Support	
Condition	High SSQN	Low SSQN
Support Provided	5.15	5.50
Control	4.61	2.95

This table clearly illustrates the interaction between low levels of social support and the experimental manipulation. The differences in scores for the high SSQN subjects were not significantly different. As with Lindner et al., the results here showed a clear effect of the provision of social support in the low SSQN subjects relative to the control subjects.

The low SSQN subjects in the control group with no support reported higher levels of cognitive interference than the other groups, particularly the low SSQN subjects receiving support. Higher cognitive interference may result from higher levels of perceived stress. Subjects may feel under greater stress and thus worry more or attempt to distract themselves with off-task thoughts (Sarason and Sarason, 1986).

Sarason and Sarason (1986) suggest that with an increase in self-confidence, low SSQN subjects may be able to focus their attention more completely on the task at hand rather than on self-preoccupying thoughts, such as worry over their ability to accomplish assigned tasks.

Further evidence for the value of social support, in yet another context, comes from deAraujo, Van Arsdel, Holmes and Dudley (1973) who found that adult asthmatics classed as high in life stress, with low levels of social support, needed higher daily drug doses than other patients, namely all those with high social support, as well as those with low stress and low social support.

Overall then, these results suggest that for people who report relatively low levels of social support, specially provided supportive manipulations may have a facilitative effect on cognitive tasks as well as in other situations. However, the supportive manipulation does not seem to be facilitative for those who are high in perceived support (Sarason and Sarason, 1986).

In the examples cited so far, social support has typically been derived in situations in which there was no direct intervention on the part of the person providing support, but their presence combined with their potential for helping, appears to have been beneficial. The effects of any interactions between people and the derivation of support have also been studied.

Winstead and Derlega (1985) and Costanza, Derlega and Winstead (1988) further delineate exactly why the provision of social support may have differing effects. Previous studies had shown how the impact of stressful events had been associated with support. Fleming, Baum, Gisriel and Gatchel (1982) had found that people living near the Three Mile Island nuclear power station during the 1979 accident who had social support (e.g., having a close friend to talk about things) had fewer psychological and behavioural symptoms of stress than did those without support. Similarly, Sarason (1981) showed how different forms of social support can influence task performance. In an anagram solving task peer social support was provided from two confederates. That is, prior to testing, groups of subjects discussed the stresses involved in tests. The confederates emphasized how much talking about the issue made them feel better about the forthcoming task. Subjects then individually completed the task. As with Sarason's other studies, the provision of social support resulted in improved task performance.

Winstead and Derlega (1985) assessed the beneficial effects of such interactions with a friend in a stressful situation. Adult subjects were placed in a stressful situation (where they expected to handle a non-

poisonous snake) with either a same-sex friend or a stranger. Subjects were left alone with their partner for a 4-minute period while the experimenter supposedly checked equipment. Based on several mood rating measures which asked how subjects felt right now, depression and hostility scores were significantly reduced after being with a friend but not after being with a stranger. However, in no condition did the fear of snakes change.

Costanza et al. (1988) sought to explain why the interaction with a friend for such a short time was beneficial. In particular they looked at the effectiveness of three different conversation topics on coping with stress among friends. The conversation categories included:

1. Disclosure of feelings. Talking about one's feelings, such as fears and anxieties with a friend is often considered to be a way of coping. However, expressing one's feelings may aggravate one's negative mood state by focussing attention on negative feelings.

2. Problem-solving talk. Friends may provide social support by asking and answering questions such as "What can be done about the situation?" Talking about the problem may provide a sense of control and confidence. Therefore, talking that involves instrumental or problem-solving discussion could reduce negative affect if it suggests a way to deal with the stressor.

3. Unrelated talk. Talking with a friend about matters unrelated to the stressful event represents another possible way of coping. Such discussions

may result in reduced negative affect because the person is distracted from thinking about the stressor.

In the Costanza et al. (1988) study the stressful event involved the anticipation of guiding a tarantula through a maze. Prior to the task adult subjects completed questionnaires that assessed their current mood and fear of the spider. They were then placed into a control group (alone), or in one of three experimental groups, based on the three conversation categories outlined above. These interaction sessions each lasted for three minutes. Mood measures were then retested prior to actual contact with the spider. A behavioural measure, namely how close the subjects got to the spider during the task was also taken.

Broadly, the study found it is probably inappropriate to consider social support as a unidimensional concept. Interaction with friends may help or hinder how well one copes with stress depending on the type of contact that occurs. The results showed that talking about one's feelings with a friend in anticipation of a stressful event (conversation category 1) is less beneficial than talking with a friend about problem-solving (category 2) or unrelated content (category 3). The subject's in the problem-solving condition had the lowest scores on all three negative mood measures (i.e., anxiety, depression and hostility). This may be because problem-solving talk may increase a subject's confidence or competence in coping with the anticipated stressful stimulus, whereas unrelated talk may provide a distraction from the stressor. This was also reflected in the behavioural measure. That is, the percentages of subjects who got as close

to the spider as was physically possible were as follows: problem-solving (64%); unrelated talk (71%); disclosure of feelings (35%); and alone (39%).

The findings concerning the discussion of feelings appear to contradict those of Sarason (1981). This may be because Sarason's subjects discussed feelings in a positive way, emphasising how beneficial they believed it to be. In Costanza et al. there was no attempt to convey any value in such discussions. There are also other important differences in the studies such as differing stress levels. Encountering a tarantula is probably far more stressful to most people than completing a series of anagrams.

There is also some research which indicates that social support provided by talking with friends and neighbours can be associated with greater psychological distress. For example, Hobfoll and London (1986) found that Israeli women whose boyfriends or husbands were involved in the 1982 Israel-Lebanon conflict, experienced greater psychological distress (anxiety and depression) if they had someone to talk with. Hobfoll and London suggested that interacting frequently with friends and neighbours who were also undergoing the same difficulty (for instance, having a male relative in combat) may have produced a "pressure-cooker" effect. Talking with other member's of one's social support group may have helped spread rumours and led to exaggerated accounts of what was actually happening in the war which, in turn increased psychological distress.

The Hobfoll and London study appears to contradict the arguments of both Schachter (1959), who argued that subjects wanted to be with others in a similar situation, and with the claim of Thoits (1986) that effective

social support would be most likely to come from socially similar others who are facing the same stressors. Although Thoits did suggest that the person providing support should be seen to be coping more calmly than the distressed individual, the implication of the Hobfoll and London study is that social support from people under equal stress, leads to even greater anxieties in each person.

There is some support for this idea from observations of children's behaviours whilst undergoing treatment at either the dentists or in hospital which highlights a possible danger of parental social support. Gross, Stern, Levin, Dale and Wojniower (1967) found that parental presence in the doctor's treatment room during an injection led to more intense and longer lasting crying in children than when the parent was not present. Children with mothers present often cried immediately prior to the initiation of the blood test. This behaviour has been interpreted as a form of protest, since the children probably believed that the parent would give comforting responses at the signal of distress.

The reasons why parental presence can increase the child's distress were more carefully analysed by Melamed and Siegel (1984) who looked at the different reactions of parents during medical procedures at hospitals. They categorised parental behaviours and found that the children of mothers who talked to them, telling them what to expect, showed lower levels of observed stress than those whose mothers showed signs of agitation themselves. Agitation on the part of parents showed a strong correlation with distress in the child. They proposed that this emotional contagion can

be communicated to the child by non-verbal as well as verbal means and that this, in turn, increases the child's anxiety level.

Wortman and Lehman (1985) also described situations in which people responded to victims of life crises in ways that are unsupportive. First, people may feel threatened by those who are suffering, possibly as a result of anticipating increased demands upon them, or helplessness, and thus avoid them. People may also have set ideas about coping. For example, in cases of a death in the family people may have preconceptions about ways of grieving and the lengths of time needed. This may cause them to either avoid helping or offer inappropriate comments. One common example here is the statement "You're young - you can always have another one" after the death of a child.

Such failing often occurs because the helper places too much value on scripted or automatic support behaviours. For example, assuring a person that "It's natural to be upset" and saying "I know how you feel" can imply that the distressed person's suffering is of little consequence. However, helpers tend to feel obliged to say something so that they can feel that they have said or done something to help the victim.

One unusual claim of Wortman and Lehman is that quite often those closest to the victim, and who therefore have the greatest stake in the victim's recovery, may have the least tolerance for the victim's distress. These people may engage in inappropriate support behaviours such as pushing the victim towards a quicker recovery. Therefore, in analysing sources of support it may be important to look beyond family members and friends to

other potential sources of help. Others who have experienced a similar problem may be in a unique position to provide effective support. Similar others may respond to discussions of feelings with interest rather than anxiety or fear.

The potentially detrimental effects of the presence of others on children's task performance were also demonstrated by Harari and McDavid (1969) who looked at the effects of asking children to tell on, or "fink", on another child who has committed some transgression. This study was clearly not a direct examination of social support, but rather, more concerned with the effects of the presence of other children. However, its methodology allows us to draw parallels with eyewitness studies and is in that regard quite useful.

In this study, children (aged 11 to 13) witnessed staged incidents in which their teacher left the room and a confederate child misbehaved in front of the class. The misbehaviours included either the theft of some money from a teacher's desk, or the accidental erasing of an audio cassette. The children who had witnessed the incident were then asked a series of questions about the incident aimed to determine who had committed the transgression. The identity of the transgressor was varied between a high-status peer and a low-status peer (as determined by sociometric testing).

The children were interviewed in one of several ways. First, the children were either accompanied by a peer or were questioned alone. Second, the identity of the accompanying peer was varied, namely the peer

was either the child who had committed the trangression, or was simply another child who had viewed the incident.

The children were asked three linked questions about the incidents. The first question simply determined knowledge of the theft, the second was concerned with the identity of the guilty person, namely, did the child know who it was that had committed the transgression, and finally a request was made to name the guilty person. If the children said "no" to any of these questions they were not asked the remaining question(s).

It was found that the children interviewed in pairs were less likely to admit knowledge of the incident (involving a high status peer) when they were interviewed with another child present. When questioned about a low-status peer, there were no marked differences between being interrogated alone or in pairs.

When interviewed with the culprit present, children would freely admit knowledge of the event. However, they would not name the culprit if it was the high-status peer. In contrast, the low-status peer tended to be named regardless of whether or not they were present during the interview.

It is interesting to note that Harari and McDavid suggest that when children are questioned alone, the situation "implies an expectation of moral righteousness and truthfulness". Hence the finding that almost all the subjects questioned alone were willing to talk about the event and even to identify the transgressor by name. However, the presence of a peer who

also witnessed the simulated transgression appeared to deter subjects from making such accusations and identification of the transgresor.

The status of the guilty peer is important here. There seems to be an implicit peer-group norm against "finking" on a respected person, but there is no restraint against identifying a low-status guilty peer. There was pronounced reluctance to identify the high status transgressor directly by name regardless of whether the guilty person was or was not actually present during the interrogation, and regardless of the seriousness of the transgression (theft versus tape erasure).

The Harari and McDavid study has clear implications for studies of social support in the context of eyewitness research. For example, in a case of sexual abuse where a child is asked to talk about a relative (e.g., the father), the presence of another person may prove inhibiting. This may occur when the support comes from someone who knows the accused (e.g., the child's mother), as well as other sources. Here, when the child believes that the parent, or other source of support, does not want them to talk, then they are more likely to say nothing. In such cases, social support clearly is harmful. However, we may reason that when the person providing support has no reason for encouraging the child's silence, then their presence may still be beneficial.

The detrimental effects of social support may also extend into other areas of discussion. That is, the presence of another person might also influence the way that certain topics are discussed. For example, a young child may feel inhibited in discussing certain 'taboo' topics if another

person is present. However, it is also possible that some children will be more likely to discuss 'taboo' topics if a peer is present (and presumably approves of such discussions), as was the case in the Labov study. If the peer dissaproves of such topics, then their presence may prove detrimental to performance.

This process can perhaps best be explained by making reference to Wicklund's ideas on self-awareness (e.g., Wicklund and Duval, 1971; Wicklund, 1980). Wicklund's ideas on self-awareness are concerned with the effects of focussing attention on oneself and one's behaviour. With self-awareness there is a temporary increase in the tendency to pay attention to and be aware of the private, internal aspects (e.g., attitudes, traits, motives) of oneself. Social factors may play an important role by making the individual aware of his/her performance in relation to those present. Self-focused attention can be induced by a variety of methods, such as the presence of a mirror, a television camera, or an audience.

Increasing a person's self-awareness can have beneficial effects on performance. For example, Wicklund and Duval (1971) asked subjects to copy as much prose as possible in 5 minutes. Half of the subjects were alone in an empty room while the rest were alone but sat facing a mirror. The subjects in the mirror condition copied the most prose. The assumption was that mirror subjects were more aware of the discrepancy between real and ideal performance and so worked harder to reduce that discrepancy. This finding was important since it reproduced effects which had previously been attributed to the drive inducing presence of others (Zajonc, 1965).

The use of an audience as a self-awareness inducer is seen as having one major drawback. An audience not only raises self-awareness but it also can act as a direct source of influence on the subject's behaviour. For example, the presence of another person may in some subtle manner communicate to the subject that others don't want him/her to behave in a certain way. For example, Froming, Walker and Lopyan (1982) had subjects who believed that most people's attitude to the use of punishment in learning was opposed to their own view. In their first study the subjects were opposed to punishment, but had indicated on a questionnaire that they believed most people favoured it. Compared to a control group, the presence of a mirror during a teaching task led to lower levels of shocks being administered. However, the presence of an audience increased the shock levels. In the second study with pro-punishment teachers who believed others opposed punishment, the mirror increased shock levels, but an audience lowered them. Froming et al. thus question the previously adopted wisdom of using mirrors or audiences interchangably. Here, mirrors induced private self-focus, audiences public self-focus. This has implications concerning suggestibility. It may be that the presence of an audience increases the child's desire to 'help' the interviewer by giving the answers they seem to want. That is, the presence of an audience increases the demand characteristics of the interview (as described in Chapter 3). Further related evidence of the effects of an audience on behaviour comes from Zimmerman and Bauer (1956), also described earlier.

This last point, concerning the identity of the audience, leads onto the question of determining just who can be seen as suitable sources of

support. This is a question that will be discussed in more detail in the following section.

4.5 Sources of Social Support for Child Witnesses

In this section the potential value of two sources of social support available to children will be discussed. These sources are adults and peers.

Adults as a Source of Social Support

Although the similar other hypothesis tends to dominate discussions of social support (Thoits, 1986), in studies of children it is almost always adults rather than peers that are seen as sources of support (Berndt and Perry, 1986).

In the case of children as eyewitnesses adult social support is typically dismissed because of fears concerning suggestibility. The role of adults is more likely to be discussed when the interviewer has some difficulty in communicating with the child. In such situations, the adult may be called upon to act as an interpreter (Murray, 1988). Here, the adult would be expected to repeat the child's words as literally as possible and to avoid adding any interpretations to them. This procedure has not yet been investigated and its practicality remains to be seen.

When acting as a source of social support adults will be expected to remain passive during the interview. They will probably asked to say as

little as possible. Comforting the child would be acceptable but interpreting questions or attempting to prompt an answer, how ever well intentioned, is unlikely to be tolerated by the interviewer and will probably mean the removal of the parent.

Research into the processes of children's learning illustrates the potential value of allowing adults to assist children, particularly in memory tasks. A number of studies have shown how adults can facilitate young children's remembering by structuring recall so as to take maximum benefits of the context and the child's previous experiences (e.g., Wertsch, McNamee, McLane and Budwig, 1980; Paris, Newman and Jacobs, 1985). Studies by Rogoff (e.g., Rogoff, 1986; 1987) show how mothers can aid children in remembering.

Rogoff's work stems from the theoretical work of Vygotsky (1978) and Wertsch (e.g., Wertsch, 1979) which proposed that adults or competent peers could support children's task performance beyond what could be accomplished independently. A key premise here is that children do not simply receive the guidance of adults, they seek, structure, and even demand the assistance of those around them in learning how to solve problems of all kinds. This ties in with some of the ideas in Chapter 3, where children often fail to understand the purpose of an interview or task and will interpret subtle cues as meaningful. That is, children look for meaning in a situation, if it is not immediately apparent then they will interpret it as best they can depending on the information available.

Rogoff (1986) proposes that familiar adults will probably know how to assist children by translating familiar information to apply to a new problem, and to structure the problem so that the child can work on manageable subgoals. For example, in a classification task (Rogoff and Gardner, 1984), some mothers made comments such as "You need to put the things together that go together, just like on Sesame Street when they say 'three of these things belong together'."

Adults may also provide support for children through the process of scaffolding. One form of scaffolding involves providing redundancy in messages so that if a child does not understand one aspect of the communication, other forms are available to make the meaning clear. With increasing understanding the need for such assistance declines and adults reduce the degree of redundancy in their messages (Rogoff, 1987).

Mothers and other adults may at times intentionally attempt to communicate a particular understanding of a new situation through managing their emotional and nonverbal communication (Rogoff, 1987). For example, at a doctor's office a mother may try to mask her apprehension when her child is being given an injection, in order to minimize the child's reaction to the situation. This last point has implications for eyewitness studies in that when the source of support is distressed prior to an interview, this may transmit a degree of apprehension to the child. However, if the parent appears at ease then this might encourage the child to be calm (e.g., Melamed and Siegel, 1984).

Rogoff's work shows how adults can assist children's learning and remembering and illustrates the possible benefits of personal knowledge in gaining a child's cooperation. However, as suggested earlier, such assistance in child interviews is unlikely to be tolerated, since it would be seen as leading the child. Interestingly, there is no evidence to support such fears over adult's participation during eyewitness interviews. The experimental indications are that adults are a potential source of social support, both as a means of reducing stress as well as a source of practical help. Their potential role in eyewitness interviews is still to be determined.

Peers as a Source of Social Support

Although adults are the most obvious source of social support for children, there is evidence to suggest that children often seek the help of peers (e.g., Nelson-LeGall, 1981) and that peer social support can be significant in helping a child adapt to stressful situations such as parental divorce (e.g., Sandler, Wolchik and Braver, 1985). There is also evidence that because of the equal status between peers, rather than the assymetrical pairing of adult and child, children are likely to use more sophisticated levels of reasoning in discussions (e.g., Kruger and Tomasello, 1986).

Nelson-LeGall and Gumerman (1984) argue that studies of children's helper preferences, suggest that children's preferences for child versus adult helpers may vary with the help-seeker's age and the problem context. For example, preschoolers tend to prefer adults and older children as

helpers, but as Edwards and Lewis (1979) report, they prefer older peers when help involves a teaching function. Studies of older children's helper preferences suggest that peers are often prefered over adults as helpers (e.g., Northman, 1978).

Nelson-LeGall and Gumerman (1984) further suggest that childrens' preferences for parents as helpers with social problems decreases with age, whereas spontaneous selection of peers as helpers was observed to increase with age. This may be because asking an adult for help may be seen as socially unacceptable. That is, it may be seen as a weakness by the child's peers, who might make scornful or teasing comments. Nelson-LeGall (1981) suggests that the child's decision about who to ask for help, will probably depend on an analysis of whether the costs of such a request, will outweigh the possible benefits.

Although the study of children's helper preferences is still a relatively new one, it may prove to have some significance within the context of children's eyewitness testimony. For example, Nelson-LeGall's work illustrates that children have their own ideas and motivations about choosing whose help to seek and that often other children are named as desired helpers, rather than adults. Therefore, it may be that the general recommendation to interview in the presence of a parent or trusted adult, may not always reflect the child's own wishes and could in some circumstances, prove to have a detrimental effect if such help is not desired.

There is also the further consideration that children may derive some degree of social support from their peers. Sandler et al. (1985) looked at children (aged 8 to 15 years) whose parents had divorced. The children were asked who they had turned to for help and who had actually proved helpful. The children derived support from a variety of sources beyond their immediate family. Friends were regularly cited as sources of support in terms of play, advice, goods/services, emotional support and positive feedback. Developing this idea, the use of peers as a source of social support would appear to have a number of practical applications, particularly in cases in which large numbers of children are to be interviewed and it is not feasible to bring in their parents.

Kruger and Tomasello (1986) looked at child-child and child-adult dyadic interactions in a task based on the discussion of moral dilemmas. Child-child dyads were composed of friends. The child-adult dyads of mother and child. It was found that when talking together children made more spontaneous use of transacts, defined as a discussion in which an individual uses reasoning that operates on the reasoning of the partner or that significantly clarifies his or her own ideas. For example, an individual transacts when he or she extends, paraphrases, refines, completes or critiques the partner's reasoning. In discussions with an adult, the dyads were characterised as asymmetrical in that the adult dominated the interaction with questions and transacts, forcing the child into a different role to that which they would take with a peer. The adult acts as questioner and critic, the child merely as the respondent. In child-child discussion the relationship is seen as more symmetrical, the peers being equals.

Peers were more likely to negotiate, whilst adults tended to dominate. This was explained by the pressure adults can feel to provide guidance when solving complex problems with children. This is not unique to the experimental situation. In such circumstances the adults' serious responses and the children's playful responses to the task of mutual problem solving may reflect the style and status differences suggested by Piaget (1932), namely that peer and adult-child discussions of moral dilemmas are qualitatively different. He argued that children are more likely to use sophisticated reasoning with peers. In goal-directed interactions with children, adults are unable to avoid consideration of societal norms and values. Peer partners, because they are less aware of conventional approaches to problem solving, leave children freer to construct unique and mutual solutions.

This last study offers some indications to the role that either adults or peers would take in eyewitness interviews. Adults would almost feel obliged to help the child whilst a peer might not. It also has implications regarding any discussions between the witness and other people prior to an interview. Generally, if a child has discussed an event with someone then their evidence will be seen as tainted. It may be that in discussion with an adult the child does feel obliged to change their story. But when the discussion is with a peer, there is far less reason to believe the child's story will be corrupted. However, these conclusions are at present only speculations.

4.6 Conclusion

This Chapter has shown that being interviewed can be a stressful event for young children, quite independently of any stress caused by witnessing a traumatic event. It has been suggested that an important cause of stress is the isolation of the child from his/her family and peers. It seems clear that children do prefer to be questioned in the presence of a third party (Charnley, 1987), although there is no experimental evidence to directly support the implementation of such measures. However, there is evidence that experimentally provided social support can result in improved task performance across several other task domains (e.g., Labov, 1969; Sarason and Sarason, 1986), even though in some cases such interventions may be counter-productive (e.g., Harari and McDavid, 1969; Hobfoll and London, 1986). Support may be derived from a number of different sources such as relatives, other trusted adults or peers. The effects of the presence of another person will depend on a number of factors such as the needs of the interactants and the nature of the interaction between them. It is, therefore, probably unrealistic to expect that social support provided by talking with, or just being with someone will inevitably lead to to coping successfully with stress.

The provision of social support presents a potentially important area of further investigation within the context of eyewitness research. This issue has been largely ignored by researchers and very little is known about its effects on child witnesses apart from a handful of ideas based on anecdotal evidence from which some have argued for support (e.g., Murray,

1988), whilst others have dismissed it (e.g., Metropolitan Police and Bexley Social Services, 1987).

The provision of social support is perhaps a more important line of enquiry, than the use of video recordings, since its potential applications are far broader, namely to interviews conducted at any phase of a criminal proceeding. Further, the provision of social support may also have implications for other areas of research involving children, particularly memory studies where stress at the time of output is an important yet rarely considered issue. Social support may offer a way of minimizing such confounding variables.

CHAPTER 5

The Present Research

5.1 The Role of Social Support in Interviews of Child Witnesses

In the previous Chapter it was proposed that an important reason why children recall so little in interviews may be due to the stress present during an interrogation. This stress seems to be largely attributable to the isolation of the child from its peers, relatives and other trusted persons. In this Chapter the present series of studies, looking at the effects of the provision of social support on the quality of children's eyewitness testimony are introduced. This Chapter will also outline some important methodological constraints on eyewitness research involving children.

It is important to recognise that discussions of social support in an eyewitness context are quite rare. Although the idea of social support has attracted increased attention in recent years, it is still an issue that researchers have neglected. This is largely because of the image of the suggestible child. Even those advocating the provision of support add the proviso that the support person should not in any way be allowed to communicate answers to the child. Even non-verbal cues are seen as a threat. The support person's role is essentially just to comfort the child when he or she appears distressed and little else. It seems likely that when answering questions, if the child should turn to look at the support person, as if seeking confirmation or approval of an answer, then this will be interpreted by the interviewer as suggestion.

Given these restrictions it is easy to understand the difficulties in researching social support. The support person has the difficult task of balancing the desire to help with the restrictions on providing any

assistance imposed by the interviewer. That is, they must help the child, but not be seen to help them too much.

When adults are asked to provide support for children they are quite likely to intervene on the part of the child. That is, when the adult sees that the child is having difficulties in answering questions they will probably prompt the child into answering, in much the same way as was described by Kruger and Tomasello (1986) in Chapter 4. The adult support, may almost feel an obligation to 'assist' the interviewer, their very presence implying that they should participate, in spite of the interviewer's plea that they should not.

Although it is a somewhat sweeping proposal, this problem is probably central to the question of whether or not support should be provided. Even though some adults will perform their duties of supporting the child and not obviously "suggesting" answers, many will not. Social support has thus largely been dismissed from discussions on ways of enhancing interviews. Although it may well have some benefits, the drawbacks are seen as too serious.

However, as was shown in Chapter 4, social support cannot be viewed as one simplistic concept. Support may take a multitude of different forms depending on who provides the support and the way in which they assist the distressed person.

In the present studies peers were chosen as a source of social support for child witnesses. Peers offer several theoretical and practical advantages

over adults in examinations of social support. First, children do use peers as a source of support (e.g., Nelson-LeGall and Gumerman, 1984), even during traumatic situations (e.g., Sandler et al., 1985). This may be significant because in many cases of children as eyewitnesses the child's normal sources of support (e.g., parents) may have a vested interest in preventing the child from speaking, for example in cases of sexual abuse by one parent. Consequently, the child's normal social support resources are dramatically reduced.

However, more important for the present research is the fact that children are less likely to be misled by peers than adults. In Chapter 3 it was shown how misleading communications from an adult were more likely to be accepted by children than the same messages from a peer (e.g., Kwock and Winer, 1986; Ceci, Ross and Toglia, 1987). Here, suggestibility is at least partially attributable to the status of the person providing the information and not simply because of the misleading message. The significance of this fact is that the use of parents, or other adults, as a source of support is more likely to result in suggestion, either overt or implied, than the use of peers. Because of the symmetrical power status between peers, misleading messages are less likely to be accepted.

The present studies will thus determine whether or not peers, in a variety of different roles, can provide social support for children who are being questioned about a witnessed event. The answer to this question is as yet completely unknown. Children with a peer present may be less intimidated by the interview situation and talk more freely (e.g., Labov, 1969) or they may be inhibited and say less (e.g., Harari and McDavid, 1969).

At a theoretical level, peer social support may be viewed as a less potent source of suggestion than adult support. That is, peer social support is a 'purer' form of support than adult support since it presents fewer apparent dangers concerning suggestibility. Here, the very idea of social support, namely the effects of the presence of others on eyewitness performance, can be illustrated.

The importance of this reduction in suggestibility will become increasingly apparent in the second and third experimental studies which incorporate the variable of discussion as well as social support. That is, discussion between the distressed person and the source of support generally underlies the most impressive demonstrations of the benefits of social support (e.g., Melamed and Siegel, 1984; Winstead and Derlega 1985; Costanza et al., 1988). However, discussion can also have serious negative effects (e.g., Hobfoll and London, 1986). The direction of the effects seems dependent on the nature of the discussion. Given that the idea of children discussing an event with anyone will be viewed as a source of contamination, the present studies will also illustrate the effects of 'pure' discussion. That is, discussion between peers contains less chance of suggestion than discussion with an adult.

The use of peers as a source of social support also offers a significant practical advantage in that experimental work can be conducted simply by using classes of children, whereas using adults would have required either the participation of a large number of parents, or the extensive help of a few others such as the children's teacher.

5.2 Methodological Issues

There are a number of important methodological issues that need to be considered before carrying out eyewitness research with children. Here, some particularly salient ideas which influenced the present designs are identified. These include the choice of event to form the basis for the eyewitness interview, how to explain the purpose of the interview to the children and the distinction between victims and bystanders.

As described in Chapter 2, patterns of recall for meaningful or live events appear different from those for less meaningful events such as films or slides (e.g., King and Yuille, 1986). However, ethical constraints on unduly stressing children limit the types of events that experimenters will use. Typically, events will be "emotionally neutral" (Yuille, 1987) in which the children will see perhaps one or two adults with whom they may or may not interact. The children may witness the event either individually or in groups.

Although these experimental situations are more similar to those which the victims of crime observe than films, even this type of event has generalization problems. Yuille (1987) argues that the need for emotional neutrality leaves room for sceptics to question the value of eyewitness research to traumatic events such as assault or sexual abuse.

This problem is made more significant by the findings of naturalistic studies of eyewitness memory in adults (e.g., Yuille and Cutshall, 1986) which have shown that memory for events can be highly accurate. The Yuille

and Cutshall (1986) study is a particularly significant example of how well eyewitnesses can remember a traumatic incident, namely a robbery in which a storekeeper and thief were both shot. Here, there was remarkably little forgetting over time and subjects appeared resistant to the suggestions made to them by researchers several months after the incident. This stands in sharp contrast to the claims of earlier researchers (e.g., Loftus, 1979a; 1979b; Yarmey, 1979) which emphasised how unreliable adults were, this conclusion being based on lab-based research mainly using films and slides. Actual eyewitness behaviour, especially if the event is distinctive and compelling can be quite accurate, resistant to suggestion, and show little decline with time (Yuille, 1987).

Consequently, even though the use of emotionally neutral staged events is not an ideal situation, it is necessary given the practical constraints on researchers. Further, even though these events do not have a high degree of face validity, Turtle and Wells (1987) argue that the general findings may well bear comparison with naturalistic observations. For example, although age related recall differences are more pronounced in lab settings, these differences still persist in 'real' interviews.

There is another problem in staging crimes in front of subjects, namely how to gain the cooperation of the witnesses in a way that does not invalidate the findings, as was the case with Hosch and Cooper (1982), described in Chapter 4. That is, after a staged crime it is clearly inappropriate for a team of research psychologists to emerge from another room distributing armfuls of questionaires! A real crime would be investigated by a police officer, who would not appear to be in league with

the researchers. Any incongruity between a subject's perception of the event's seriousness and their stereotype of the type of interview that should follow, could invalidate the findings. For example, Murray and Wells (1982) showed that adult witnesses to a theft who were told that the event was staged were more accurate on a recognition test than those not told the theft was staged. Further, the informed witnesses showed a greater degree of confidence in their answers than the uninformed group.

To ensure validity, if a staged crime is used then the interviewer must maintain the pretence that the crime was real, which will probably result in stress for the subject, even if the actual event was not particularly traumatic. Although it may be possible to fully debrief adult subjects after such an interview, it would be much harder to explain this deception to children.

The problem of how best to explain a task to subjects is an important consideration in such research. If the purpose of the task is meaningful and important it is possible that subjects will be more accurate in their recall and less resistant to suggestion. Alternatively, it may make them feel under a greater obligation to help and lead them into giving inaccurate testimony. This fact was illustrated by Bull and Clifford (1976) who showed that adult witnesses at police identification parades would often inaccurately make a guess at the identity of a criminal because of pressures to make a selection. Somewhat similarly, Malpass and Devine (1981) showed that subjects were more likely to attempt an identication if they believed an act of vandalism was real as opposed to staged.

Except after staged crimes using confederate police officers as interviewers, the interviewer is faced with the problem of explaining the recall interview in a way that is meaningful. The most obvious way of doing this is either telling the subjects that the event was staged and the interviewer wants them to act the part of eyewitnesses, or it could be described simply as an interesting event which could form the basis of a memory test. Although this may appear to decrease the face validity of the test, it almost certainly ensures the reliability of the findings in that the whole experimental procedure is internally consistent.

Another methodological issue, initially raised in section 2.5, concerns the question of how much of an organizational prompt the interviewer should use when directing the subject to recall the event. Because the staged event is likely to be based around an insignificant or trivial incident the subject is hardly likely to spontaneously report what happened to a complete stranger. Ironically, after a serious crime, this is probably exactly what would happen.

Instead, the interviewer has to tell the subject to recall a particular incident, such as a man entering the room (e.g., King and Yuille, 1986) or a game (e.g., Goodman and Reed, 1986). Here the interviewer should not appear to know too much about the event otherwise the problems of interviewer knowledge described in section 3.3 will become important determinants of suggestibility. The key issue here is how much of an organizational prompt children need before they will recall information in all the categories requested by the interviewer. The types of information requested will probably fall into two broad categories, physical descriptions of the person/

people involved in the event, and action details, namely what the person/ people did. Younger children may require more of an organizational structure in recall than older subjects (e.g., Kobasigawa, 1974). Consequently, the interviewer should specify the types of information they are interested in eliciting, but they should not convey too much information to the subject.

In the present studies two different types of event were to be used. In the first two studies the children witnessed an event in which an adult stranger entered the classroom and spoke to their teacher. In the third experiment the children witnessed a similar event, but this time they each interacted with the man. The importance of this point is that eyewitness research is occasionally attacked (e.g., Hosch et al., 1984) because of its almost exclusive focus on bystander witnesses instead of victims, this being largely due to ethical constraints. It is not entirely clear that findings concerning bystanding witnesses generalize to victim witnesses. Some studies, such as Kassin (1984) showed how victims were less likely to make correct identifications than bystanders following the theft of money from one of them. In this study sex differences were apparent in that female victims performed worse than female bystanders, whilst the differences between the male subjects were less marked. Other studies, such as Hosch et al. (1984) suggest that the victim-bystander distinction only applies in a few situations (e.g., following biased instructions). The use of slightly different methodologies here will allow this point to be considered.

CHAPTER 6

Study 1:

The Effects of Peer Social Support and Dyadic Testing on Children's Eyewitness Testimony

6.1 Introduction I: Social Support

The effects of social support on children's eyewitness testimony are essentially unknown. This first study represented an initial examination of the impact of peer social support on children's eyewitness performance. The type of support provided was to be the presence of a peer during a free recall interview. That is, child witnesses were asked to describe an event to an adult interviewer, whilst accompanied by a peer who had not witnessed the event that formed the basis of the interview. For purposes of reference, the child who had not witnessed the event is referred to as a non-witness.

The form of support provided here is perhaps one of the most elementary forms of support possible, in that the non-witness knew nothing of the event under discussion. Although the non-witnesses were asked to help the witnesses to describe the event, their role during the interview was limited in that they could offer little practical assistance to the witness since they knew nothing of the event. This reduces any opportunities for suggestion through inappropriate prompting, either verbal or non-verbal. However, the non-witness might still have an effect on the quality of recall. The Labov (1969) study suggests that the presence of a peer can facilitate discussion. However, Harari and McDavid (1969) showed that the presence of a peer can sometimes undermine an interview by inhibiting a child.

The direction of the effects of peer presence here was more likely to be positive rather than negative. Harari and McDavid showed that peer

presence only appears to be detrimental when the peer is seen as disapproving of the other child talking and then, only if the speaking child values the opinion of that peer.

On a general level, peer collaboration, in any form, is likely to be treated with suspicion. Even the presence of a non-witness during the interview will probably be treated sceptically. It may be that the presence of another child embarrasses the child, resulting in lowered levels of recall either through inhibition or by distraction. That is, the presence of a non-witness might discourage the child from participating seriously during the intervew. The use of irrelevant or 'silly', sometimes termed fantasy speech (Goodman and Reed, 1986) might increase because of peer presence. If this should occur, then peer social support would be an almost entirely unwelcome concept.

6.2 Introduction II: The Accuracy of Joint Recall

Although the focus of the first study was on the effects of peer social support, as provided by the presence of non-witness peers, this study also incorporated a second variable, dyadic recall. This was included for two reasons. First, the performance of the social support group could be compared to another condition in which there were two peers present during an interview. Here though, two witnesses, as opposed to a witness and a non-witness were studied. The two dyad groups could then be compared for any differences in the way the children interacted.

The second purpose of the joint recall group was that dyadic recall from child witnesses, like social support, is an essentially unstudied issue. It is not clear whether or not peers collaborating would recall more information than single witnesses, nor whether joint recall increases the chances of unreliable accounts being elicited.

The dyadic recall condition thus served two purposes. To allow comparison with the social support dyads, as well as illustrating the benefits of this particular interview technique.

The issue of whether or not group recall faciltates performance is of some interest within the psycho-legal literature. When there are a number of witnesses to an incident, interviewers are faced with the question of whether to isolate them and interrogate them independently, or should some form of collaborative recall be elicited, with two or more witnesses delivering a joint account of the incident. Interviewing witnesses individually has the advantage of allowing the interviewer to check the degree of corroboration between accounts. However, individual accounts are sometimes short and fragmented and additional information may be needed.

Group recall offers the opportunity for witnesses to construct a more complete and thorough account of an incident by allowing witnesses to prompt and question each other (Edwards and Middleton, 1986a). The main drawback of group recall is that individuals may be swayed from giving correct statements by a persuasive colleague. This last point is particularly important for children, in that 'popular' thinking probably

holds that by collaborating child witnesses are more likely to distort an account.

There have been a number of studies of individual versus group performance (e.g., Sanders and Warnick, 1982; Hollin and Clifford, 1983; Stephenson, Abrams, Wagner and Wade, 1986) but these studies, all with adult subjects, elicit joint recall by asking groups of subjects to agree on a single combined account prior to the recall interview. This procedure incorporates the secondary variable of discussion. Discussion can be an important factor in remembering in its own right, as will be illustrated in detail in the next two Chapters.

Studies of dyadic or group recall, without prior discussion, are notably rare. However, Edwards and Middleton (1986a) described the processes that occur during the construction of joint accounts. They showed how in joint recall people can be reminded and prompted by others. In joint recall, subjects create a shared version of a past experience. Subjects try to make items plausible and the account is open to correction from the others present. Recalled items are open to negotiation, where they can be contradicted, or accepted.

Edwards and Middleton (1986a) asked a group of 8 students to discuss a film (E.T.). The subjects were asked to recall the film in its original sequence. Edwards and Middleton (1986a) accept that this emphasis on chronological order is only one possible means of eliciting recall and in this case was probably not the most effective means available. In other situations, subjects may prefer to give salient descriptions first.

This study supported Bartlett's (1932) ideas concerning the importance of the social construction of memory. Literal recall is something that individuals normally find quite difficult. However, in groups subjects can make use of others by pooling judgments and making plans. This leads to more complete recall.

Studies in which subjects are asked to pool judgements and then present a single joint account are far more common. This may be because the coding of group recall can be quite difficult, especially if several witnesses offer different descriptions of a particular item. Consequently, subjects will be asked to present a single agreed upon account. Any differences of opinion may be checked by asking subjects to rate the degree of confidence they feel in any statement, however this may cover both disagreements as well as real uncertainty.

Studies of joint recall following discussion involving children are particularly scarce. The one exception appears to be that by Lomov (1978) who asked children individually to recall the text of a well-known poem. Later, dyads made up of the same individuals were asked to recall the same material. Observations showed that with joint recall there was mutual correction, hypothesis testing and discussion of forgotten words. Recalled words were used as cues for further recall. Dyads were found to recall more than the sum of each individual's recall. Further, dyads were more confident in their recall.

Somewhat similarly, Stephenson, Brandstatter and Wagner (1983) asked adult subjects to recall a German translation of Bartlett's (1932) "War of

the Ghosts" story. Subjects recalled either immediately, or after a week, and individually or in dyads. Dyads were encouraged to discuss the story between themselves and to agree on a single version. Subjects rated their confidence in their testimony. They were then asked a series of 14 questions about the story and rated their confidence in each item, on a four-point scale from "guessing" through to "certain".

As expected, dyads produced more correct answers than individuals, both immediately and following one week's delay. Differences also emerged in the confidence levels shown by individuals and dyads. Whereas individuals tended to be "doubtful" about wrong answers, dyads were at least "fairly confident" about the accuracy of their errors. Further, whilst individuals were "fairly confident" about correct answers, dyads would be "certain".

Interestingly, dyads made nearly twice as many implicational errors than individuals. Implicational errors are those statements that go beyond the original, but do not contradict it. Confusional errors, namely statements that contradicted an original detail did not differ between dyads and individuals. Similar findings were reported by Stephenson, Abrams, Wagner and Wade (1986) using the stimulus material of a fictional police interrogation of a rape victim.

As a note of caution against group recall, Hollin and Clifford (1983) showed that group recall in adults deteriorated, both in terms of quantity and quality, if a leader figure was unreliable during discussions. They suggest that the issue of whether witness discussion brings about improved

recall would appear to be dependent upon the accuracy of the leader(s), should they appear within a group.

Although studies of group recall in children are rare, there are numerous studies in other domains that highlight the possible benefits of peer collaboration on task performance.

For example, Doise and his colleagues (e.g., Doise, Mugny and Perret-Clermont, 1975; Doise, 1978; Mugny, Perret-Clermont and Doise, 1981), have studied the effects of peer interaction on a variety of Piagetian tasks (e.g., conservation of length and liquid). These studies established that the performance of children during group sessions was typically at a higher level than that of children tested individually. Moreover, children from these interaction sessions performed better on individual post-tests than control subjects who had worked on the task alone. By presenting evidence of the use of novel justifications by children at post-test, and of generalization of acquired conservation responses to tasks other than those used in the interaction sessions, Doise and his colleagues have been able to make the case that more is involved here than simple imitation: "The learning acquired in social interaction arises from fundamental cognitive restructuring, and goes beyond imitative adoption of situation-specific and 'superficial' behaviour patterns" (Mugny et al., 1981; p.322).

However, it should be noted that Light, Buckingham and Robbins (1979), found that when asking pairs of children for conservation judgments, the second child's answers tended to echo those of the the first child. Light

et al. suggest that this may be interpreted as a tendency on the part of the second child to conform to the first child's judgment.

In the Doise studies the Piagetian concept of conflict between individual centrations is used to account for progress. Conflict may arise from the differences in subjects' approaches to the same task or from deliberately created differences in their perspective on the task (Light, 1983).

The beneficial effects of peer interaction have also been demonstrated in contexts other than that of Piagetian testing. For example, Light and Glachan (1985) examined the effects of peer interaction on tasks such as the "Tower of Hanoi" and a computerised version of the "Mastermind" game. The children tested were from two age groups, 7-8 years and 12-13 years. As in the Doise studies, Light and Glachan used an initial individual session, followed by either a paired or individual training session and an individual post-test.

For both experimental tasks, on post-tests the children who had worked in pairs showed marked improvements, over those who had worked alone. Since this finding applied to both age groups, Light and Glachan suggested that the effects of group testing are not limited to any particular developmental age or stage.

Overall then, it would seem that children working together can perform at a higher level on cognitive tests, as well as more general problem solving tasks, than children operating individually. These benefits may be

both short-term, namely groups perform at a higher level than individuals, as well as long-term, where those with group experience outperform those with only individual practice.

In the context of eyewitness research, this issue of group versus individual testimony, has a number of obvious practical implications, particularly given the limitations of the testimony obtained from single child witnesses. It seems possible that interviewing children in dyads or larger groups would be a more effective interviewing technique than relying on the interviewing of individuals. It may be that in listening to each other's accounts of an incident, children may develop a greater understanding of what happened, or more simply, develop a better understanding of what is required of them by the interviewer. A further possibility is that listening to another child's version of an incident may provide children with some form of organisational hierarchy into which they can introduce their own observations. The first study should determine which, if any, of these speculations is correct.

6.3 The First Study

The aim of the first study was to compare the efficiency of the 'standard interview' procedure, namely the interviewing of single child witnesses, isolated from their peers and teachers, to two experimental interview methods.

The first experimental interview method was the effect of providing peer social support during interviews. That is, single child witnesses were

to be interviewed in the presence of a peer who had not witnessed the event to be described.

The non-witness was included in the interview to provide some degree of social support for the child witness who might otherwise be stressed or inhibited during the interview. Even though the degree of stress in an experimental situation is clearly far less than that of a real eyewitness interview, it is reasonable to assume that this situation will still be fairly stressful (e.g., Marin et al., 1979) given that the children are being isolated and interrogated by an adult stranger.

The second experimental interview method to be considered was the questioning of pairs of children. Here two child witnesses were to be interviewed at the same time, giving a joint account of the witnessed event. It was initially predicted that the children interviewed in this way would recall more data than the children in the other groups. This would probably be because each child would provide some kind of organizational framework (Edwards and Middleton, 1986a), into which the other child could introduce their own observations.

It also seemed likely that the children interviewed in the presence of a non-witness peer would recall more information than those children in the control group of single child witnesses. However, the children interviewed with peer support were not expected to perform as well as those in the two witnesses condition.

Apart from having an effect on the amount of information recalled, it was also possible that the children in the experimental groups would have a tendency to recall different kinds of information to the control children. This seemed most likely with the peer support group, since they were in effect describing the event both to an adult interviewer and a peer. This may influence the recall perspective (Anderson and Pichert, 1978; Schmidt and Schmidt, 1986) with which they attempt the task. The presence of a peer might lead the children to stress the most striking, or salient points of an event, in an attempt to convey a sense of what had happened.

Given the absence of any obvious precedents in the examination of peer social support, this study could only serve as a preliminary investigation of this issue. Consequently, for practical reasons, peers for both experimental groups, were defined as members of the same class at school. In this study the eyewitness performance of children from two age groups (mean ages 7 and 10 years) was examined. Two age groups were used to assess the reliability of the findings across different groups.

In summary, it was predicted that the pairs of witnesses would recall more information than those children interviewed alone, largely because this would provide an organizational context for recall. The child witnesses interviewed with a non-witness peer were also expected to recall more information than the control children who were interviewed alone, largely because of the improved social context of the research interview.

The topic which the children were to be questioned about was a live staged event in which an adult stranger entered the children's classroom on

the pretext of looking for someone. This was classed as emotionally neutral. This point should be stressed since schools generally have strict guidelines about allowing their pupils to be unduly stressed. This was made particularly clear by the Headmaster at the school where the experiment was conducted when he explained that many years before, an English teacher had lost his job after distressing his pupils by having someone enter their classroom and fire a starting pistol at them. The teacher then asked the children to play the part of eyewitnesses as a class exercise. Not suprisingly, many of the children were too upset to participate.

The organizational prompt used to elicit recall was designed to make clear exactly what information was required as well as providing a plausible reason for requesting the children's cooperation. During the recall instructions the interviewers emphasised that they had not been present during the event and they knew nothing of the event, other than that someone had entered the classroom.

6.4 Method

Subjects

A total of 100 children (52 boys, 48 girls), 50 from each of two age groups with mean ages of 7.1 years (range 6.6 - 7.6) and 10.1 years of age (range 9.6 - 10.6), took part in the study. The children were all from one school in Whitstable, Kent.

The Staged Event

The staged event which the children were to be questioned about, involved an adult confederate of the experimenter entering the children's classroom on the pretext of looking for someone. The actor was wearing a black leather coat, a brown jumper, jeans and black shoes. He carried a plastic bag in one hand, a book and piece of paper in the other.

The actor entered the classroom, walked to the teacher's desk and asked the children and their teacher if anyone had seen a "Mr Roberts". The teacher, as previously instructed, said "No" to the question. The confederate then took a piece of chalk from the bag he was carrying and wrote "Mr Roberts" on the board. He then explained that he couldn't stay long and that he had left his bike outside. He also said that he would be back at 3 o'clock. He then left the room. The actor was in the classroom for about a minute.

The teacher then carried on with the lesson making no reference to what had happened. Five minutes later a female interviewer came to collect the children, taking them to the 'interview room', in this case, the school library. The full staged event script is shown in Appendix Ia.

Design

In this study, three methods of interviewing children were to be examined. The first of these was the interviewing of single child

witnesses. The children interviewed in this way served as a control group, against which the two experimental interview methods were to be compared.

The experimental interview methods were, the interviewing of a single child witness in the presence of a peer who had not witnessed the event (social support condition) and the interviewing of two witnesses at the same time (dyadic condition).

The social support condition involved the interviewing of single child witnesses in the presence of a known peer (a classmate) who had not witnessed the staged event. These peers are referred to here as non-witnesses. The non-witnesses were out of the room at the time of the staged event and only joined their classmates during the recall interview. Same sex pairs were used for 14 of the 20 interviews.

The two witnesses, or dyadic recall condition, involved asking two child witnesses to give a joint account of a witnessed event. Same sex pairs were used in 18 of the 20 interviews carried out in this way.

Generally the children selected their own interview pairings (for both experimental conditions), from amongst the non-witnesses in their class, just prior to the research interviews. When no peer was clearly nominated, then the interviewers chose the recall pairings at random. If a child rejected this pairing, then they were allowed to pick another partner. Somewhat suprisingly, it was quite common for subjects to choose a member of the opposite sex as their partner.

Children from two age groups were studied, namely 7 and 10 years of age. A total of 10 interviews per experimental condition for each age group were conducted. That is, 60 interviews were carried out, 30 for each age group, with 20 for each of the three experimental groups (i.e., one child only, one child interviewed with peer support, and two witnesses interviewed together). This comprised a total of 80 children who had witnessed the staged event and a further 20 who had not.

The children's eyewitness testimony was to be examined by asking the children to provide their own account of the witnessed event, that is, a free recall description.

The free recall accounts were elicited by telling the children that the interviewer was going to ask them some questions to see how well they could remember things. The task had to be explained slightly differently for each group to make it a legitimate request for the child's cooperation. In the single witness and two witnesses conditions the interviewer began by asking the children if they could remember the man who had come into their classroom that morning. The interviewer then said:

> "I'm very interested in what happened when he came in. As I wasn't there this morning, I'd like you to tell me all about it. Tell me everything you can remember about the man. I'd like to know things like what he said, what he did and what he looked like. Do you think you could do that? Tell me everything you can remember? It doesn't matter if you can't remember much, just do your best."

Once the children had begun their accounts the interviewer only prompted recall by using relatively neutral encouragements such as "Anything else?" and "Go on".

When it appeared that the children had said all that they could remember, the interviewer paraphrased the opening introduction as a form of final prompt, as in, "I'd like to know things like what he said, what he did and what he looked like."

The children in the control group and the two witnesses group received almost identical instructions, except that in the two witnesses condition it was made clear that both children should say what happened.

The instructions for the children interviewed with peer support had to be slightly modified to legitimise the presence of the non-witness. The interviewer began by saying to the witness "I'm going to ask you some questions to see how well you can remember things."

The instructions then proceeded as with the other conditions, with the interviewer asking if the witness remembered seeing a man. The interviewer then explained:

> "I'm very interested in what happened when he came in. As _____ (non-witness child's name) and me weren't there, I'd like you to tell us all about it. Tell us everything you can remember about the man. We'd like to know things like what he said, what he did and what he looked like. Do you think you could do that? Tell us everything you can

remember? It doesn't matter if you can't remember much, just do your best."

General prompts and the use of a final prompt were the same as in the other conditions. Copies of the interview instructions are included in Appendix Ib. All interviews were tape recorded via microphones placed on the table between the children and the interviewer. Interviews were subsequently transcribed.

Procedure

At the start of a lesson, the teacher asked some of the children in the class (a total of 10 per age group) to go to another room in the school, where they were to see the school's Headmaster. This was done to ensure that these children could not witness the staged event that was to follow.

While these children were out of the classroom, a confederate of the experimenter entered the classroom to enact the staged event and then left.

Once the confederate had left, the remaining children were taken to the 'interview room' (i.e., the school library), where the children who had left the room earlier were now waiting. The two groups of children (witnesses and non-witnesses) were kept separate until the recall interview. None of the pairs in either experimental condition had an opportunity to talk prior to the interviewer explaining the task. All children were asked to read quietly whilst awaiting their turn. The large size of the library and its design made it easy to separate out the

children into areas where each group (including those being interviewed) was out of sight and hearing of each other. The children's recall of the staged event was then tested. Three types of interview were conducted:

(1) *One child alone.* The control condition.

(2) *One child with peer support.* That is, one child witness, accompanied by one of the children who had not witnessed the staged event. The witness was asked to describe what had happened, to both the non-witness and the interviewer. The non-witness only joined the witness during the recall interview.

(3) *Two children: Both witnesses.*

The children who had witnessed the event were randomly assigned to one of these three conditions. The interviews were conducted in a random order to control for time delay. Three interviewers questioned the children, each interviewer using each of the three interview methods equally. The interviewers comprised the present author and two female postgraduate psychology students from Kent University. All of the interviewers were well experienced at interviewing children. None of the interviewers witnessed the staged event. Further, the two postgraduates colleagues did not know what had occured. The interviewers simply knew that there had been an event involving a man.

The children were told that the interviewer was going to ask them some questions, to see how well they could remember things. They were then asked

if a man had come into their classroom during their lesson and if they could describe what had happened. The children were asked to describe what the man had looked like and what he had done.

The event was staged five times, three times to classes of 7-year-olds and twice to classes of 10-year-olds. Only the data from the last four of the events is included here. The first staging of the event was to a small group of 7-year-olds, these interviews were carried out to allow the interviewers to practice each type of interview once, before data collection proper began.

Coding of responses

The free recall protocols were content analysed to determine the number of correct and incorrect pieces of information recalled by the children. The content analysis techniques necessary for this study were relatively easy to develop, score and check.

The main reason that the protocols were so easy to score was that the children's statements frequently took the form of short statements, such as, "He had a black coat on." Such statements were broken down into categories of informational content. For example, in the sentence "He had a black coat on" there are two basic propositions.

1. The man was wearing a coat
2. The coat was black.

Given that the children had to be instructed to describe the man to the interviewer, there being no reason why they should spontaneously choose to

do so in the present context, the information that there was a man, is not considered as informational. In real life eyewitness incidents, this information might be offered spontaneously and indeed be crucial to an investigation. Therefore, in this instance, the statement "He had a black coat on" contains only two new pieces of information, hence a score of 2 would be added to the child's total recall score.

Certain statements were considered as non-informational, in that they stated the obvious (e.g., "He had trousers"). Such statements contribute nothing to an identification, since their presence may reasonably be assumed by the interviewer. Commenting on such items would only be informational if their absence could not be assumed, for example, "He wasn't wearing a shirt". Consequently, statements such as "He didn't have a moustache" were not scored as informational, nor as errors. If such statements were to be accepted there would be a number of problems in coding. For example, should a child's score be increased if they were to say "He wasn't carrying a pink elephant". Fortunately no child ever made such a claim and there were only a handful of 'obvious' statements.

Somewhat similarly, statements of a relativistic nature (e.g., tall-short, old-young etc.) also had to be discarded from the data pool since they are virtually impossible to categorise. For example, is saying that the man was tall actually informative? Such statements will probably be determined by one's own height, and to children almost everyone is tall. Only exact statements of age, height and weight can be assessed independently and even then there are some problems in coding. For example, if the target person is 5 feet 6 inches tall, is the statement "He was

about five foot five" wrong, or just about right? To alleviate such problems all such statements were discarded from the data pool. Fortunately, once again, such statements were rare.

As well as simply exploring the effects of the experimental interview methods on the overall amount of data recalled, this study looks at their impact on the kind of data recalled. That is, a secondary question was that of whether either experimental method increased the likelihood of certain items being recalled. This measure seemed to be of value in that it might detect changes in the kind of testimony given, which might otherwise go unnoticed.

Consequently, prior to the staged event the script was content analysed into two informational categories: 1. Descriptive statements, that is statements concerned with the actor's appearance (e.g., colour of clothing). 2. Action statements, that is, details concerned with the actor's speech (e.g., "I'm looking for someone.") and his physical actions (e.g., writing on the blackboard). A full copy of the coding scheme is shown in Appendix Ic.

These categories are based on the categories of descriptive and action statements as used in other eyewitness studies involving children (e.g., Dent and Stephenson, 1979a; King and Yuille, 1986).

Incorrect statements were also scored. There were several possible kinds of errors, all errors of commission, that is, where the child incorrectly describes a part of the event. The most obvious source of error

is where a child incorrectly describes an attribute of something that did occur during the event, for example, saying the man's coat was brown when it was black. The second type of error is where the child imports a detail into his or her account that was not in any form a part of the event (e.g., he was wearing a hat). The last source of error is where a child denies that something had happened when it had (e.g., "He wasn't wearing glasses").

6.5 Results

To check the reliability of the coding of responses, the recall protocols were checked by two different raters. All protocols were checked completely. There was a very strong level of agreement between the raters with 95.9% of the 536 items recalled (correct and incorrect statements combined) being coded identically. The strong degree of correspondence was not suprising given that the majority of the statements were simple to interpret (e.g., "He had glasses. He had a black coat", etc). Disagreements were resolved through discussion.

The free recall statements are described in three parts: A. The overall numbers of correct statements; B. The categories of information recalled by each group; and C. The incorrect statements in free recall.

A. Correct Statements in Free Recall

A total of 38 different correct items were identified by the children in the free recall protocols. The mean numbers of correct statements

offered by each age and experimental group are shown in Table 1 (n = 10 for each cell). Means throughout section 6.5 are rounded to two decimal places. Standard deviations (also rounded to two decimal places) are shown in brackets.

As expected, their was a marked difference between the amount of data recalled by the two age groups, with the 10-year-old groups consistently recalling more than their younger counterparts.

Table 1: Correct Free Recall Statements in Study 1

MEAN NUMBER OF CORRECT STATEMENTS IN FREE RECALL
WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone		Witness with Social Support		Two Witnesses		Means
Age 7	5.40	(3.34)	4.80	(4.83)	8.40	(3.72)	6.20
Age 10	8.60	(2.50)	9.30	(3.59)	12.00	(3.68)	9.97
Means	7.00		7.05		10.20		8.08

For both age groups, the children in the two witnesses condition recalled more than those in the other conditions. The 7-year-old children who were interviewed with peer support recalled slightly less than the children interviewed alone (control). However, for the 10-year-olds, the

reverse was true, with the children who were interviewed with peer support scoring slightly more.

The correct statements category accounted for 90% of all the children's statements. That is, the children tended to give generally accurate accounts of the event. Accuracy rates (number of correct statements divided by total number of statements X 100) for each age and experimental group were fairly even, the range being only from 86% for the 7-year-olds in the control group, to a high of 94% for the 10-year-old children in the peer support condition. Age differences and the effects of experimental group on the proportions of correct to incorrect information were negligable.

The numbers of correct statements given in free recall were analysed using a 2-way analysis of variance (ANOVA) with age (2 levels: 7 and 10-years-old) and experimental group (3 levels: child alone, child with peer support and two witnesses) as between subjects factors.

The older children gave significantly more correct statements in free recall than the younger children ($F= 15.766$; $d.f.= 1, 54$; $p<.001$). There was also a significant effect of experimental group at the $p<.01$ level ($F= 4.98$; $d.f.= 2, 54$). There was no interaction effect $F= 0.164$; $d.f.= 2, 54$; $p>.05$). The full ANOVA table is included in Appendix Id (Table A).

Between group comparisons were calculated using the Tukey test (Cohen and Holliday, 1982). These comparisons showed that the mean difference ($10.2 - 7.0 = 3.20$) between the control groups and the two witnesses groups (both age groups combined) was statistically significant, as was the

difference between the children with a peer present and the two witnesses group (10.2 - 7.05 = 3.15). The critical value of T was 2.94 (n.v. = 3,54; $p<0.05$) in both cases.

B. What the Children Recalled: The Distribution of Free Recall Statements Across Thematic Categories.

The correct statements made by the children in free recall are subdivided below into the types of information given. The data here are divided into two categories: descriptive and action statements.

The first information category included statements concerned with the appearance of the actor. In all, a total of 20 different descriptive physical traits were identified by the children, ranging from minor details such as a belt on the man's coat, to more obviously striking details, such as, that he was wearing jeans. The mean numbers of correct descriptive statements are shown in Table 2.

The older subjects in the child alone and peer support groups gave on average just over 1 more statement than their younger counterparts. In the two witnesses condition the age difference was slightly more marked, with an average age improvement of about 2 items. Variations by experimental group, particularly with the younger subjects are quite small.

Table 2: Correct Descriptive Statements in Free Recall

MEAN NUMBER OF CORRECT DESCRIPTIVE STATEMENTS IN FREE RECALL

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone		Witness with Social Support		Two Witnesses		Means
Age 7	1.80	(1.62)	2.00	(1.63)	2.50	(1.27)	2.10
Age 10	3.00	(1.63)	3.20	(1.99)	4.50	(2.32)	3.57
Means	2.40		2.60		3.50		2.83

The correct descriptive statements were analysed using a 2-way ANOVA as with the overall numbers of correct statements described earlier. Here there was a significant effect of age ($F= 10.327$; d.f.= 1, 54; $p<.005$). However, there was no effect of experimental group on recall ($F= 2.179$; d.f.= 2,54; $p>.05$). There was no interaction effect ($F= 0.338$; d.f.= 2, 54; $p>.05$). The full ANOVA table is included in Appendix Id (Table B).

The second information category was concerned with the actions of the actor. This included his speech (e.g., He said that he was looking for Mr Roberts) and his physical actions (e.g., writing on the blackboard). The results for this category are shown in Table 3.

From Table 3 it is apparent that the children gave a higher proportion of their recall in the action statements category than in the descriptive

category. Age differences were more apparent here than for the descriptive statements, as are the effects of experimental grouping. That is, the superior performance of the two witnesses condition is clearly apparent here.

Table 3: Correct Action Statements in Free Recall

MEAN NUMBER OF CORRECT ACTION STATEMENTS IN FREE RECALL

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone		Witness with Social Support		Two Witnesses		Means
Age 7	3.60	(2.46)	2.80	(3.55)	5.90	(2.69)	4.10
Age 10	5.60	(2.63)	6.10	(2.13)	7.50	(1.96)	6.40
Means	4.60		4.45		6.70		5.25

The correct action statements were also analysed using a 2-way ANOVA in the same way as the descriptive statements. There was a significant effect of age ($F = 11.559$; $d.f. = 1, 54$; $p < .001$) and experimental group ($F = 4.610$; $d.f. = 2, 54$; $p < .05$). There was no interaction effect ($F = 3.95$; $d.f. = 2,54$; $P > .05$). The full ANOVA table is included in Appendix Id (Table C).

Between group comparisons were again calculated using the Tukey test. The mean difference ($6.7 - 4.6 = 2.1$) between the control group and the two witnesses groups (both age groups combined) was statistically significant,

as was the difference between the children with a peer present and the two witnesses group (6.7 - 4.45 = 2.25). The critical value of T was 2.097 (n.v. = 3,54; $p<.05$) in both cases.

C. Incorrect Statements in Free Recall

The children's free recall statements were also analysed for errors. Errors included any incorrect details such as colour of clothing, presence of actions or objects that had not been present during the staged event, as well as statements denying that something had happened when in fact it had. About 10% of the children's statements were classed as incorrect.

The incorrect responses were not evenly distributed between the two information categories. The vast majority of the errors fell into the category of descriptive statements (88% of all incorrect statements).

It was interesting to note that three particular errors occured with some frequency, regardless of age or experimental group. The most frequent error (11 occurences) was that concerning the colour of the actor's trousers which had been blue (jeans). Typically, children would say that they had been brown or black. One child said they were beige. The next most frequent error was hair colour (10 occurences). Here, children consistently made the mistake of saying the actor's hair was brown, when in fact it was clearly black. One other error occured relatively frequently (5 occurences), namely the colour of the actor's black coat which was typically described as brown or blue. Other errors also centred on this key question of colour (e.g., colour of eyes and bag).

There were also two rather odd errors in the children's statements, namely when two children stated that something had not happened when in fact it had. That is, two children said that the actor had not been wearing glasses. Such errors were rare, but quite interesting. They may be explained by some form of context effect in that the questioner was wearing glasses. Perhaps the children were systematically checking attributes of the questioner against their recollections of the actor. The children obviously did not remember the actor's glasses, but mentioned glasses because they were using the interviewer's appearance as a form of a organizational prompt.

Errors concerned with details of actions were less frequent (12% of all errors), with no regular mistakes being made. Since the numbers of errors were so low, with no marked category differences between either experimental, or age groups, they are not to be represented in separate tables. Instead, the mean numbers of error statements for all categories are shown below in Table 4.

The overall numbers of incorrect statements were remarkably low. The only group to give a noticeable amount of incorrect statements was the 10-year-old children in the two witnesses condition. They gave twice as many incorrect details as both of the other 10-year-old groups. However, even here, the level of such statements was still very low.

Table 4: Incorrect Free Recall Statements in Study 1

MEAN NUMBER OF INCORRECT STATEMENTS IN FREE RECALL

WITH STANDARD DEVIATIONS IN BRACKETS

	One Witness	Witness with Social Support	Two Witnesses	Means
Age 7	0.70 (1.06)	0.60 (1.26)	0.70 (0.95)	0.67
Age 10	0.80 (0.92)	0.50 (0.85)	1.80 (1.87)	1.03
Means	0.75	0.55	1.25	0.85

The numbers of incorrect statements made by each group were also analysed using a 2-way ANOVA, with the same independent variables as for the correct responses. The number of incorrect statements showed no significant differences either by age ($F = 1.391$; $d.f. = 1, 54$; $p > .05$) or experimental group ($F = 1.793$; $d.f. = 2, 54$; $p > .05$). Similarly, there was no interaction effect ($F = 1.425$; $d.f. = 2, 54$; $p > .05$). The full ANOVA table is included in Appendix Id (Table D).

6.6 Discussion

General Findings

The results of the first study showed that the presence of a non-witness peer during an interview had no effects on either the amount or quality of childrens's free recall memory. The social support group and the control group showed no differences for either the number of correct (Table 1) or incorrect (Table 4) statements. Further, there was apparently no effect of peer presence on the type of account delivered. That is, there were no differences in patterns of recall for either physical descriptive (Table 2) or action (Table 3) statements. Fears that the presence of the peer would inhibit the child witness or encourage the use of fantasy speech or other errors proved groundless.

The two witnesses group had more of an effect on recall. As expected, the children interviewed in pairs recalled more information overall than either of the other groups (Table 1). However, it was interesting to note that this difference was mainly due to the increased number of action statements given by this group (Table 3). The differences between the two witnesses group and the other groups were not significant for physical descriptions (Table 2). Interviewing pairs of witnesses had a slight but non-significant effect on the number of error statements, but the proportion of correct to incorrect statements in all groups was consistently high at about 90%.

Overall, there were very few error statements and most of these were due to incorrect colour descriptions. This finding echoes the findings of King and Yuille (1986) who also found that the colour of clothing was a particularly troublesome area of recall and of Dent and Stephenson (1979a) who found that physical descriptions were more prone to error than event descriptions. In the present study incorrect action statements were extremely rare.

There were constant age effects on the mean numbers of correct statements. The older subjects recalled more correct information overall and in each thematic category. Age differences in error rates were negligable.

Peer Social Support

This study has shown that the presence of a non-witness peer during an eyewitness interview failed to have any effects. This appears to be because the support provided by the non-witnesses was simply inadequate. The non-witnesses only rarely made any contribution during the interviews and these generally took the form of a single question such as "What man?", or statements denying they knew anything about the event such as "I wasn't there".

Although the non-witnesses were consistently attentive to their peers' accounts of the event, they generally stayed silent during the interview. This was due to the fact that their role was restricted given that they were only hearing an account of what had happened in the classroom for the

first time during the recall interview. They could thus offer little practical help to the witnesses.

It appears that children do not derive any benefits from being interviewed in the presence of a peer who knows nothing of the event under discussion. There are several possible explanations for this finding. These stress the needs of the witness, the needs of the helper and nature of the interaction between them.

It is possible that a child witness does not derive any support from a non-witness peer because the person providing support is seen as inappropriate. In Chapter 4 it was argued that similar others are a desired source of support (e.g., Schachter, 1959; Thoits, 1986). Since the non-witness knows nothing of the event they are not seen as a suitable source of support. Schachter's work is particularly relevant here in that it showed that the affiliative desire was highly directional. For example, subjects preferred to wait with others in a similar stressful situation rather than others in a different unstressful situation. In the present study, the non-witness peer was not being tested. Only the witness was being asked for a description of the event. The witness is under pressure to perform, the non-witness is not. Consequently, the witness does not derive support from the dissimilar, non-participating peer.

Schachter argued that an important part of waiting with similar others was that it allowed self-evaluations to occur, whereby the subject analysed their feelings in relation to the others present. Thoits (1986) labelled this process empathic understanding. Perhaps the witnesses in this study

were not able to evaluate their feelings, or empathisise, with a non-witness peer since the non-witness was not realistically an equal participant during the interview. This explanation emphasises the problems experienced by the witness in deriving support.

An alternative explanation of the findings could emphasise the problems the support person experiences in actually being able to provide effective support. Given that the non-witnesses knew nothing of the event, their role during the interview was essentially passive. They listened to their peers' accounts, but could not comment on its accuracy or quality. Their opprtunities for helping were thus restricted. According to Barnett, Darcie, Holland and Kobasigawa (1982) becoming a good helper not only involves the disposition or willingness to assist, but also sensitivity to the helpee's needs and feelings and sufficient competence in the problem area to reduce the distress of the other person.

In the first study the possible effects of peer social support may have been undermined by the fact that the support person was not in a position to help. That is, regardless of whether or not they wanted to help, they could not. This still allows for the possibility that children can offer support, provided they are in a position to offer practical assistance.

As was shown in Chapter 4, support may be provided in a many different ways. For example, through discussion peers may help to reduce anxiety (e.g., Costanza et al., 1988), or by pointing out their potential for helping they may assist a person (e.g., Sarason and Sarason, 1986). In each of these forms of assistance there is a degree of interaction between the

helper and the helpee. It may be that child witnesses can only derive social support from peers after some form of interaction. This possibility forms the basis of the second experimental study reported in the next Chapter.

As a final point, it should be stated that the results of this study do not consider the possibility of children deriving support from other passive non-witnesses, such as adults. It may be that the presence of an adult, even without any degree of participation on their part, might influence performance.

Dyadic Recall

The present study showed that children interviewed in pairs tend to recall more information than children interviewed alone. The children in the two witnesses condition gave an average of about 10 correct statements, whilst the control group recalled an average of 7 statements.

The reason proposed here for this improved performance is that joint interviewing enables the children to make use of the organizational framework provided by the other child. That is, one child fits his or her observations into the account of the other child. Example 1 below shows the children's tendency to 'feed off' the ideas of the other child (the children were both 10-year-old girls). In it we can see that flow of information is not particularly well organized, in that the children seem to be trying to make different points at the same time. However, it is

clear that the children are both describing the same event, only different parts of it.

Example 1

Child 1: "He had a bag."

Child 2: "Yeah."

Child 1: "White bag and a book with a white piece of paper in it and he wrote 'Mr Roberts' on the blackboard."

Child 2: "And asked us if we'd seen him. And..."

Child 1: "And we think he had black shoes on."

Child 2: "Yeah. And he said he'd left his bike outside."

The organizational framework is, therefore, not a refined one involving the systematic discussion of separate information categories (e.g., discussing appearance first, then physical actions, etc.), nor is it following any sequential pattern. Instead, each child is simply imposing their observations onto the overall framework of the other. The result is a series of turn-taking, during which the non-speaker is allowed to return to the conversation with either a new piece of information, probably with no obvious links to the previous speaker's statements, or some information that logically builds onto the last statement of the other child, or their own last statements.

As a point of interest, example 1 contains an instance where Child 1 says "And we think he had black shoes on". The use of "we" is interesting since it implies the child is speaking on behalf of both of them. This occurs even though the children had not discussed the event and the first

child could not know whether or not the second child agrees with this statement. Nevertheless, it is introduced in a form that calls for the second child to confirm the proposal, which she does.

Joint interviewing provides the children with the appropriate context into which they can introduce their observations. It also provides children with the opportunity to suggest the possibility of having seen certain details, about which they are presumably unsure, without feeling the need to commit themselves to saying that they did see it. Below (Example 2) is part of the discussion between two 7-year-old boys. In it, the first child suggests the possibility of an item's presence, by asking the second child a question.

Example 2

Child 1: "Did he have a hat?"

Child 2: "No."

Child 1: "No. He didn't have a hat."

The first child's uncertainty is thus simply resolved. Had this child been interviewed alone, it is possible that if the interviewer had specifically asked him about the presence of a hat then the child may well have given an incorrect answer. This is probably because, as Dent and Stephenson (1979a) suggest,

> "Direct questioning and cross-examination may have the effect of encouraging witnesses to endow the dubious features of their recollections with greater authority than in fact they deserve." (p.42)

This form of joint decision making, was also observed to result in some inaccurate details being stated, even though initially one of the children seemed unsure. For example, a pair of 10-year-old boys had the following exchange.

Example 3

Child 1: "He had brown or blue eyes."

Child 2: "I think it was blue."

Child 1: "Yeah."

Child 1 and 2: "Blue eyes."

Joint interviewing serves to make children eliminate uncertainties. This may be reflected in either the dismissal of certain proposals for which there is a degree of uncertainty, or it may be that it causes children to choose between a range of mutually exclusive items. It was interesting to note that complete disagreements of opinion between the children were always resolved. One child would accept the proposal of the other.

This shows some of the problems that might exist if two witnesses were allowed to discuss an incident away from the interviewer. It seems likely that following discussion the children would readily return with a single agreed upon version of an incident. The present study shows that this agreement does not necessarily mean the statement will be accurate.

The results of this study suggest that joint interviewing would seem to be a viable method of eliciting free recall descriptions. It appears

advisable that the joint recall should take place in the presence of the interviewer and without any discussion prior to testing, as is done in adult studies of group recall.

There is also the additional possibility that joint interviewing could also be carried out after individual interviews had taken place. This would be particularly interesting in the light of the Dent and Stephenson (1979a) study which showed that the repeated interviewing of individual children using free recall techniques over a long time period, resulted in a remarkably consistent level of testimony. Lomov (1978) showed that dyadic recall following individual recall was a particularly effective method of eliciting seemingly hidden information.

The results concerning dyadic recall suggest that discussion between witnesses can lead to contamination of an account. That is, one child accepts the views of the others. Consequently, the use of dyadic recall needs to be carefully constrained to ensure the reliability of recall.

6.7 Conclusion

The first study showed that the presence of a non-witness peer during an interview failed to have any effect on children's free recall descriptions of a witnessed event. This was probably because the non-witness was not seen as a suitable source of support, since they knew nothing of the event under discussion. It should be noted that allowing non-witness peers into interviews did not in any way detract from

children's eyewitness performance. Any fears that the non-witnesses might be a distraction, or distort an account proved groundless.

Interviewing pairs of child witnesses results increased the amount of information obtained. The proposed reason for this improvement is that the children interviewed in pairs make use of the general organizational framework, or context for recall, provided by the other child. That is, the children introduce their own observations into the account of the other child. This is not done in a consistently systematic way, instead it can appear a somewhat random process.

After the first study the value of peer social support is still open to question. Although its value has not yet been supported, no evidence against it emerged. It may be that following some form of interaction between the witness and the non-witness that social support will be more effective. In the next Chapter the form of social support was altered. From the first study it was apparent that the non-witnesses lack of knowledge about the event restricted their usefulness. The most obvious direction for the second study was thus to provide social support in a form that increased the chances of the non-witness being seen as a suitable source of support. This would involve the sharing of knowledge about the event in such a way that the witness would see the helper as a practical source of support, as well as allowing the helper to assist their peer, should they wish to.

CHAPTER 7

Study 2:

The Effects of Peer Interaction Between Witnesses and Non-Witnesses on Children's Eyewitness Testimony

7.1 Introduction

Informed Peer Social Support

Social support, as provided in the first study, failed to have any effects on children's free recall descriptions of a witnessed event. In this second study a different form of peer social support was provided. This will be termed informed peer support and centres on the transmission of information between the witness and support person prior to the recall interview.

The non-witnesses in the first study were included to provide social support for the witness during the recall interview. This preliminary exercise in peer social support was partially derived from the observations of Labov (1969). However, unlike the child in Labov's study, the role of the non-witness, or accomplice, in the interview was severely restricted in that they could offer little practical assistance to the witnesses, since they knew nothing of the event under discussion. In fact the non-witnesses rarely said anything at all during the interviews.

In Labov's study, the discussions were much more open-ended and consequently, the second child, Gregory, was in a position to say just as much as Leon. Although the provision of such social support may prove to be of importance if the child witness is nervous about being interviewed, the presence of an 'uninformed' non-witness peer in eyewitness studies,

centring on the discussion of specific events, would apparently seem to contribute nothing to the overall amount of information recalled.

It was suggested that the witness in the first study may not have been able to derive social support from the non-witness because of the apparent lack of relevant similarity between them. There was also a second possibility that because of this dissimilarity that the non-witnesses were unable to provide social support, regardless of whether or not they wanted to.

Effective social support seems to occur most commonly when there is some degree of similarity between the subjects (e.g., Schachter, 1959) or when the support person is seen as a potential source of practical help (e.g., Sarason and Sarason, 1986), or actually acts in a positive manner prior to (e.g., Costanza et al., 1988), or during (e.g., Vernon et al., 1967) a stressful situation. That is, the subject must see the helper as a source of support and the helper must perceive the subject's need for assistance. The witnesses and non-witnesses did not take these roles by virtue of the crucial fact that they were dissimilar in terms of knowledge of the witnessed event.

In the second study the degree of similarity between the witnesses and the non-witnesses was to be increased in that the non-witnesses were to have some knowledge of the staged event. This was to be achieved by having the witness discuss the event with the non-witness prior to the recall

interview. During the recall interview the witness would then see the non-witness as a potential source of help, since they now knew something of the witnessed event. Further, the non-witness would be able to provide practical assistance in the form of prompts or reminders, should they wish to.

The information possessed by the non-witness needs to originate with the witness with whom they are paired. If the non-witness should express ideas from another source, such as the experimenter or another peer, then they are in a position to contaminate the recall description since their suggestions would have an apparent reliability. That is, the problems of expert knowledge described in Section 3.3 (e.g., Dodd and Bradshaw, 1980; Smith and Ellsworth, 1987) would become relevant.

Although the first study showed that discussion between dyads resulted in highly agreed upon, though not necessarily correct recall, discussion between a witness and non-witness is not seen as a similar source of distortion. Given that the non-witness knows nothing of the event, the transmission of information between the two peers is going to be uni-directional. The children are not really discussing the event, instead they are acting as speaker and listener. Although the non-witness may ask questions, they are seemingly not in a position to distort the account, unless by repetition the witnesses themselves distort their accounts.

The evidence on repetition of eyewitness accounts suggests that it does not undermine the account, at least not in the short-term (e.g., Dent and Stephenson, 1979a). Long-term effects of repetition may be seen as a problem since the child is no longer describing the event, but attempting to reconstruct their previous description. Here, it has been suggested that the description becomes more salient than the event itself and may lead to incorrect recollections (Faller, 1988). Repeating the event description to a peer is less likely to be distorted than repeating it to an adult. Adults are more likely to ask for clarifications or try to structure the child's recall which may distort the account. Peers are more likely to negotiate rather than dominate (Kruger and Tomasello, 1986).

Finally, it is worth noting that there is a certain intuitive logic to the idea of interviewing children in the presence of a friend. This is because it is based on a tactic that is frequently used by schoolteachers, in a variety of different contexts, to ensure that children will carry out the instructions given to them. For example, if a young child is asked to run an errand, they will often be asked to "take a friend" along with them, ostensibly to make sure that either they, or the message, don't 'get lost' en route! This is a practice that is widely used in most English primary schools.

The emphasis of the second study is thus on the provision of informed peer support. This increases the chances of the witness deriving support from the non-witness, as well as the non-witness actually providing

support. The discussion of the event prior to recall is only one possible form of social support. Costanza et al. (1988) showed how discussion with a friend prior to testing improved task performance. However, the present research was more concerned with the effects of social support during an interview rather than prior to it. Consequently, following the discussion of the event, the non-witness partnered the witness during the recall interview.

The Effects of Post-Event Information on Memory

As well as looking at the effects of social support on free recall descriptions of an event, the second study also incorporated an examination of the effects of misleading questions on subsequent recall. The effects of misleading questions on subsequent accounts is a popular issue with adult subjects (e.g., Loftus, 1979b; Bekerian and Bowers, 1981; Hammersley and Read, 1986), whereas studies involving children are far less common and have tended to use fewer methodologies.

Research on suggestibility has taken two main directions. First, there are the short-term effects of "leading" questions and their potentially biasing effect, within an interview, on descriptions of witnessed events, as was discussed in Chapter 3. The effects of misleading questions have been demonstrated in both adults (e.g., Loftus and Palmer, 1974; Christiaansen, Sweeney and Ochalek, 1983) and children (e.g., Dale et al., 1978; Moston, 1987).

Secondly, there are the long-term effects of such questioning. That is, the extent to which information provided during one interview, affects the the statements given in subsequent interviews. This too has been studied in adults (e.g., Loftus, 1979b; Kohnken and Brockman, 1987) and children (e.g., Cohen and Harnick, 1980; Duncan, Whitney and Kunen, 1982).

The Marin et al. (1979) study involving both children and adults is a fairly typical example of this second area of study. In it, the introduction of a misleading question at the time of the first test caused a significant increase in the number of false positive responses to the corresponding non-leading question, asked two weeks after the first testing, as compared to the control subjects who received the non-leading questions both times when they were tested. Age differences were not significant.

Studies involving adults have demonstrated the conditions under which distortions will and will not occur. Loftus (e.g., Loftus, Miller and Burns, 1978; Loftus, 1979b) had argued that misleading information alters memory for an event. However, several studies have shown that when the retrieval conditions correspond with the order of the event (Bekerian and Bowers, 1981; Bowers and Bekerian, 1984), or subjects are not offered a response option consistent with the misleading information (McCloskey and Zaragoza, 1985), then the biasing effects of misleading questions do not emerge.

Demonstrations of misleading question effects are heavily dependent on the methodology used to assess its effects. Subsequent memory is usually tested with recognition tests, sometimes forced-choice, in which an option consistent with the misleading statement is provided. The theoretical limitations of post-event studies to an understanding of memory have been questioned on several occassions (e.g., Hammersley and Read, 1986; Zaragoza, McCloskey and Jamis, 1987; Gibling and Davies, 1988). The main line of argument has been that memory is not altered by post-event information. Instead, post-event information may simply bias subjects to respond in set directions depending on how memory is tested.

Although the debate on misleading information is attracting a significant degree of theoretical interest, there has been considerably less attention paid to its practical importance. This situation shows some parallels to the discussions of the effects of article in questioning (Section 3.5) which continue despite the fact that article only influences recall in a small number of subjects.

In most studies (e.g., Marin et al., 1979; Cohen and Harnick, 1980), the long-term effects of misleading questions on memory are determined by the biasing effects of the misleading information on the specific questions asked during a subsequent test. The long-term effects of misleading questions on subsequent free recall accounts is an issue that has rarely been considered, and even then, only in limited circumstances (e.g., Dale et al., 1978; Goodman and Reed, 1986). This is an important oversight.

Studies such as Marin et al. do not demonstrate that the subjects would have chosen to include the misleading information in an umprompted account. Instead, they simply show that misleading information can bias the responses to later questions on the same topic. Therefore, suggestibility has been demonstrated, but only in very specific circumstances.

One of the few studies to consider the impact of leading questions on free recall accounts, albeit very briefly, was Dale et al. (1978). In this study 4 and 5-year-old children were interviewed about the content of four short films they had just seen. Questions varied in the use of the definite and indefinite article, as described in Chapter 3.

To test the longer range effects of the leading questions, Dale et al. carried out follow-up interviews where the children were asked to give free recall accounts of the films. The results of these interviews were only reported very briefly. It was found that erroneous objects and events suggested by the earlier misleading questions were mentioned by only 4 of the 32 children tested. Loftus and Davies (1984) suggest that it is not clear from these results whether the leading questions affected the content of memory, or simply biased subjects to respond "Yes," or possibly, because of demand pressures, biased subjects to include particular items in their free recall. In short, the study demonstrated that children's free recall accounts can be influenced by leading questions, but did not show why.

Similar findings were reported by Goodman and Reed (1986). Here, subjects aged 3, 6 and adult were questioned about a game in which they had recently participated. The free recall accounts were only taken after the subjects had been exposed to misleading information provided in a series of suggestive questions.

Like Dale et al., Goodman and Reed found that intrusions of misleading information into free recall accounts rarely occured. Only two 6-year-olds and two adults incorrectly recalled items from the suggestive questions. None of the 3-year-olds incorporated the misleading information into their accounts.

Taken together, these two studies suggest that misleading questions may have only a limited effect on free recall acounts, which contrasts with their more apparent effects on later direct questions. The effect of misleading questions is thus a more complex issue than most researchers recognize. Previous experimental studies have shown that under given conditions, subjects may appear suggestible. However, the extent to which one can generalise from these studies, particularly to instances of repeated free recall is open to question. Although post-event information is undoubtedly an interesting area for theoretical debate, its practical significance in eyewitness interviews is open to question. In applied research there is a need to demonstrate that there is a problem before attempting to explain it. The second study will attempt to show if post-

event information is an important factor in influencing children's eyewitness accounts.

7.2 The Second Study (A)

The present study was a second examination of the effects of peer social support on children's eyewitness testimony. Informed peer social support was created by including a period of interaction between witnesses and non-witnesses prior to recall. Child witnesses were instructed to discuss a witnessed event with a peer who had not witnessed this event. This interaction took place prior to the recall interview, away from the adult interviewer.

The children were then interviewed in these pairings. Although it was the witness who was asked to describe the witnessed event, the non-witness was asked to help the witness as they explained what had happened. The non-witness was asked to help their classmate to tell as much as they could remember and to make sure that they didn't make any mistakes.

The performance of the children in these recall pairings was compared to a control group of witnesses who did not discuss the event with anyone and who completed the task in isolation, as is normal in other eyewitness studies involving children.

In this study the witness may derive support either from the presence of the non-witness, or from the direct participation of the non-witness. The focus of the study was on the the way the children interacted during the interview. The effects of direct interventions on the part of a support person had never been studied in an eyewitness context. Therefore, this study represents a unique opportunity to study the processes occuring during free recall. One possibility of informed peer support is that the non-witness now has the ability to influence the recall interview. They can make legitimate contributions to the interview, but whether or not this participation is helpful remains to be seen.

Also included in this study was a brief examination of the effects of misleading questions on children's subsequent free recall descriptions of an event. This was not a central issue in the present study and could only be considered in a very provisional way. Consequently, there was no control group of children who were not exposed to misleading information. To include the necessary control group would have required twice as many subjects as were used in this study, which was considered impractical. However, the results of this study would still serve as a useful comparison to the findings of Dale et al. (1978) and Goodman and Reed (1986).

Three measures of eyewitness performance were taken. First, the children were asked to give a free recall account of the event. They were then asked a series of specific questions, including four misleading questions. Finally, all of the children, including the non-witnesses, were

asked to write an account of what they had seen. In the case of the non-witnesses, they were asked to describe what they thought had happened.

The use of written statements is in itself a fairly unusual interview technique with children. It was included to see if there were any differences between oral and written statements. Past studies of memory have generally looked at text as a mode of input, not output (Edwards and Middleton, 1986b). However, Horowitz and Berkowitz (1967) tested subjects' memory for Bartlett's (1932) "The War of the Ghosts" story in a design which contrasted oral and written input and output. Irrespective of input mode, speakers were found to recall more items than writers did, but speakers were more likely to include errors than writers. The present study will hopefully shed some light on the effects of each medium on recall. However, the present design only features written recall after oral recall, as well as being after exposure to misleading information. Nevertheless, its inclusion should allow some interesting comparisons to be made.

3. Method

Subjects

A total of 54 children (30 girls and 24 boys) from two age groups, namely 7 (mean age 7.4, range 6.6 years to 7.6 years) and 10 (mean age, 10.3, range 9.6 to 10.6 years) years of age took part in the study. The children were all from one school in Ospringe, Kent.

The Staged Event

The staged event which the children were to be questioned about was very similar to that used in the first study in that it involved an adult confederate of the experimenter entering the children's classroom on the pretext of looking for someone, in this case a boy named Keith Roberts.

The confederate asked the teacher if the boy was in the room. The teacher, as previously arranged, said "No" to this enquiry. The confederate then wrote the boy's name on the blackboard. He explained that he would return later, after looking for the boy in another named classroom.

The actor was wearing glasses, a black coat, plain blue jumper, jeans and black shoes. He carried a plastic bag in one hand and a piece of paper in the other. The full staged event script is included in Appendix IIa.

Design

In the present study the effectiveness of the standard interview concept, namely interviewing individual witnesses in isolation from their peers (the control group), was to be compared to one experimental interview method.

The experimental method involved the interviewing of individual witnesses in the presence of a non-witness peer. That is, a child who had not witnessed the staged event, but who had been told of what had happened by the witness. The witness conveyed this information shortly before the

recall interview. The control group was interviewed in exactly the same as in the first study. Three measures of eyewitness performance were taken.

Free recall interviews

The children were asked to describe the staged event in their own words. The instructions for this part of the study were based on those of the first study. In the control group the interviewer told the children that he/she was going to ask them some questions to see how well they could remember things. They were then asked if they could remember a man having come into their classroom. The interviewer then said:

> "I'm very interested in what happened when he came in. As I wasn't there, I'd like you to tell me all about it. Tell me everything you can remember about the man. I'd like to know things like what he said, what he did and what he looked like."

When the child appeared to have finished the interviewer repeated the opening instructions as a final prompt by saying:

> "I'd like to know things like what he said, what he did and what he looked like."

The recall instructions for the experimental group were in two similar parts. Prior to the recall interview the witness had to be asked to describe the event to the non-witness peer. To enable this, the children were given an adapted version of the free recall instructions in that the interviewer told the non-witness that the other child, the witness, had

seen something earlier on and that he was going to be asked questions about it. The witness was asked to tell the non-witness all about the man who had come into the classroom, telling things like what he had said, done and looked like. It was further explained that although the witness would be asked about the man, the non-witness would be asked to help him/her. The non-witness was told:

> "Try to find out as much as you can, get _____ (witness) to tell you as much as he/she can remember, then later on you can help him/her to tell me about what happened."

The interviewer then left the room where the two children were and allowed them as long as they wished to discuss the event. After a few minutes the interviewer returned to ask them if they had finished. If they had not, the interviewer left and returned again a few minutes later. These discussions typically lasted 3-4 minutes.

Once the discussion was completed, the interviewer took the children to the interview room. The recall instructions were essentially the same as those give to the single witnesses, except for making reference to the role of the non-witness. The interviewer began by saying he/she was interested in hearing about the man. The interviewer then said to the witness:

> "I'm very interested in what happened when he came in. You've already told _____ (name of non-witness) about what happened, now I'd like you to tell me."
>
> "Tell me everything you can remember about the man. I'd like to know

things like what he said, what he did and what he looked like. Do you think you could do that?"

Then the interviewer said to the non-witness:

"I'd like you to help _____ (name of witness) out as much as you can. If he/she forgets anything, or says anything wrong, then can you tell me? I want you to make sure that _____(name of witness) doesn't make any mistakes."

The interview then proceeded as in the other condition, including the use of a final prompt. The full recall instructions given to the children, including the instructions given to the witness and non-witness to initiate discussion, are included in Appendix IIb.

All interviews were taped and transcribed. Coding of correct and incorrect responses was exactly the same as for the first study. A copy of the coding scheme is included in Appendix IIc.

Direct questioning

Once the children had completed their free recall descriptions of the staged event they were asked a series of 10 pre-set questions about the event. For example, the children were asked about the presence of a bag and who the man had said he was looking for.

Even though any question can be classed as leading, four of the questions were classed as overtly 'misleading' since they implied the

existence of items that had not been present during the event, namely, the presence of a scarf (two related questions) and a newspaper (one question). The other misleading question suggested that the man's coat had been blue, when it had been black. The 10 questions were:

	Classification	Correct Answer
Did he have a scarf on?	Misleading	No
Where did he say he had left his car?	Objective	On the main road
What colour scarf was he wearing?	Misleading	Wasn't wearing one
Was his coat black?	Objective	Yes
When did he say he'd be coming back?	Objective	3 o'clock
Was his coat blue?	Misleading	No
Who did he say he was looking for?	Objective	Keith Roberts
What was the shop name on his bag?	Objective	CO-OP
What newspaper was he carrying?	Misleading	Wasn't carrying one
Did he have a bag with him?	Objective	Yes

The order of the questions was randomised across subjects. The questions were contained in questionaire booklets on which the interviewer directly recorded the children's answers. A complete example of a questionnaire is included in Appendix IId. Again, the children in the experimental pairings were interviewed together, being asked for only one response to each question. Either child was allowed to give this answer, although the questions were directed at the witness. When both children offered a response to the question, the answer of the witness was taken to be the 'correct' one.

Non-verbal responses (e.g., nods) were accepted as responses provided that they were clear enough to be unmistakable. If any children failed to offer any kind of reponse, then this was marked down. Questions that failed to elicit a response were not repeated unless requested. "Don't know" responses were seen as legitimate answers (Moston, 1987) and were accepted.

The answers to the direct questions were easy to categorise as either correct, incorrect or "Don't know". In the case of the peer support condition, when the non-witness offered an answer, which was extremely rare, only the answer of the witness was scored.

Written account

Each child was asked to write a separate account of what they had seen. The non-witnesses were asked to describe what they thought had occured. The children were asked for these written accounts by a different interviewer to the one that questioned them in the first two parts of the study. The written protocols were coded in the same way as the oral statements except that special attention was paid to the possible effects of the direct questions.

Procedure

At the start of a lesson, the teacher asked some of the children in the class, a total of 9 per age group, to go to the school staffroom where they were to see the school's headmaster. This was done so that these children could not witness the staged event that was to follow.

While the children were out of the classroom the confederate entered the room to enact the staged event and then left. The teacher then carried on with the lesson, making no reference to what had happened. Shortly afterwards a female interviewer came to collect the children, taking them to the 'interview room'. A female interviewer collected the children to avoid any possible confusions concerning which man the children were being questioned about.

The children were questioned in the school's staffroom, in which they sometimes had lessons. The two groups of children, witnesses and non-witnesses, were kept separated during the experiment, except when intentionally brought together.

Two types of interview were conducted.

(1) *One child alone.* The control group.

(2) *One child witness with peer support.* That is, the witness was interviewed in the presence of a non-witness peer with whom the witness had previously discussed the staged event.

The children who had witnessed the event were randomly assigned to one of these conditions.

The children in the control condition were simply taken into the interview room where they were questioned. The witnesses in the experimental condition were asked to describe the staged event to a non-

witness prior to the recall interview. The child witnesses in the experimental condition were asked to choose their own pairing with a non-witness from a selection of the children who had not witnessed the event. The instructions given to the children at this time were essentially the same as those given to all of the children at the start of the actual recall interview.

The children in the experimental condition were allowed as long as they wished to discuss the event. Typically, these discussions lasted about three to four minutes, although some did take longer. The children in these pairings were then interviewed together.

At the start of the recall interview all of the children were told that the interviewer was going to ask them some questions to see how well they could remember things. The witnesses were asked if a man had come into their classroom and if they could describe what had happened. The children were asked to describe what the man had looked like and what he had done. The children's free recall accounts and answers to the specific questions were both tape recorded. The answers to the specific questions were also written down by the interviewer. After the recall interview had ended, the children were all asked to write individual accounts of what had happened. The children in the social support condition stayed in their pairings whilst writing.

The two types of interview were conducted in a random order to control for time delay. Two interviewers (one male, one female) questioned the children, using each of the interview methods equally.

In the analysis of the free recall information given by the children who were interviewed in the presence of a peer, the statements given by the non-witness were also included in the data analysis, providing such statements were not contradicted or denied by the witness. That is, if a non-witness gave any information during the free recall interview, then this was added to the pool of information accredited to the witness. For example, if the non-witness said that the man had been wearing glasses, then this would be classed as an additional piece of information recalled by the witness, since they must have conveyed this information to the non-witness prior to the recall interview. When the statements of the witness and non-witness conflicted, only the witnesses' statements were taken. For example, if the children disagreed about the colour of the man's coat, then the answer given by the witness would be the one used in the data analysis. This principle was applied to the analysis of both the correct and the incorrect statements attributed to the witness.

Similarly, in the analysis of the children's responses to the direct questions, when both children in an experimental pairing offered an answer, the statement of the witness was taken as the 'authoritative' one, even if it was in fact incorrect.

7.4 Results

The results section is organized into four parts: A. The statements given during free recall; B. The responses to direct questions; C. The children's written statements; D. The effects of direct questions on the children's written statements.

A. Free Recall

The recall protocols in the second study were analysed by two independent coders. As in the first study their judgements showed a high degree of correspondence. 96.96% of the recall statements were coded identically.

Correct Statements in Free Recall

A total of 46 different items were identified by the children in the free recall protocols and written statements. The mean numbers of correct statements in free recall given by each age and experimental group are shown below in Table 5 (n = 9 for each cell). Means throughout section 7.4 are rounded to two decimal places. Standard deviations (also rounded to two decimal places) are shown in brackets.

As initially expected, there was a marked difference between the amount of information recalled by the two age groups, with the 10-year-olds providing a greater number of correct statements. Age differences were most marked in the control condition, where children were interviewed alone.

Table 5: Correct Free Recall Statements in Study 2

MEAN NUMBER OF CORRECT STATEMENTS

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone		Child With Informed Peer Support		Means
Age 7	5.33	(2.78)	12.78	(4.12)	9.06
Age 10	11.78	(5.07)	16.00	(3.57)	13.89
Means	8.56		14.39		11.47

There was also a marked effect of experimental group on the mean numbers of correct statements for both age groups. This was most marked for the younger subjects interviewed with a peer, who recalled more than twice as much correct information as the control group.

Each group of children showed a consistently high degree of accuracy in their free recall of information. On average, about 89% of the information given in free recall was classed as correct. There were no real differences in accuracy rates between the control and the experimental group.

Very little of the correct information recalled by the experimental groups could be attributed to the prompting of the non-witnesses. In fact, the non-witnesses gave only a handful of prompts that contributed an average of 0.8 statements for the 7-year olds and 0.6 for the 10-year-olds.

This clearly accounts for only a small fraction of the improved recall of the experimental groups.

In order to determine if there was a more general effect of the oral contributions of the non-witnesses the transcripts were checked to see if there was a relationship between the oral participation of the non-witnesses and the number of correct statements in free recall. The correct recall statements were correlated (Pearson Product Moment) with, 1. The number of times the non-witnesses spoke during the recall interviews, that is, each 'turn' at speaking was scored as a single contribution; and 2. The total number of words spoken by the non-witnesses. From these figure a mean length of utterance (MLU) score can be calculated (number of words divided by number of turns).

For the 7-year-olds the non-witnesses averaged 2.78 conversational turns (standard deviation = 3.70). Although most children spoke very little, one child spoke almost as often as the witness, but very little of what he said actually contributed to the witness's free recall score. The correlation between number of speaking turns taken by the non-witnesses and correct free recall was $r = 0.406$ (d.f. = 7; $p>.05$). The correlation between the number of words spoken by the non-witnesses (average = 22.33; standard deviation = 33.59) was also non-significant ($r= 0.344$; d.f. = 7; $p>.05$). The mean length of utterance by the non-witnesses was 5.12 words (standard deviation = 4.15).

For the 10-year-olds the non-witnesses averaged 1.22 conversational turns (standard deviation = 1.39). This correlated negatively with free

recall, although not significantly (r = -0.39; d.f. = 7; p>.05). The correlation with the mean numbers of words spoken was also negative (r = -0.4; d.f. = 7; p>.05). The MLU was 4.47 (standard deviation 3.59).

The differences between the age groups were compared using t-tests. For the number of conversational turns taken by the non-witnesses there was no age difference (t = 1.18; d.f. = 16; p>.05), nor was there a difference for the number of words spoken (t = 1.16; d.f. = 16; p>.05).

The number of correct statements given by each group was analysed using a 2-way ANOVA, with age (2 levels) and experimental group (2 levels) as between subjects variables.

There was a significant effect of age on the mean numbers of correct statements (F= 13.32; d.f.= 1,32; p<.001). There was also a significant effect of experimental group at the p<.001 level (F= 19.402; d.f.= 1,32). There was no interaction effect (F= 1.48; d.f.= 1,32; p>.05). The full ANOVA table is included in Appendix IIe (Table E).

Between group comparisons were calculated using the Tukey test. The 7-year-old control group differed from the 7-year-old experimental group at the p<.01 level (mean difference = 7.45; critical value of T= 6.474; n.v. = 4,32), but the mean difference between the 10-year-old groups (4.22) was not significant (critical value of T= 5.097; n.v. = 4,32; p>.05). Interestingly, the two experimental groups did not differ either (p>.05).

Incorrect Statements in Free Recall

As with the previous study, the most common errors were concerned with the colour of the actor's clothes as well as his hair colour (21 occurences, 43% of all errors). There were several other common errors such as incorrectly naming the boy the actor was searching for (9 occurences, 18% of all errors) and incorrect statements about where the actor had parked his car (5 occurences, 10% of all errors). The mean numbers of incorrect statements given by each group are shown below in Table 6.

Table 6: Incorrect Free Recall Statements in Study 2

MEAN NUMBER OF INCORRECT STATEMENTS

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone	Child With Informed Peer Support	Means
Age 7	0.78 (0.97)	1.89 (1.62)	1.33
Age 10	1.33 (1.33)	1.33 (1.00)	1.33
Means	1.06	1.61	1.33

As in the first study, the mean error scores were generally very low. The most interesting finding here was that for the control group, the error rate showed a slight increase with age, whilst for the experimental group, it was the younger children who gave the highest number of incorrect

statements. Overall differences between the age groups were minimal. The control group gave slightly fewer incorrect statements than the experimental group.

Overall percentages of incorrect statements were consistently low. About 11% of all statements were classed as incorrect.

Very few incorrect statements were given by the non-witnesses. The 7-year-old non-witnesses gave an average of 0.6 incorrect statements, the older non-witnesses an average of only 0.3.

The oral contributions made by the non-witnesses (number of conversational turns and numbers of words spoken) was correlated with each child's score in incorrect free recall, as was done with the the correct statements.

For the 7-year-olds there was an extremely interesting and significant correlation between the number of conversational turns taken by the non-witnesses and incorrect statements in free recall. The correlation value of $r = 0.815$ (d.f. = 7) was significant at $p<.01$. The number of words spoken by the non-witnesses also showed a significant positive correlation with incorrect statements in free recall ($r = 0.722$; d.f. = 7; $p<.05$). The MLU for the non-witnesses was 5.12 words (standard deviation = 4.15).

For the 10-year-olds the same pattern of results emerged although neither the correlation between conversational turns and free recall ($r = 0.299$; d.f. = 7; $p>.05$) or the numbers of words spoken by the non witnesses

(r = 0.429; d.f. = 7; p>.05) approached significance. The MLU for the non-witnesses was 4.47 words (standard deviation = 3.59).

The number of incorrect statements given by each group was analysed using a 2-way ANOVA, with age and experimental group as between subjects variables. There was no effect of age on incorrect statements (F= 0.00; d.f.= 1,32; p>.05) or experimental group (F= 2.00; d.f.= 1,32; p>.05). Further, there was no interaction effect (F= 2.00; d.f.= 1,32; p>.05). The full ANOVA table is included in Appendix IIe (Table F).

B. Direct Questioning

Responses to Objective Questions

After the children had completed their free recall accounts of the staged event, they were asked a series of 10 questions. 6 of the questions were concerned with aspects of the event which had occured (e.g., "Did he have a bag"). These questions were termed objective. Responses were grouped into three categories correct, incorrect and "Don't know".

Correct Responses to Objective Questions

Table 7 shows the average numbers of correct responses to objective questions. Means are rounded to two decimal places, as are the standard deviations shown in brackets. The differences between the groups were only slight, showing no obvious effects of either age or experimental group. Nearly half of all the objective questions were answered correctly.

Table 7: Correct Responses to Objective Questions

MEAN NUMBER OF CORRECT STATEMENTS OUT OF SIX

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone	Child With Informed Peer Support	Means
Age 7	2.61 (1.05)	2.44 (0.77)	2.53
Age 10	3.00 (1.50)	2.89 (1.14)	2.95
Means	2.81	2.67	2.74

The correct responses to objective questions were analysed using a 2-way ANOVA (age x experimental condition). There was no effect of age ($F= 1.19$; $d.f. = 1,32$; $p>.05$) or experimental group ($F= 0.132$; $d.f. = 1,32$; $p>.05$). There was no interaction effect ($F= 0.005$; $d.f. = 1,32$; $p>.05$). The full ANOVA table is included in Appendix IIe (Table G).

Incorrect Responses to Objective Questions

The mean numbers of incorrect responses to the objective questions are shown in Table 8. As with the correct responses, there were no obvious effects of either age or experimental group.

Table 8: Incorrect Responses to Objective Questions

MEAN NUMBER OF INCORRECT STATEMENTS OUT OF SIX

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone	Child With Informed Peer Support	Means
Age 7	2.06 (1.31)	2.50 (1.66)	2.28
Age 10	2.56 (1.24)	2.33 (1.30)	2.45
Means	2.31	2.42	2.37

The incorrect responses to objective questions were analysed using a 2-way ANOVA. There was no effect of age ($F= 0.13$; d.f. = 1,32; $p>.05$) or experimental group ($F= 0.058$; d.f. = 1,32; $p>.05$). There was no interaction effect ($F= 0.521$; d.f. = 1,32; $p>.05$). The full ANOVA table is included in Appendix IIe (Table H).

"Don't Know" Responses to Objective Questions

The mean number of "Don't know" responses to the objective questions is shown in Table 9. This shows that there was no variation by experimental group, but there was an apparent effect of age. The younger children gave about twice as many "Don't know" responses as the older children.

Table 9: "Don't know" Responses to Misleading questions

MEAN NUMBER OF "DON'T KNOW" STATEMENTS OUT OF SIX

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone	Child With Informed Peer Support	Means
Age 7	1.33 (0.83)	1.06 (1.33)	1.20
Age 10	0.44 (0.73)	0.78 (0.67)	0.61
Means	0.89	0.92	0.91

The "Don't know" responses to objective questions were analysed using a 2-way ANOVA. The age effect was not statistically significant ($F= 3.564$; $d.f. = 1,32$; $p>.05$), neither was experimental group ($F= 0.008$; $d.f. = 1,32$; $p>.05$). There was no interaction effect ($F= 0.978$; $d.f. = 1,32$; $p>.05$). The full ANOVA table is included in Appendix IIe (Table I).

Responses to Misleading Questions

Four of the 10 questions were classed as misleading since they implied the existence of items that had not actually been present during the staged event. Two related questions suggested that the man had been wearing a scarf, whilst the other suggestions were that the man's coat had been blue (when it had in fact been black) and that he had been carrying a newspaper.

All of the children gave an answer to each of the misleading questions. These responses were classed as correct, incorrect or "Don't know". There were no 'silences' from any of the children in response to these questions.

Correct Responses to Misleading Questions

The average numbers of correct responses to the misleading questions are shown below in Table 10. This shows that the children interviewed in the presence of a peer gave a slightly higher number of correct responses to the misleading questions than did the control group. Age differences were negligable.

Table 10: Correct Responses to Misleading questions

MEAN NUMBER OF CORRECT STATEMENTS OUT OF FOUR

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone		Child With Informed Peer Support		Means
Age 7	1.44	(1.09)	2.11	(0.93)	1.78
Age 10	1.56	(1.13)	2.11	(1.54)	1.84
Means	1.50		2.11		1.81

The numbers of correct responses were analysed using a 2-way ANOVA (age x experimental condition). There was no significant effect of age (F=

0.018; d.f.= 1,32; p>.05) or experimental group (F= 2.230; d.f.= 1,32; p>.05). Further, there was no interaction effect (F= 0.018; d.f.= 1,32; p>.05). The full ANOVA table is included in Appendix IIe (Table J).

Incorrect Responses to Misleading Questions

The mean numbers of incorrect responses to the misleading questions are shown in Table 11.

Table 11: Incorrect Responses to Misleading questions

MEAN NUMBER OF INCORRECT STATEMENTS OUT OF FOUR

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone	Child With Informed Peer Support	Means
Age 7	1.22 (1.20)	0.89 (0.93)	1.06
Age 10	2.11 (1.06)	1.11 (1.05)	1.61
Means	1.67	1.00	1.34

The average number of incorrect responses to misleading questions also showed some variation by experimental condition, with the children in the control groups giving the most incorrect responses. There was also a slight age effect with the older children consistently giving more incorrect answers.

The numbers of incorrect responses were also analysed using a 2-way ANOVA (age x experimental condition). Once again, there was no significant effect of age ($F= 2.326$; $d.f.= 1,32$; $p>.05$) but there was a slight effect of experimental group ($F= 3.349$; $d.f.= 1,32$; $p<.08$). There was no interaction effect ($F= 0.837$; $d.f.= 1,32$; $p>.05$). The full ANOVA table is included in Appendix IIe (Table K).

"Don't know" Responses to Misleading Questions

The mean number of "Don't know" responses to the misleading questions is shown in Table 12.

Table 12: "Don't know" Responses to Misleading questions

MEAN NUMBER OF "DON'T KNOW" STATEMENTS OUT OF FOUR

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone	Child With Informed Peer Support	Means
Age 7	1.11 (1.12)	1.00 (1.00)	1.06
Age 10	0.33 (0.71)	0.78 (1.09)	0.56
Means	0.72	0.89	0.81

The lower average error rate of the older children illustrated in Table 11, would seem to be attributable to the fact that the younger children

were more likely to say "Don't know" in response to leading questions than their older counterparts. That is, older children were more likely to give a 'definite' answer to each question rather than say "Don't know". In fact, the younger children gave approximately twice as many "Don't know" responses as the older children. The most striking differences were observed between the responses of the children in the two control groups.

The numbers of "Don't know" responses were analysed using a 2-way ANOVA (age x experimental condition). The age difference was only significant at the $p<.08$ level ($F= 3.408$; d.f.= 1,32). Experimental group had no significant effect ($F= 0.028$; d.f.= 1,32; $p>.05$). Further, there was no interaction effect ($F= 1.380$; d.f.= 1,32; $p>.05$). The full ANOVA table is included in Appendix IIe (Table L).

C. Written Accounts

Correct Written Statements

The mean numbers of correct written statements given by each age and experimental group are shown below in Table 13 (n = 9 for each cell). Also included in the table are the scores of the non-witnesses since they were also asked to write accounts of the event (independently of their experimental partner) although these scores were not statistically analysed.

Table 13 shows that the mean numbers of correct written statements are generally lower than those given in the oral condition (see Table 5).

However, the 7-year-old control group gave more correct information in the written condition.

Table 13: Correct Written Statements

MEAN NUMBER OF CORRECT STATEMENTS

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Only		Child with Informed Peer Support		Non-Witness		Means
Age 7	6.33	(4.80)	7.33	(4.53)	6.11	(4.51)	6.59
Age 10	10.67	(5.61)	11.00	(4.90)	10.67	(4.97)	10.78
Means	8.50		9.17		8.39		8.69

As would be expected, the older children wrote more than the younger children and thus gave higher numbers of correct statements. It is interesting to note that there is a general absence of any effect of experimental group on the number of correct statements, given the wide differences observed in the free recall condition. The children in the younger experimental group gave approximately 50% fewer correct written than oral statements. For the older children the corresponding drop was about one-third.

Overall, the accuracy rate here (average 80% accuracy) is slightly lower than those of the oral condition. This may possibly be attributed to the effect of the direct questions, which are discussed later.

The numbers of correct written statements given by the control and experimental groups only, were analysed using a 2-way ANOVA (age x experimental condition). The scores of the non-witnesses were not included in these analyses.

As with the correct oral statements, there was a significant effect of age on the number of correct written statements ($F= 5.818$; $d.f.= 1,32$; $p<.05$). However, there was no effect of experimental group ($F= 0.162$; $d.f.= 1,32$; $p>.05$). There was no interaction effect ($F= 0.04$; $d.f.= 1,32$; $p>.05$). The full ANOVA table is included in Appendix IIe (Table M).

Incorrect Written Statements

Table 14 shows the mean numbers of incorrect written statements.

The mean numbers of errors in the written condition were slightly higher than those of the oral condition, but again there were no obvious differences between the age groups or the experimental groups. However, it is interesting to note that the younger children gave a higher proportion of inaccurate details than the 10-year-olds. The younger non-witnesses gave the most incorrect statements.

Table 14: Incorrect Written Statements

MEAN NUMBER OF INCORRECT STATEMENTS

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Only	Child with Peer Support	Informed Non-Witness	Means
Age 7	2.00 (1.32)	1.55 (1.74)	2.78 (1.41)	2.11
Age 10	1.67 (1.32)	1.78 (0.97)	1.78 (1.30)	1.74
Means	1.84	1.67	2.28	1.93

The numbers of incorrect written statements given by the control and experimental groups were analysed using a 2-way ANOVA (age x experimental condition). Again, the scores of the non-witnesses were not included in these calculations. There was no effect of age ($F= 0.015$; $d.f.= 1,32$; $p>.05$) or experimental group ($F= 0.134$; $d.f.= 1,32$; $p>.05$). Similarly, there was no interaction effect ($F= 0.372$; $d.f.= 1,32$; $p>.05$). The full ANOVA table is included in Appendix IIe (Table N).

D. The Effects of Direct Questions on Subsequent Recall

The children's written statements were analysed for any effects of the direct questions, both objective and misleading, on free recall. The objective questions (e.g., "Who did he say he was looking for?") had a marked effect on the children's written statements. On average each child

recalled one piece of information they had not given in free recall, that could be directly attributed to the effect of the objective questions. This improvement in recall was generally offset by the failure to write down other details that had been mentioned in free recall.

The effects of the objective questions on the written statements are shown in Table 15. These figures refer to the number of times items related to the objective questions were mentioned in the written statements, but had not been mentioned in free recall.

Table 15: Correct Written Statements Concerned with the Objective Questions

TOTAL NUMBER OF CORRECT STATEMENTS
WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Only	Child With Informed Peer Support	Means
Age 7	1.28 (0.44)	0.94 (0.63)	1.11
Age 10	1.06 (0.81)	0.83 (0.79)	0.95
Totals	1.17	0.89	1.03

Although almost every child recalled "new" information following the prompting of the direct questions, there was no marked effect of either age or experimental group. The effects of the objective questions on the inclusion of new information were analysed using a 2-way ANOVA (age x

experimental condition). There was no effect of age (F= 0.533; d.f. = 1,32; p>.05) or experimental group (F= 1.481; d.f. = 1,32; p>.05)). There was no interaction effect (F= 0.059; d.f. = 1,32; p>.05). The full ANOVA table is shown in Appendix IIe (Table O).

The inclusion of new information following the prompting offered by objective questions illustrates the potential benefits of such questioning. However, a more important issue concerns the effects of misleading, or incorrect information on subsequent recall. The results of this part of the study are described below.

The items suggested in the misleading questions (i.e., the man had been wearing a blue coat, had been wearing a scarf and had carried a newspaper) were spontaneously stated three times in the initial free recall interviews. One child in the 10-year-old control group said that the man's coat had been blue, whilst two children in the 10-year-old experimental group made the same error. This may be reasonably attributed to chance given that exactly the same error occured in Study 1. The presence of a scarf or newspaper was not mentioned by any of the children during the free recall interviews.

Table 16 below shows the number of times each of the three target items was mentioned in the written protocols. Since the overall numbers of such statements are so low, the actual number of incorrect statements is shown instead of group means. The figures in brackets refer to the number of times each target item was mentioned. The first figure refers to the number

of times the scarf (S) is mentioned, the second, the blue coat (C) and last, the newspaper (N).

In the written protocols there was a total of 18 errors directly related to the misleading questions with no clear differences by age or group. Although the overall scores were low, the total of 18 'target errors' in the written protocols, as opposed to only 3 in the oral condition, shows a marked effect of the misleading questions. Approximately half of the children included one 'target' item into their written accounts of the event following the misleading questions. The majority of the children made only one error related to the misleading questions, only one child made two errors of this kind.

Table 16: Incorrect Written Statements Concerned with the Misleading Questions

	TOTAL NUMBER OF INCORRECT STATEMENTS					
	One Child Only		Child With Informed Peer Support		Totals	
		(S-C-N)		(S-C-N)		(S-C-N)
Age 7	5	(2-1-2)	1	(1-0-0)	6	(3-1-2)
Age 10	6	(2-3-1)	6	(2-3-1)	12	(4-6-2)
Totals	11	(4-4-3)	7	(3-3-1)	18	(7-7-4)

The numbers of errors related to the misleading questions were also analysed using a 2-way ANOVA. Given the low overall numbers, it was not suprising to discover that there was no effect of age (F= 3.512; d.f.= 1,32; p>.05) or experimental group (F= 1.561; d.f.= 1,32; p>.05). Similarly, there was no interaction effect (F= 1.561; d.f.= 1,32; p>.05). The full ANOVA table is included in Appendix IIe (Table P).

7.5 Discussion I

The results of this study clearly demonstrate the benefits of interviewing child witnesses in the presence of a non-witness peer, with whom they had previously discussed the event. Although the peer interaction children in both age groups gave more information in free recall than their counterparts in the control groups, the results were most striking for the children in the youngest age group. That is, the 7-year-olds in the experimental group recalled more than twice as much correct information as the control children who were interviewed alone (means of 12.78 and 5.33 correct statements respectively). In fact, the 7-year-olds in the experimental group recalled slightly more than the 10-year-old control subjects.

It was particularly encouraging to note that the number of errors in free recall showed only slight differences between the control and experimental groups. The children in the experimental group did give slightly more incorrect statements than the control group (a fact entirely attributable to the younger age group), but this difference was not statistically significant. The proportion, or percentage of errors in free

recall, was remarkably consistent across age and experimental conditions. Approximately 89% of the children's testimony was classed as correct, showing no difference between the experimental and control groups.

As expected, the children in the oldest age groups consistently recalled more than the younger children. Age differences were most marked in the control group where the older children recalled, on average, more than twice as much as the younger children. For the children in the experimental groups there was also an age effect, although this was not nearly as pronounced as that for the control group, the difference being about a 25% increase with age. The experimental condition thus served to substantially reduce, though not eliminate, the size of the developmental differences in recall.

There were no age or experimental group effects on responses to objective questions. Responses to objective questions were not particularly impressive. On average, less than half of the questions were answered correctly. This poor performance level echoes the findings earlier studies, as discussed in Chapter 3 (e.g., Marin et al., 1979) in showing that children's responses to direct questions are an unreliable method of eliciting testimony.

The responses to the four misleading questions slightly favoured the children in the experimental groups. That is, the children interviewed in the presence of a peer gave more correct responses and fewer incorrect responses than the children in the control groups. However, these

differences were only marginally significant. There were no age differences in responses to the misleading suggestions.

The children's written statements also showed a predictable developmental progression in that the older children gave more correct statements than the younger children. However, given the marked differences in free recall it was suprising to note that there were only slight differences in written recall between the children in the control and experimental conditions.

The accuracy rates of the written statements were generally high (about 80%), but this was lower than that in the free recall conditions. This may be partially attributed to the effect of the four misleading questions. It was found that the number of errors related to the three target items (the presence of a blue coat, scarf and newspaper) increased from only three such errors in the free recall condition, to a total of eighteen in the written statements. That is, about half of the children incorporated information from the misleading questions into their written statements. There were no significant differences between the control and experimental groups in the inclusion of the misleading data. The same was true in the inclusion of correct data implied by the objective questions. On average each child incorporated one detail from an objective question that they had not mentioned spontaneously in free recall, in their written statements.

The conclusions that can be drawn from the written protocols are restricted by the confounding effects of the misleading questions and the possibility of order effects. It would be interesting for later studies to

examine the use of written statements in more detail. For example, it is possible that asking children to give written statements before being interviewed may have certain benefits. Apart from allowing the child to give a statement in the absence of an adult, the written statement may be used as the basis for direct questioning during the interview.

There is also the possibility that written statements could simply be taken as an alternative to an oral statement, a method that has already been used by List (1986) in an eyewitness study involving 10 year-olds. The chief problems in the use of initial written statements would be the child's level of written competency (both fluency and legibility), as well as being able to explain to the child, in an unambigous way, exactly what information is required and why.

The present study would seem to have important implications regarding the current use of children's written statements by police officers. Firstly, this study shows that children can be very sensitive to the information contained in misleading questions. It is possible that if children give their written statements after being questioned by an adult, that they may incorporate certain aspects of the questions into their written statements, thereby reducing its validity. In the present study 17 of the 36 interviews were influenced by the misleading questions.

Second, it seems that the amount of information that children will give in a written statement is less than they would give during an oral interview, supporting Horowitz and Berkowitz (1967). This was most obvious in the case of the experimental group children.

The extent to which the misleading questions influenced the children's written statements was more marked here than was reported by Dale et al. (1978). This study suggests that misleading information can be incorporated into children's statements quite frequently, unlike Dale et al. who suggested that such effects may be the exception rather than the norm.

7.6 The Second Study (B)

To test the possibility that the effects of peer interaction on eyewitness recall might extend to other age groups, this study was repeated, with a slightly modified event and design, with a group of 4-year-old children.

Method

Subjects

A total of 20 children were to take part in the study. The children were all from one age group (mean age 4.4; range 3.7 to 4.10 years). The children were all from a Day Nursery in Canterbury, Kent.

The Staged Event

This was essentially the same as in the main part of this study in that a man entered the children's room, in this case a play area, on the pretext of looking for someone. The man entered the room during the children's morning break whilst they were all seated on the floor. The only differences between this event and the earlier version (see Appendix IIa)

was that the man was introduced to the children by the nursery staff and that he did not say the name of the other class where he would be looking. Instead he said he would look "in the second play area" which was where the youngest children were playing.

Procedure

The procedure for this study was exactly the same as for the older children. The recall instructions (Appendix IIb) and series of 10 questions (Appendix IIc) were exactly the same as before. The children were interviewed in the Nursery staff room. One key difference between the studies was that since the younger children were not capable of writing an account of the incident, this final part of the study was omitted.

7.7 Results

The first thing to point out here was that using four-year-old subjects proved extremely problematic. Five children refused to take part in the study, despite the best efforts of the experimenters and the nursery school staff. Two children refused to leave the play area where they had witnessed the event and two non-witnesses became so upset after being asked to talk with a witness that they too would not participate. One other child became so upset upon entering the interview room that he could not be interviewed. Even some of those that did participate in the interviews became upset. Two began crying, whilst another climbed onto a chair and put the microphone in his mouth. All three completed their interviews after receiving encouragement from the interviewers. This meant that the number of

interviews in each group was slightly reduced. As a consequence of the difficulties in running this part of the study a planned continuation of the study, using another group of 4-year-olds, was not conducted. The sample size is, therefore, quite small (n = 5 interviews per condition).

The mean numbers of correct and incorrect statements given in free recall are shown in Table 17. Standard deviations (rounded to two decimal places) are shown in brackets.

Table 17: Correct and Incorrect Statements in Free Recall From 4-Year-olds

MEAN NUMBERS OF STATEMENTS IN FREE RECALL

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone		Child with Informed Peer Support		Means
Correct Statements	1.0	(1.00)	2.0	(1.41)	1.5
Incorrect Statements	0.2	(0.45)	1.00	(1.41)	0.6

The number of correct statements was consistently low, but favoured the experimental group. The number of incorrect statements was also low, but there was some additional dialogue, classed as fantasy or irrelevant talk which was not scored since it was clearly not part of an event description. However, since the use of fantasy speech may influence perceptions of credibility it should be mentioned. The use of fantasy speech occured once in each group. One child said the actor looked like a pig. The other example was where the child broke off from her description of the actor to

tell the interviewer about her new trainers. As a rule, non-witnesses did not say anything during interviews and when they did it was only after a "joke" had been made by a witness. The non-witnesses did not contribute any information, correct or incorrect, to the data pool.

The correct and incorrect statements were analysed using t-tests. Neither t value was significant (correct statements, $t = 1.291$; incorrect statements, $t = 1.206$; both d.f. = 8; $p>.05$).

The children were also asked a series of 10 questions, 6 were classed as objective, 4 misleading. The use of fantasy speech was far more common during this part of the interview, particularly in the social support condition where the witness child would say things to make the other child laugh. For example, when asked "What colour bag was he carrying" one witness said "Blue and red and green", following which the non-witness began laughing. The witness then added several more colours to the description. Other examples of fantasy-type answers included: he had left his car outside because a monster was coming; the car was for the wicked witch who didn't have one; the actor's coat had a Care Bear on it; and finally, a brief discussion on the existence of pink newspapers. All these examples came from the social support condition. Fantasy speech did not occur in the control group. The children's responses to the objective and misleading questions, classified as correct, incorrect and "Don't know" are shown in Table 18.

There were no obvious differences between the groups in responses to the 6 objective questions. However, there were some peculiarities in the

experimental group's responses to the misleading questions. The children with peer support were particularly poor in responding to misleading questions. Oddly, one child answered all 4 questions correctly, but the other children all gave incorrect responses to every question.

Table 18: 4-Year-Olds' Responses to Objective and Misleading Questions

MEAN NUMBERS OF RESPONSES TO QUESTIONS

WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone		Child with Informed Peer Support		Means
Objective Questions	(out of 6)		(out of 6)		
Correct Responses	2.6	(0.82)	1.8	(0.45)	2.2
Incorrect Responses	2.6	(0.89)	2.4	(0.89)	2.5
"Don't know" Responses	0.8	(0.76)	1.8	(0.84)	1.3
Misleading Questions	(out of 4)		(out of 4)		
Correct Responses	1.2	(1.09)	0.8	(1.78)	1.0
Incorrect Responses	1.8	(0.84)	3.2	(1.79)	2.5
"Don't know" Responses	1.0	(1.00)	0.0	(0.00)	0.5

Generally, the children's responses to questions were not very reliable. An average of half of all questions were answered incorrectly. The use of "Don't know" responses was the single encouraging finding. It seems that even 4-year-olds will say when they don't know an answer.

The scores were analysed using t-tests. None of the differences between groups approached significance except the "Don't know" responses given to the misleading questions which neared significance at the $p<.05$ level ($t= 2.236$; $d.f. = 8$; $p<.10$). The other t scores are shown in Appendix IIe (Table Q).

7.8 Discussion II

The present study has shown that peer social support during an interview, following a period of discussion between the witness and the support person, leads to improved recall. The results for the 7 and 10-year-old subjects were quite striking. However, for the 4-year-olds, even though the same trend of results in free recall was observed, this form of support does not appear to be a viable prospect, although this may in part be due to the problems of getting the children to participate. There were some particularly unfortunate effects of peer social support on the youngest children in that the use of fantasy speech increased. It seems that the presence of another child presents a significant source of distraction for very young children.

This might be explained by the effects of an audience on self awareness. For example, the presence of an audience appears to distract 4-year-olds, leading them to joke with their peer. This is perhaps an instance of public self-focus where the subject behaves in accordance with how they percieve their audience wants them to act (e.g., Carver and Humphries, 1981; Froming et al., 1982. For the older children it may be that an attentive audience also increases public self-focus, but this time

the effect is to improve performance. That is, the witness believes the non-witness wants him/her to perform as well as possible and acts accordingly. The trend of responses to misleading questions in the 7 and 10-year-old experimental groups (more correct and fewer incorrect responses, though not statistically different) might reflect this process. For the youngest children misleading questions were most commonly answered incorrectly whilst the older subjects' responses tended to be more accurate. It seems that the playful behaviour of the 4-year-old non-witnesses contrasts sharply with the more serious approach taken by the older subjects.

For the two older age groups, peer social support was far more sucessful in that free recall was enhanced, with no detriment to accuracy. In the following discussion, the results of the main study involving the older subjects will be emphasised.

Perhaps the first point to make about these results is that they provide strong support for the decoding deficit hypothesis. That is, the fact that the children in the peer interaction condition recalled more information than the control children, with no increase to the amount of incorrect information, suggests that children interviewed alone are giving an artificially low level of information in free recall. A particularly striking observation here was that the 7 year-olds in the experimental condition recalled more information than the 10 year-olds who were interviewed alone. Further, the effects of peer interaction served to minimise the developmental differences in the amount of information given. That is, in the control condition, the older children gave more than twice

as much correct information as the younger age group. However, for the experimental groups, the respective developmental progression was only about one quarter.

There are several possible explanations for the present findings. These will be discussed in terms of provided and derived social support. Provided social support refers to instances of helping behaviours originating with the non-witness, whereas derived support refers to the ways in which the witness uses the presence of the non-witness to his/her own advantage. It will be shown that although these factors are strongly related and not easily disentangled, this distinction is an important one since it underlies any attempt to explain the findings at a theoretical level.

During the recall interviews the non-witnesses were essentially passive. That is, although they did offer a few prompts and occasionally asked questions, generally they remained silent. There were only a few examples of prompting and the majority of questions that were asked focused on items that had not been present during the staged event (e.g., "Did he have a moustache?"), which did not contribute to the numbers of correct statements (or incorrect statements, unless the witness said "Yes" to such questions). The direct contributions of the non-witness that led to correct or incorrect statements being made were quite scarce and were certainly not nearly enough to explain the marked differences in recall. For example, for the 7-year-olds the prompts of the non-witnesses could only account for an average of 0.8 extra items being recalled, whilst the average differences between the 7-year-old groups was over 7 more correct statements. One can interpret these findings as evidence that the recall improvements of the

peer interaction children are not due to the overt contributions of the non-witnesses. That is, the non-witnesses did not provide much practical support, at least not during the interviews.

Although the contributions of the non-witnesses had little direct effect on recall it was interesting to note that the general participation of the non-witnesses (as measured by conversational turns and number of words spoken) seemed to affect the quality of the account. For the younger subjects the spoken contribution of the non-witnesses showed a positive but non-significant relationship with the number of correct statements. However, there was a worrying significant positive correlation between the contributions of the non-witnesses and the number of incorrect statements.

For the older subjects the contributions of the non-witnesses correlated negatively, but non-significantly with correct statements in free recall. However, the undesirable positive correlation (again non-significant) emerged between the contributions of the non-witnesses and incorrect statements. This highlights a potential danger in the use of peer social support which will be considered further later in the thesis.

The presence of informed peers is, however, more of a benefit than a burden. It seems that if the non-witnesses are providing any practical support, it is probably occuring prior to the recall interview. Initially it seemed unlikely to suppose that the discussion between the witness and the non-witness prior to recall would in itself be an aid to recall. However, it is a possibility. The Costanza et al. study showed how problem solving discussions prior to task performance lowered anxiety levels as

well as having positive behavioural effects. In the present study, the discussion between the children cannot be classed as anything but problem solving discussion, since the children are practicing what they are to say during the interview. The interaction may serve to reduce anxiety prior to task performance since the child is made more aware of what is expected of them during the interview. In other words, they now know how to perform the task at hand.

Problem solving talk prior to the interview is essentially a form of both provided and derived social support. Through discussion the witness may develop a sense of control and thus confidence (Costanza et al., 1988). The discussion part of the present study is essentially offering a way to deal with the stressor. That is, upon hearing what their task is, namely to describe a witnessed event, the witness experiences a degree of apprehension. However, following a period of discussion about the event the child may realize that the task is not an especially difficult or threatening one and thus provide a more complete description of the event.

The Costanza et al. study also showed that discussions on unrelated or distracting issues also lowered anxiety. This raises the possibility that the peer interaction phase need not centre on problem solving discussion. It could, possibly focus on other unrelated matters which might also reduce anxiety. However, this form of support would only be appropriate if we can be sure that it is the discussion phase prior to recall that underlies the improvements in recall observed here.

There remains the strong possibility that it is the presence of an informed non-witness during the interview itself that leads to improved recall. Here, the witness derives support from the very presence of the informed non-witness. The most suitable parallel here is the series of studies by Sarason (e.g., Lindner, Sarason and Sarason, 1986). In Sarason's work the provision of social support may be viewed as a potential source of help, in that the witnesses derived support from the experimenter's offer of help, without ever requesting any such assistance. In the present study it is possible that the witnesses derived support from the knowledge that the non-witness was a potential source of help. As with the Sarason studies, the children did not really take advantage of this offered help but they may still have derived support from its availability.

This suggestion may be be supported by the findings of the written recall part of the study where there was no effect of experimental group on recall. While the witnesses were writing their accounts of the event, the non-witnesses were also engaged on the same task. Even though the children were sitting next to each other they were each engaged in separate tasks. To the witness, this may have invalidated the non-witesses' potential for helping in that they could not be called on to back them up, since they were pre-occupied. That is, even though the non-witness was still present they were no longer a potent source of support. This may explain why there was no effect of experimental group on this part of the study.

It is possible that being interviewed in the presence of someone you know could help you, perhaps by backing up your account of an event increases confidence levels. The reason for the lack of any effect of non-

witnesses on the amount of information recalled in the first study, could be that children only derive social support from peers if they have already confided in them. That is, simply having a peer present isn't enough to provide fully adequate social support. Perhaps peer social support, possibly as opposed to support from trusted adults, can only be derived when there is some degree of shared information between the two children. This suggestion echoes a relatively common situation in adults, for example rape victims, who often only agree to talk to the police if a friend can stay with them during the police interrogations.

We are left here with two possible explanations for the results of this study. It may be that either discussion prior to recall reduces anxiety, thereby improving recall as the Costanza et al. study would suggest, or, the children derive support from the potential for helping offered by the presence of an informed non-witness, in a manner similiar to that proposed by Sarason.

Clearly, it is necessary for future research to discriminate between these possibilities. If prior discussion should emerge as the key to the improvements in recall, then other discussion techniques, for example, unrelated talk could be studied. This would have the advantage of not having the witnesses discuss the event itself. Even though the present study has shown that discussion between a witness and non-witness did not lead to increased unreliability, interviewers are likely to treat any prior discussion of an event with some scepticism. Alternatively, if it is the presence of an informed non-witness during the interview itself that is

important, future research would need to focus more closely on the issue of social support, for example, the identity of the person providing support.

7.9 Conclusion

The second studies have shown that informed peer social support leads to significant improvements in children's (aged 7 and 10) free recall and also has some lesser effects on children's immediate responses to misleading questions. The single drawback may be that the spoken contribution of the non-witnesses during recall appears to be related to increased error rates.

The results are the first experimental vindication of the importance of social support to an understanding of why children tend to say so little in eyewitness interviews. The results offer strong support for the decoding deficit hypothesis in that children can recall far more information than they will spontaneously do so. This was achieved without the use of any prompting on the part of the interviewer which probably explains why the accounts were so consistently accurate. The problems of suggestibility in interviews have essentially been avoided in the present study.

There are two likely reasons why the experimental group recalled more information than the control group children. These centre on whether social support is important either prior to, or during the recall interview. It is equally possible that both forms of support are important and that their combined effect explains the present results. The next study will attempt to discriminate between these possibilities.

CHAPTER 8

Study 3:

The Effects of Discussion and Social Support on Children's Eyewitness Testimony

8.1 Introduction

The results of the second study were interpreted in terms of the effects of the provision of social support. The key question raised was whether or not support was most effective prior to or during recall, or possibly even both. However, it should be pointed out that there are alternative explanations for the findings that do not rely on the notion of social support. Instead, they rely more on general principles of memory such as rehearsal and organizational strategies. The third study looks at the independent and combined effects of discussion and social support. This will clarify whether or not the presence of the non-witness during the recall interview is of importance.

The most obvious alternative explanation for the findings in study 2 is that rehearsal underlies the improvements in free recall. That is, during the discussion part of the study the child is rehearsing his or her account. Rehearsal has been shown to be a strategy that young children can use, though they may not do so spontaneously (e.g., Ornstein, Naus and Stone, 1977; Ornstein and Naus, 1978; Guttentag, 1984). Kail (1979) summarises the evidence on rehearsal as suggesting that children aged about 5-6 do not seem to rehearse at all and 7-year-olds will rehearse only occasionally and then somewhat simplistically. From age 10 onwards rehearsal is used more commonly and with increasing proficiency. Although younger children will show improved recall performance following instructions to rehearse, they will often revert back to their non-rehearsing state in subsequent memory tests (Flavell, Beach and Chinsky, 1966). Rehearsal is usually discussed in studies involving list learning

where its benefits are clearly apparent. For example, Keeney, Cannizzo and Flavell (1967) showed that following instructions to rehearse children aged 6 to 7 were more likely to accurately remember the names of pictures.

In study 2 the discussion with the non-witness may have served as a particularly salient form of rehearsal. This explanation negates the value of social support, even though the rehearsal is based on social interaction rather than solitary repetition. If rehearsal is the key to the improvements in free recall, then the presence of the non-witness peer during the recall interview is not necessary. The third study will serve to resolve this question.

It is also possible that discussion with a non-witness affects the recall perspective with which the witness attempts the task. That is, it may be that in communicating with another child the witness conveys one version of the event and when talking with an adult provides another. The interviewer thus affects the recall perspective with which the child attempts the task. Although this point also seems somewhat unlikely it's potential significance should not be missed. The shift from one recall perspective (conveying information to another child) to a second perspective (telling an adult), might increase the amount of information recalled, by providing the witness with two perspectives with which to attempt the task. That is, the child has two sets of organizational frameworks into which they can introduce their observations. This explanation seems especially unlikely given that in the first study there was no difference between the type of information recalled by the control and peer support groups. As with rehearsal, this explanation would only

worth considering again if the presence of the non-witness during the interview is proved to be unimportant.

There is also the further possibility that discussion with another child helps the witnesses to understand the purpose of the task on which they about to engage. That is, through peer interaction the purpose of the interview becomes more apparent, or rather, it makes more sense. This factor may be especially important in experimental studies of children as eyewitnesses, since it may not always be apparent to the children involved, just why an adult should want to ask them questions. Peer interaction may serve to make the experimenter's intentions, or rather, the children's interpretations of them, more apparent.

This study will clarify whether or not peer interaction prior to an interview has an effect on recall, independent of the presence of the interacting partner during the interview. If the presence of the informed peer during an interview shows no difference with other groups in which the non-witness is not present, then the arguments concerning social support are considerably undermined. This would leave a significant problem in interpreting the results of the second study. It may be that prior discussion, as advocated by Costanza et al. (1988) is important, however, it is not possible to claim that this is the only explanation of the findings. It could well be that rehearsal, or even alterations in the recall perspective are important. However, if the presence of an informed non-witness leads to superior recall performance relative to a discussion only group then this would confirm the arguments centring on the value of

social support. In this case, Sarason's studies would probably provide the most suitable explanation for the findings.

8.2 The Third Study

In order to provide a more definite answer concerning the importance of informed social support, a third study looking at the independent and combined effects of discussion and social support was carried out. This study was to incorporate both forms of social support used in the previous studies, as well as a discussion-only condition, that is, interviewing witnesses after they have discussed the event with a non-witness, but without the non-witness being present during the interview.

There were four types of interview to be conducted, three of them replications of interviews used in the previous studies. The four types of interview included the following.

1. Child alone, no discussion.

   This was the control group, as used in the previous two studies.

2. Child with a non-witness peer present, no discussion.

   This was a replication of the peer present condition from the first study where the witness is interviewed in the presence of an uninformed non-witness.

3. Child with a non-witness peer present, after discussion.

   This was a replication of the informed peer support condition from the second study.

4. Child alone, after discussion.

   This was a new type of interview. Here the witness discussed the staged event with a non-witness, but was then interviewed alone.

The sole dependent measure in this study was free recall memory. It was considered impractical to introduce any other measures given that this design would be fairly complex to orchestrate within reasonable time limits. The children had to witness the event in small groups in order to minimise the time it took to run the experiment. If the children had been studied individually the study would have taken considerably longer. The main problem here is that this would have greatly increased the chances of contamination. That is, it would have been difficult to prevent the children who had taken part discussing it with their classmates at breaktime or lunchtime. Consequently, whole classes had to be interviewed in the time between break periods (typically one and a half hours).

Testing children in groups also presents problems of its own. It requires skilled organization to keep the children in their respective groups and to ensure that they receive their prior recall instructions (when necessary) at the appropriate moments. There was also the problem of looking after the children until they had completed the task in order to prevent them from simply returning to their classroom to tell everyone else what had happened. This required a considerable amount of coordination

between those running the experiment as well as the full cooperation of the children's teachers who kept the children who had taken part in the study safely away from those who hadn't. During this experiment two of the experimenters present would be delegated to looking after the children whilst the third person conducted an interview. To have introduced other dependent measures such as specific questions or written statements would have made the situation too cumbersome to be reliable, mainly because of the time it would have taken to interview each group of children.

This study involves some necessary repetition of the previous designs. The effects of discussion only (no peer presence during interview) needed to be directly compared to an informed peer present group of witnesses. Only then could the relative effects of each variable become clear. Also, this study allowed an ideal opportunity to test the earlier findings in a different context. That is, the third study differed from the previous two in the type of event used. In the earlier studies the children were bystander witnesses. In the third, the children were to be active participants. This serves to increase the face validity of the design since in many cases of children as witnesses they do in some way interact with a perpetrator (Goodman, Aman and Hirschman, 1987).

8.3 Method

Subjects

A total of 98 children (56 witnesses, 42 non-witnesses) from two age groups, namely 7 (mean age = 7.4, range 6.8 to 7.7) and 10-years-of age

(mean age = 10.2, range 9.6 to 10.7) took part in the study. The children in each age group were taken from two schools in Chartham and Davington in Kent.

The Staged Event

The event which the children were to be questioned about involved an adult confederate of the experimenter (the same one as in the earlier studies) entering a room in which there were four children. The man asked the children their names and which class they had come from. He also told them that later on some people would be coming to talk to them and that he was going to show them how to use a tape recorder. He did this by asking them to say their names into a microphone and then replaying the tape. The event involved the children moving about the room and talking with the man. The man joked with the children during the demonstration. Finally he said that he had to go and make a phonecall. The event lasted nearly five minutes.

This event shows a degree of similarity with that in the previous studies. The main difference was that the children now had to talk with the man, rather than simply observing him. Other differences included the number of children present in the room, which was lower than before, and the duration of the event, which was longer than before. The full script for the staged event is included in Appendix IIIa.

Design

This study examined the independent and combined effects of peer presence and discussion on children's free recall memory. Four types of interview were to be studied. 1. Child alone, no discussion. 2. Child with peer support, no discussion. 3. Child with peer support, after discussion. 4. Child alone, after discussion.

These four categories are split across the two dimensions of peer absent - peer present and no discussion - after discussion. This can be schematically represented as follows.

	Peer Absent	Peer Present
No Discussion	Interview Type 1.	Interview Type 2.
After Discussion	Interview Type 4.	Interview Type 3.

This design allows an examination of peer presence and discussion as main effects, as well as illustrating the presumed interaction between them.

The instructions given in free recall were derived from those developed in the first two studies. The only new development being the introduction of an interview in which a witness discussed the event with a non-witness but was then interviewed alone. The instructions given to the children in this group were essentially the same as for those to be interviewed with the informed peer present, namely where the witness was told to discuss the event with the non-witness. In both discussion groups the instructions

emphasised that both children would subsequently be interviewed, though they did not specify whether or not the children would be together.

The instructions given to the children at the start of the interview were also essentially the same as those used in the earlier studies. The children were told that the interviewer was interested in how well they could remember things. The children were then asked if they had seen a man earlier on and if they could describe him, including details of what he had done. The full recall instructions given to the children at the start of the interviews are included in Appendix IIIb.

The children's free recall statements were all tape recorded. The interviews were then transcribed and independently scored by two coders under the coding guidelines detailed in Chapter 7. A copy of the coding scheme for this study listing all possible correct statements is included in Appendix IIIc.

Procedure

Children were taken from their classroom in groups of 7. These groups were selected by the teacher. The selected children all sat near to each other in their classroom. Four of the children were then taken to another room in their school where they were to witness the staged event. The room in which the event occured was the medical room in one school, the music room in the other. The interviewers were not present during the event. Meanwhile, three other children, the non-witnesses, waited out of sight in yet another room.

Four types of interview were conducted with each group, in a randomised order by three interviewers (one male, two female). All but the control group condition required the participation of a non-witness.

For the after discussion interviews, the witness and non-witness were asked to discuss the event prior to the recall interview. The children were allowed as long as they wished to talk together. In the child alone, after discussion group, the witness and non-witness were separated just prior to the interview. For all of the interviews requiring two people, same-sex pairs were used.

At the start of the interview the children were told the interviewer was going to ask them some questions to see how well they could remember things. The witnesses were asked if a man had come into the room and if they could describe him and what had happened. When the interview appeared to have ended the interviewer repeated his/her opening lines as a form of final prompt. During the interview only neutral prompts such as "anything else" and "go on" were used.

As in the second study, the contribution of the non-witnesses in the third group was included in the data analysis provided the statements were not contradicted or denied by the witness. Procedures for the coding and checking of responses were the same as in the previous studies.

Once all of the children in a group had been interviewed they were returned to their classroom. To prevent any contamination the children were asked not to tell anyone what they had been doing until a specified time

(e.g., lunchtime). Further, these children were then isolated from the other children in their class. The next group of seven children would then be taken. This procedure was repeated four times for each class. When there were more than 28 children in a class, the other children would take part in the fourth round of interviews.

8.4 Results

The results section is organized into two parts: A. The correct statements given during free recall; and B. The incorrect statements given during free recall. Inter-rater reliability of scoring was very high at 97.58% agreement between the two coders. Disagreements were resolved by discussion.

A. Correct Statements in Free Recall

A total of 46 different items were identified by the children in the free recall protocols. The mean numbers of correct statements in free recall given by each age and experimental group are shown below in Table 19 (n = 7 per cell). Means are rounded to two decimal places. Standard deviations, also rounded to two decimal places, are shown in brackets.

Table 19 shows that the combination of both peer presence and discussion (informed peer support) again results in improved recall. The children interviewed with informed peer support recalled an average of 10.34 items, the control group average was only 6.08. The mere presence of a peer, as in the first study had no real effect on recall. Discussion

without subsequent peer presence appears to have had some benefits, although we should be cautious here since the score of the discussion-only group is slightly inflated by the score of one 10-year-old child who recalled 21 correct pieces of information. Consequently, we may say that discussion alone appears to have some effects on recall, although these are clearly not of the magnitude of discussion combined with peer presence.

Table 19: Correct Free Recall Statements in Study 3

MEAN NUMBER OF CORRECT STATEMENTS IN FREE RECALL

WITH STANDARD DEVIATIONS IN BRACKETS

	NO PEER			PEER PRESENT				
	Age 7	Age 10	Mean	Age 7	Age 10	Mean	Age Means	Grand Means
NO DISCSN	5.86 (2.16)	6.29 (1.60)	6.08	4.71 (2.43)	6.00 (2.58)	5.36	7= 5.29 10= 6.15	5.72
AFTER DISCSN	5.71 (3.09)	9.14 (5.96)	7.43	10.71 (2.98)	10.14 (3.16)	10.43	7= 8.21 10= 9.64	8.93
Age Means	5.79	7.72		7.71	8.07		7= 6.75	
Grand Means	6.76			7.89			10= 7.90	7.33

The age trends reported in the previous studies have not been completely borne out in this study. The control group children show only a

slight increase in performance with age. The children interviewed with a peer present (no discussion), showed a clearer age related improvement, as did those in the discussion only group. The children interviewed with informed peer presence showed almost no differences by age group. The absence of the marked age effects observed in the previous studies merits special mention. A possible explanation for this finding, centring on the type of event used, will be outlined in the Discussion.

Some of the results of this study, namely, control group performance, peer presence effects and informed peer presence effects, can be directly compared to those in the previous studies.

1. Control group performance: The control group in the third study recalled on average slightly fewer correct (6.08 items) than the children in the first study (6.90 items) and the children in the second study (8.28 items). Age differences in the first two studies were more marked than in the last study.

2. Peer presence, no discussion effects: The peer present (no discussion) group in the third study corresponds to the peer present condition in the first study. Performance levels in the last study (mean recall 5.36 correct items) was less than that in the first study (mean recall 7.25 items). Again, age differences were more marked in the first study.

3. Informed peer presence effects: The performance of the informed peer present condition in the second study (mean recall 14.45) was greater than that of peer present after discussion group in the third study (mean recall

10.34 items). It was interesting to note that the 7-year-olds in this group again recalled more than the 10-year-old controls. In this study, the differences are more pronounced than before. There was no observable age effect here, even though there was one in the second study.

As in the second study, the non-witnesses contributed very little information, either correct or incorrect. In the 7-year-old group the contribution of the non-witnesses resulted in an addition of only three correct statements and one incorrect statement, following prompts which were agreed upon by the witness, or at least not contradicted. The 10-year-old non-witnesses were also fairly reticent in making contributions. Three correct and three incorrect statements were attributed to the contribution of the non-witnesses.

Overall, the non-witnesses said very little during the interviews, the majority of their responses seemed to be supportive statements that agreed with the description of the event, such as "yeah", or simple repetitions of statements (witness: "He had glasses", non-witness: "Glasses"). There were a few examples of non-witnesses prompting recall by asking questions ("Did he have a beard?"), or simply reminding the witness of things they had said earlier ("You left out the colour of his hair"). However, such prompts were quite unusual and rarely helped to increase the recall performance of the witness.

As with the second study, the more general effects of the non-witnesses participation during the recall interview was examined by correlating correct free recall scores with the contributions of the non-witnesses as

determined by the number of conversational turns they took and the number of words they spoke.

For the 7-year-olds the non-witnesses averaged 2.78 conversational turns (standard deviation = 3.7). Unlike the first study this produced a negative correlation with correct free recall, but this was not significant ($r = -0.329$; d.f. = 5; $p>.05$). The number of words spoken by the non-witnesses showed the same negative correlation with correct free recall ($r = -0.346$; d.f. = 5; $p>.05$). The mean length of utterance by the non-witnesses was 8.38 words (standard deviation = 8.12).

For the older subjects the same pattern of results emerged, turn taking correlated negatively with correct statements ($r = -0.342$; d.f. = 5; $p>.05$) as did the number of words spoken ($r = -0.317$; d.f. = 5; $p>.05$). MLU for the older non-witnesses was 8.2 (standard deviation = 6.09).

Differences between the age groups in turn taking and words spoken by the non-witnesses were both non-significant ($t = 0.127$ and 0.469 respectively; d.f. = 12; $p>.05$).

The correct statements as a proportion of the total number of statements once again shows that the children were generally giving accurate accounts of the event. As with the previous studies, about 89% of all statements were correct. Although variation by age and experimental group was generally negligable, as in the previous studies, there was a single exception. The 10-year-olds in the control condition (no peer, no discussion) were only accurate with 81% of their statements. This is due to

the relatively high number of errors made by this group (a mean of 1.43 errors). Quite why this happened is difficult to interpret.

The children's correct statements were analysed using a 3-way ANOVA, with age (two levels: 7 and 10 years), peer presence (two levels: peer absent and peer present) and discussion (two levels: absence and presence of discussion) as between subjects factors.

It was particularly interesting to note that unlike the previous two experiments, there was no effect of age on recall ($F= 1.769$; $d.f.= 1,48$; $p>.05$). There was a significant effect of discussion on recall ($F= 13.99$; $d.f.= 1,48$; $p<.001$), but not peer presence ($F= 1.769$; $d.f.= 1,48$; $p>.05$). There was no interaction between age and discussion ($F= 0.111$; $d.f.= 1,48$; $p>.05$), or age and peer presence ($F= 0.836$; $d.f.= 1,48$; $p>.05$). However, the expected interaction between discussion and peer presence was significant ($F= 4.670$; $d.f.= 1,48$; $p<.05$). The three way interaction between age, discussion and peer presence was not significant ($F= 1.997$; $d.f.= 1,48$; $p>.05$). The full ANOVA table is included in Appendix IIId (Table R).

Tukey tests were used to directly compare the effects of each experimental group. These tests showed that the mean difference between the control group and the discussion plus peer presence group (4.35), and between the peer support group and the discussion plus peer presence group (5.07) were both statistically different (critical $T= 4.037$; $n.v. = 4,48$; $p<0.01$). The difference between the discussion only group and the discussion plus peer presence group ($10.43 - 7.43 = 3.00$) neared

significance but did not reach the $p<.05$ level significance level (critical T= 3.256; n.v. = 4,48). However, Tukey tests for each age group (critical value of T= 4.61; n.v. = 4,48; $p<.05$) showed that the 7-year-olds recalled more than the control group (10.71 - 5.86 = 4.85), the peer present no discussion group (10.71 - 4.71 = 6; $p<.01$) and the peer absent after discussion group (10.71 - 5.71 = 5). That is, for the younger subjects the presence of the peer and discussion was significantly superior to all other conditions. For the older subjects all such comparisons were non-significant.

B. Incorrect Statements in Free Recall

As in the previous studies, the children made very few errors in their free recall statements and those that did occur centred on colour. The most common errors were the colour of the actor's trousers (5 times) and the colour of his shoes (4 times). Other errors included incorrect descriptions of the actor's hair colour, the colour of his shirt and the presence of a tie.

The low numbers of errors were reasonably evenly distributed amongst the different groups. There was virtually no variation across any of the three dimensions. The mean numbers of incorrect statements are shown in Table 20.

Table 20: Incorrect Free Recall Statements in Study 3

MEAN NUMBER OF INCORRECT STATEMENTS IN FREE RECALL

WITH STANDARD DEVIATIONS IN BRACKETS

	NO PEER			PEER PRESENT				
	Age 7	Age 10	Mean	Age 7	Age 10	Mean	Age Means	Grand Means
NO DISCSN	0.43 (0.79)	1.43 (1.40)	0.93	0.43 (0.65)	0.57 (0.53)	0.50	7= 0.43 10= 1.00	0.72
AFTER DISCSN	0.86 (1.86)	1.14 (0.69)	1.00	1.14 (0.90)	1.14 (1.07)	1.14	7= 1.00 10= 1.14	1.07
Age Means	0.65	1.29		0.79	0.86		7= 0.72	
Grand Means	0.97			0.83			10= 1.08	0.90

Although there was hardly any direct effect of the non-witnesses spoken contributions on the number of incorrect statements in the informed peer support condition (a total of only 4 attributable errors) there still remained the possibility of some indirect effects of their spoken contributions, as identified in study 2. Once again, the children's incorrect scores in free recall were correlated with the number of conversational turns taken by the non-witnesses and the number of words the used. THe second study had shown a strong correlation between the

contribution of the non-witnesses and the error rate. In this study a similar trend of results appeared.

For the 7-year-olds the number of conversational turns taken by the non-witnesses (mean number of turns = 2.43; standard deviation = 2.57) showed a positive correlation with error statements, although unlike in study 2, this was non-significant ($r = 0.545$; d.f. = 5; $p>.05$). The correlation for numbers of words spoken by the non-witness (mean of 18.28 words; standard deviation = 15.39) and error statements was also positive, but even weaker ($r = 0.205$; d.f. = 5; $p>.05$). The MLU for the younger non-witnesses was 8.38 words (standard deviation = 8.12).

For the older subjects there were negative non-significant correlations between the participation of the non-witnesses and error statements. The correlation value for conversational turns (mean = 2.29 turns; standard deviation = 1.5) and errors was $r = -0.342$ (d.f. = 5; $p>.05$) and the correlation for spoken words (mean of 23 words; standard deviation = 21.70) and errors was $r = -0.317$ (d.f. = 5; $p>.05$). The MLU for the older non-witnesses was 8.2 words (standard deviation = 6.09).

A 3-way ANOVA with the same independent variables as the correct statements revealed that there was no effect of age ($F= 1.579$; d.f.= 1,48; $p>.05$), discussion ($F= 1.579$; d.f.= 1,48; $p>.05$) or peer presence ($F=0.253$; d.f.= 1,48; $p>.05$) on the numbers of incorrect statements. No interaction effects approached significance. The full ANOVA table is included in Appendix IIId (Table S).

8.5 Discussion

The present study has shown that the presence of an informed non-witness during an interview does have an effect on the free recall accounts provided by child witnesses. The results confirmed that the interaction between discussion and peer presence during an interview leads to an increased level of recall relative to those interviewed alone (control), those with an uninformed peer present, or those alone but after discussion. Discussion alone appears to have some effects, but these are not of the magnitude of discussion plus peer presence. Generally, the study confirms that it is possible to enhance children's free recall memory without distorting the accuracy of the account. As with the second study, this result was most apparent for the 7-year-old subjects, where the children interviewed with an informed non-witness recalled significantly more correct information than all other conditions in the same age range. For the 10-year-olds the results were less conclusive, but followed the same trend as observed with the younger children. Error rates were not affected by any of the experimental manipulations.

The lack of an age effect is also of interest. Unlike the previous studies which showed a clear age effect, the present study showed a non-significant effect of age. On average, the older children recalled just over one more item than their younger counterparts.

This study serves to confirm the findings of the second study that the presence of informed peers leads to improved recall. However, most importantly it has shown that the effect of discussion alone is not as

great. Consequently, for peer interaction, between a witness and a non-witness, to be an effective aid to recall, the person with whom the witness interacts must stay with them throughout the recall process. The presence of a peer without any degree of prior interaction between the participants has no effect on recall.

After the second study it was suggested that the presence of an informed peer makes the interview less intimidating by virtue of the fact that the child knows that someone else already knows their account and may be called upon to back them up if necessary. Whether or not the second child actually does back them up does not appear to matter. It is the very existence of this option that is of importance. This conclusion bears out the work of Sarason and his colleagues where the task performance of adults improved when assistance was made available, even though they did not actually take advantage of it.

As Sarason suggested for adults, perhaps the increase in self-confidence following the provision of effective social support, allows children to focus more on the task at hand. General observations of the children during the study bear out this conclusion. Those interviewed in the presence of an informed peer approached the task with a degree of enthusiasm and confidence not apparent in the other groups. Children interviewed alone often show a real reluctance to talk during interviews and seem only too pleased when their 'ordeal' is over. In contrast, those interviewed with informed peer support were more likely to spontaneously continue discussions with the interviewers (on topics such as the misconduct of other children), even after the interview was formally ended.

The results also serve to refute the alternative hypotheses offered at the start of this Chapter. Rehearsal alone does not lead to improved recall, at least not in the present study. If rehearsal did explain the results of the second study then the discussion only group in this study would have performed as well as the informed peer support group. However, this is not to say that rehearsal is unimportant. As will be considered in Chapter 10, there may be some difficulty in deciding whether or not during peer interaction that the witness is either indulging in a form of problem-solving discussion or rehearsal. Although these factors are almost indistinguishable in the present context, the importance of identifying what occurs during the peer interaction sessions will underly any recommendations concerning the application of these findings.

The possibility of the child's recall perspective being affected by the different organizational strategies created by talking first with a child and then an adult is also refuted. This last point had been a weak hypothesis to begin with and can now be discarded.

The lack of an age effect in recall is possibly attributable to the type of event used in this study, where instead of simply witnessing an event, the children actually participated in one. The choice of an event in which the children participated, albeit a non-stressful one, was prompted by a desire for greater face validity to the experimental design. The lack of age differences was suprising given that other studies in which children were participants have showed age effects (e.g., Goodman and Reed, 1986).

It is difficult to determine exact reasons for this result. Ceiling effects are one possibility given the fact that the number of items recalled here was generally lower than that of the previous two experiments. For example, the children with informed peer support in this study did not recall as many items as in the second study. This clearly highlights the need for a variety of stimulus materials before reaching any conclusions about children's recall comptencies.

8.6 Conclusion

This study has confirmed that the very presence of an informed non-witness peer during a recall interview does influence performance. Even though the non-witnesses do not make any great overt contribution during the interview, for example by prompting the witness, their presence is of considerable value, particularly for 7-year-olds. This finding shows that social support provided during an interview is an important variable. The most obvious interpretation of these findings can be derived from the work of Sarason (e.g., Sarason and Sarason, 1986) which showed that the offer of assistance to those low in social support resources leads to improved task performance. There are a number of similarities between the present study and Sarason's work in that it appears that it is the offer or availibility of effective support that underlies the results. This conclusion appears to hold true even though the differences between the present studies and Sarason's work are quite considerable. For example, completely different tasks (recall memory as opposed to anagram solving) and different subjects (children as opposed to adults) were used. A more detailed discussion of the findings will occur in Chapter 10.

CHAPTER 9

If Children's Recall is So Reliable, Why Don't We Rely on it?: Powerless Speech in Children's Eyewitness Statements

9.1 The Importance of Assessing Credibility

In this Chapter the eyewitness statements from the three experimental studies are analysed in further detail. In the past, children's statements have only been coded for the accuracy and innaccuracy of the statements. This tells us how much children can remember and to what extent it can be trusted, but it tells us little of the actual style of the accounts. Given that experimental evidence (e.g., Dent and Stephenson, 1979; King and Yuille, 1986; as well as the present studies) and real-life observations (e.g., Goodman, 1984a; Davies, Flin and Baxter, 1986; Jones, 1987) suggest that children's statements, in free recall at least, tend to be very accurate, it seems somewhat surprising to learn of the generally prevailing view that children do not make credible witnesses (e.g., Yarmey and Tressillian Jones, 1983; Goodman, Golding, Helgeson, Haith and Michelli, 1987). There is clearly a major discrepancy here. The key to the problem may lie not so much in what children say, but in the way they say it.

The issue here then is that of assessing the credibility of a witness. Miller and Burgoon (1982) argue that judgments of the demeanour of witnesses are central to the trial process, since the outcome is likely to hinge on assessing conflicting information claims. A number of factors may interact to shape overall perceptions of credibility. For example, a hesitant, nonfluent witness with an impeccable character is likely to be perceived as nervous or uncertain, but a witness of shady reputation who exhibits the same behaviours probably will be viewed as an unconvincing liar.

Research on language associated with credibility and deceit is not extensive (Miller and Burgoon, 1982). One of the few areas of research within the psycho-legal literature is that of powerful and powerless linguistic styles (e.g., Erickson, Lind, Johnson and O'Barr, 1978; Lind and O'Barr, 1979). The possibility of children's speech styles being characterised in terms of powerful or powerless language has been advocated on several occasions (e.g., Loftus and Goodman, 1985; Leippe and Romanczyk, 1987), but this has not yet been done.

In this Chapter, research on the credibility of children as witnesses will be reviewed. Following this there will be a discussion of powerless and powerful speech styles. Finally, the recall transcripts from the three experimental studies will be analysed for examples of powerless speech styles. Hopefully this will shed some light on the question of why adults tend to be so sceptical about children's eyewitness accounts.

9.2 Attitudes Towards Child Witnesses

There have been several recent studies that have looked at the question of how adults, and in particular, mock jurors, perceive children's eyewitness credibility. For example, in a survey study Yarmey and Tressillian Jones (1983) addressed several issues relating to eyewitness behaviour, including one question relating to children. Several different groups were questioned, these included the following: "Experts", that is, University Professors who had published articles on eyewitness testimony; legal professionals; law students; student 'jurors'; and citizen 'jurors'. The single question on children's eyewitness competency was: "If a young

child (about 8 years) is questioned by police or in court, which statement best reflects your view of the type of replies the child might give?" The response statements were: (a) The child is likely to reply accurately. (b) The child is likely to reply the way he/she thinks the questioner wants him/her to. (c) The child is unlikely to reply to the questions. (d) The child is likely to reply "I don't know" to the questions.

Yarmey and Tressillian Jones confidently assure the reader that (b) is in fact the "correct" answer. This conclusion was presumably reached from their reading of the eyewitness literature prior to 1983, which was, as shown in Chapter 1, particularly hostile towards child witnesses. Given this fact, it is not suprising to learn that the majority of "experts" (82%) also gave the "correct" answer, given that they too were relying on the same "evidence". Only one out of the sixteen "experts" polled believed the child would be accurate. However, one needs to be cautious in interpreting these values too precisely as the column of results for the "experts" is flawed. Either some "experts" gave two answers (something which happened in no other table for any population group elsewhere in the study), or there is a printing error. That is, the number of responses in the "experts" column adds up to more than 100%, in fact the total is 109%.

About half of the legal professionals agreed with the experts, but a fair number (40%) believed the child would be accurate. Similarly, about half of the law students and citizen jurors believed the child would answer the way the questioner wanted them to, but about a third of these subjects believed that the child would give accurate replies. Student jurors were

most likely to believe the child (47%), but again, many (37%) agreed with the expert view.

Support for the Yarmey and Tressillian Jones study comes from Goodman, Golding and Haith (1984), who argued that jurors typically enter the courtroom with doubts about the credibility of child witnesses. They suggest that children are likely to be seen as more inconsistent than adults, as well as less confident in their statements. Inconsistency may undermine the child's believability, especially since jurors are often instructed against heeding inconsistent statements. Children may appear inconsistent because they answer questions too literally. Goodman et al. (1984) give the example of a child who answers "no" to the question, "Were you in the man's house?," but "yes" to the question, "Were you in the man's apartment?". However, there remains the possibility that adults might make some allowances for these factors in children, thereby taking the child's evidence into account. Were an adult to display the same characteristics, this may completely undermine their credibility.

The different effects of children's and adult's statements on mock jurors decision making were illustrated by Goodman, Golding, Helgeson, Haith and Michelli (1987). In a series of studies, mock jurors were asked to rate the guilt of defendants. Goodman, Golding, Helgeson, Haith and Michelli (1987) found that even though children were rated as less credible than adults, this had no effect on the jurors' decision to convict, a finding that is rather blandly attributed by the authors to the constraints of the experimental task. Demographic data, such as sex, age, race, income,

occupation, education, religiousness and being a parent, produced no significant correlations with credibility assessments.

Ross, Miller, Ceci and Moran (1987) found similar results, namely, that the age of the witness (8, 21 or 74 years) in a videotaped trial did not influence mock jurors' decision to convict. However, unlike Goodman, Golding, Helgeson, Haith and Michelli (1987), Ross, Miller, Ceci and Moran found that subjects viewed the child witness more positively than adults on measures of truthfulness and confidence. Ross, Miller and Moran (1987) interpret this apparently contradictory finding as reflecting the different performance expectations that subjects had for each witness. That is, all witnesses gave the same testimony. It is suggested that the child was viewed as being highly competent for giving such elaborate evidence. However, the same amount of evidence from an adult appears only average. These effects are presumed to have occurred simply because of different expectations of competence depending on age.

Leippe and Romanczyk (1987) further delineated the circumstances under which the age of the witness might affect jurors' attributions of guilt. They presented mock jurors with three versions of an incident, in which the prosecution's case (regardless of the eyewitness) was either strong, ambiguous or weak. There were three ages of eyewitness, namely, 6, 10 or 30. Only in the strong case condition did the age of the eyewitness affect decisions of guilt. When the case was strong the testimony of an adult guaranteed that the defendant would be found guilty. The testimony of a child in such a case was barely different from that of a no-witness control condition. This supports the finding of Goodman, Golding, Helgeson, Haith

and Michelli (1987) who used cases in which the evidence was ambiguous. This raises the possibility that jurors may regard all eyewitness evidence, regardless of the source, as generally unreliable.

Leippe and Romanczyk also conducted another study, this time on the role of inconsistency and guilt ratings. Consistency was determined by the differences between a witness's initial statement and their courtroom testimony. As in the earlier study, the age of the witness was 6, 10 or 30-years-old. Degree of inconsistency was rated between one and five, this reflecting the number of items for which the witness gave inconsistent testimony. Only in the 6-year-old condition did the degree of inconsistency have a deleterious effect on perceptions of credibility. Inconsistent 6-year-olds were rated lower than high consistency 6-year-olds, as well as the older high inconsistency subjects. Jurors thus appear to be particularly sensitive to a young child's inconsistency and possibly take it as evidence of questionable credibility. This supports the earlier claims of Goodman et al. (1984). However, even here, there was no effect of inconsistency on ratings of guilt. This may be because the case could be viewed as ambiguous, thus bringing in the problems of case strength outlined in the first study.

Goodman, Golding, Helgeson, Haith and Michelli (1987) intuitively argue that it is likely that views of child witnesses are often more negative than views of adult witnesses. This being attributed to the fact that the average child probably exhibits many of the characteristics that lower an adult witness's credibility, such as a powerless speech style, low status and lack of confidence. However, none of these factors has yet been

experimentally studied with children, Of these factors, the one that is of most interest to the present research is that of powerful as opposed to powerless speech styles. This topic will be discussed in the next section.

9.3 Powerful and Powerless Styles of Speech

The basic principle for differentiating between powerful and powerless linguistic styles is that some words or phrases are associated with powerful persons, whereas others are associated with those who are weak (Lind and O'Barr, 1979). Here, the emphasis is on social as opposed to physical power (Giles and Powesland, 1975). An influential example of this approach to language comes from Lakoff (1975) who argued that there exists a female register of speech, a style of talking that is particularly associated with being like a powerless woman. Supposedly women are more inclined to use hedges (e.g., well), intensifiers (e.g., It really is), 'empty' adjectives (e.g., glorious, divine), and tag questions (e.g., It is, isn't it?). However, Lakoff only suggested the presence of such a speech style, it was left to others to delineate these categories more fully.

Erickson, Lind, Johnson and O'Barr (1978) found that there is a style of speech associated with socially powerful and powerless persons, but this was later shown to be regardless of gender (Lind and O'Barr, 1979). It is now more commonly argued (e.g., Berger and Bradac, 1982) that a speaker's self-perception, namely, whether or not the person feels in control of the situation, is a stronger basis for this dimension of speech style and not necessarily his or her objectively determinable social power. This implies

that a given speaker may sound powerful in one situation and powerless in another, as his or her self-perceptions vary.

Regardless of the causes of these style differences, there is evidence that in courtroom contexts at least, style is directly associated with judgments of communicator credibility (e.g., Erickson et al., 1978), although not necessarily acceptance of the communication (e.g., Lind and O'Barr, 1979). Also, the powerful style is judged as indicating a more powerful and assertive speaker than is the powerless style (Newcombe and Arnkoff, 1979).

The most important study of powerless speech in a courtroom context was that by Erickson et al. (1978) where the effects of speech style on ratings of attractiveness, credibility and acceptance of the communication were compared. Over 150 hours of courtroom speech were initially analysed, making certain patterns apparent. There were several linguistic features which appeared to vary with the social power and status of the speakers. Speakers with low social power and low status in the courtroom would tend to make frequent use of intensifiers (so, very), hedges (kinda, I think, I guess), especially formal grammar (the use of bookish grammatical forms), hesitation forms (Uh, well, you know), gestures (the use of hands and expressions such as "over there" while speaking), questioning forms (e.g., the use of rising question intonation in declarative contexts), and polite forms (sir, please, thank you). Other linguistic features characteristic of powerless speech include the proportion of final consonant clusters that were simplified (e.g., kep' for kept, jus' for just). Also, the proportion

of final unstressed words ending with *-ing* that were develarized (e.g., drivin' for driving, mornin' for morning).

These features tended to co-occur in the speech of low-power witnesses, and their frequent use constitutes what is termed as the "powerless" style of speaking. The analysis also revealed that individuals with relatively high social power in court (e.g., parole officers, physicians and other professionals) used these powerless features infrequently, speaking in a more straightforward manner which is termed "powerful".

The use of a powerful or powerless speech style might affect both the perceptions of the speaker and the influence of his or her communication. Specifically, listeners may see the use of a powerful style as reflecting high status and may tend to think favourably of such individuals. Listeners may believe that a powerful style, by virtue of its succinctness and lack of hedging, indicates that the communicator is confident about the positions stated in the communication. This may increase perceptions of the powerful speaker's credibility.

In their experimental study Erickson et al. examined the tapes of actual court trials and chose one trial in which a female witness had given her testimony in a style characterized by frequent use of powerless forms. Actors then reproduced this original testimony (changing only identifying details). A female witness powerful-style tape was also made (using the same actors) in which most of the powerless features were ommitted, but the substance of the testimony remained unchanged. Examples of each style are shown below. The questions were spoken by a male actor (playing the lawyer)

and the answers were spoken by a female actor (playing the witness). In a separate version a man played the witness.

Q. Then you went next door.
A. (Powerless): And then I went immediately next door, yes.
(Powerful): Yes.
Q. Approximately how long did you stay there before the ambulance arrived?
A. (Powerless): Oh, it seems like it was about uh, twenty minutes. Just long enough to help my friend Mrs. Davis you know, get straightened out.
(Powerful): Twenty minutes. Long enough to help get Mrs. Davis straightened out.
Q. How long have you lived in Durham?
A. (Powerless): All my life, really.
(Powerful): All my life.
Q. You're familiar with the streets?
A. (Powerless): Oh yes.
(Powerful): Yes.
Q. You know your way around?
A. (Powerless): Yes, I guess I do.
(Powerful): Yes.

(Erickson et al., 1978. p.270)

The tape used concerned the death of a person following a car crash. A key issue was whether or not the person had been alive during the ambulance journey to the hospital since the ambulance company was being sued for negligance. Statements were rated on a series of semantic differential-type scales with endpoints such as, competent-incompetent and trustworthy-not trustworthy. Other scales were used to rate how much subjects believed the witness, how convincing the witness was, how sympathetic they felt toward the witness and how qualified they felt the witness was to testify.

There was a significant main effect of speech style on credibility, that is, powerful speakers were seen as more credible than powerless speakers. Further, the effect of speech style on perceived credibility was

greater when the witness and the subject were of the same sex than when they were of the opposite sex.

Lind and O'Barr (1979) also found that speech style influenced ratings of credibility, for both men and women. However, unlike Erickson et al., they found only a marginal effect of speech style on the acceptance of the communication. Erickson et al. had found that speech style influenced the amount of negligance damages that subjects awarded (higher awards with powerful speech).

Loftus and Goodman (1985) suggest that these findings imply that lawyers should advise their witnesses to avoid using these undesirable speech characteristics in the courtroom. They also point out the problem that statements beginning with hedges such as "I think" or "I guess" may call for objection under the rules of evidence as indicative of speculative or incompetent testimony, that is, testimony that is not based on the personal knowledge of the witness.

9.4 Powerless Speech Styles in the Experimental Studies

When transcribing the tapes of the free recall interviews in the three experimental studies, it was immediately apparent that the statements were characterised by the frequent use of powerless speech. Therefore, it seemed of some practical interest to determine the exact extent to which children use powerless speech. The relative effects of experimental condition on powerless speech could also be determined. It was initially predicted that there would be an inverse relationship between the amount of recall and the

levels of powerless speech. That is, as recall increased, levels of powerless speech would decline. This would presumably occur if the subjects in the experimental conditions did in fact have greater levels of perceived control (Berger and Bradac, 1982) than the subjects not in the experimental conditions.

The interviews from the first three studies had to be carefully re-analysed as the original transcripts did not include hesitations such as "umm", "err" etc. All complete words, including hedges (e.g., "I think") had been transcribed originally. The addition of hesitations to the transcripts was straightforward. However, to ensure the accuracy of the coding, two people jointly listened to the tapes and hesitations were only marked down when there was joint agreement.

The transcripts were analysed for instances of 7 types of powerless speech. These categories were derived from Erickson et al. (1978).

1. Hesitation - e.g., uh, well, you know, err, umm.
2. Intensifiers - e.g., really, oh yes, surely, definitely.
3. Hedges - e.g., kinda, I think, I guess, sort of.
4. Tag questions - e.g., isn't it? didn't he?
5. Final consonant clusters - e.g., kep' (for kept), writ' (for write).
6. -ing develarized - e.g., goin' (for going), lookin' (for looking).
7. Over-politeness - e.g., sir, please.

The existing literature on powerless speech, though explicit in defining each category, left unanswered the question of how to actually

score a recall protocol for such speech. Consequently, the scoring system outlined below was adopted as a fair means of assessing powerless speech.

When the children used two or more examples of the same style of powerless speech within a single sentence or construction, as in, "He had, umm, err, black hair" then this was counted as only one example of hestitancy in speech. The sentence "He had umm, black err hair" was scored as two separate examples of hestitancy, since the child first hestitates in saying something was black, and hesitates again when saying that it was the actor's hair that was black. When different types of powerless speech were used within an utterance, as in, "I think he had, umm, black hair", then this was scored as one example of hestitancy and one of hedging.

9.5 Results

The most frequently identified form of powerless speech was hesitation (71% of all powerless speech), followed by hedging (25%). There were several examples of final consonant clusters and tag questions, but only one use of an intensifier. On no occasion did a child substitute the ending -in' for -ing, which seems surprising, and unless one considers this as over-politeness, there were no cases of overly-polite language.

In this section the mean numbers of examples of powerless speech utterances (all categories) in each experimental study are presented. It should be pointed out that the children's use of powerless speech did not seem to reflect the recalling of correct or incorrect information. That is, powerless speech was just as likely to be used when making a correct

statement as when making an incorrect one. This immediately suggests that the use of powerless speech by children is not an index of confidence in a particular statement.

Table 21 shows the mean numbers of powerless speech utterances in the first experiment (n = 10 per cell). Means in all tables are rounded to two decimal places. Standard deviations, also rounded to two decimal places, are shown in brackets.

It was interesting to note that there was a clear increase in the amount of powerless speech with age. The older subjects gave nearly twice as many examples of powerless speech as the 7-year-olds. Differences between the experimental groups were only slight.

Table 21: Powerless Speech in Study 1

MEAN NUMBER OF POWERLESS SPEECH UTTERANCES IN FREE RECALL WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone	Witness with Social Support	Two Witnesses	Means
Age 7	2.10 (0.99)	2.20 (2.20)	2.50 (1.51)	2.27
Age 10	4.00 (2.49)	3.60 (1.96)	4.20 (2.78)	3.93
Means	3.05	2.90	3.35	3.10

It was immediately apparent from the children's recall protocols that powerless speech was a characteristic present in almost all of the children. That is, even those who recalled large amounts of information used powerless speech. To allow for the possibility that length of utterance (number of correct and incorrect statements combined) was a predictor of powerless speech, this variable was included in the subsequent statistical analyses as a covariate.

A 2-way analysis of covariance (ANOCOV) was used to examine the powerless speech in study 1 with the variables of age (2 levels) and experimental group (3 levels). Number of statements in recall, both correct and incorrect, was the covariate. The only significant finding was the main effect of age on powerless speech ($F= 5.826$; d.f. = 1, 53; $p<.05$). Length of statements was only signficant at $p<.1$ ($F= 2.9$; d.f. = 1, 53; $p>.05$). Experimental group had no effect on powerless speech ($F= 0.393$; d.f. = 2, 53; $p>.05$). There was no interaction effect ($F= 0.9$; d.f. = 2, 53; $p>.05$). The full ANOCOV table is included in Appendix IV (Table T).

Table 22 shows the mean numbers of powerless speech utterances in the second experiment (n = 9 per cell).

As in Table 21, Table 22 shows an apparent age effect on the mean number of powerless speech utterances. However, there is also a sizeable effect of experimental group here that mirrors the free recall results shown in Table 5. The difference between the youngest control group and their experimental counterpart is very noticeable. In fact, the experimental group gave more than twice as many examples of powerless

speech as the control subjects. The obvious parallel between this finding and the free recall results cannot easily be ignored. The coincidence is quite startling, suggesting the possibility of some direct link between powerless speech and free recall.

Table 22: Powerless Speech in Study 2

MEAN NUMBER OF POWERLESS SPEECH UTTERANCES IN FREE RECALL WITH STANDARD DEVIATIONS IN BRACKETS

	One Child Alone	Child with Informed Peer Present	Means
Age 7	2.33 (3.04)	5.11 (2.52)	3.72
Age 10	4.11 (2.57)	5.33 (2.71)	4.72
Means	3.22	5.22	4.22

The scores of the control group subjects in Tables 21 and 22 are remarkably similar for both age groups, which, given that similar events were used, suggests some degree of reliability in the findings.

Once again, the use of powerless speech was analysed using a 2-way ANOCOV with length of statement as the covariate. Here there was a strong effect of the covariate. Length of utterance was strongly related to powerless speech ($F= 11.411$; d.f. = 1, 53; $p<.005$). There was no effect of age ($F= .048$; d.f. = 1,31; $p>.05$) or experimental group ($F= 1,31$; d.f. =

1,31; p>.05). There was no interaction effect (F= 0.148; d.f. = 1,31; p>.05). The full ANOCOV table is included in Appendix IV (Table U).

Table 23 shows the mean numbers of powerless speech utterances in the third experiment (n = 7 per cell). It should be noted here that the standard deviations in this table fluctuate more than in either of the previous tables.

Table 23: Powerless Speech in Study 3

MEAN NUMBER OF POWERLESS SPEECH UTTERANCES IN FREE RECALL

WITH STANDARD DEVIATIONS IN BRACKETS

	NO PEER			PEER PRESENT				
	Age 7	Age 10	Mean	Age 7	Age 10	Mean	Age Means	Grand Means
NO DISCSN	2.29 (2.06)	3.86 (4.45)	3.08	3.29 (2.69)	2.71 (1.80)	3.00	7= 2.79 10= 3.29	3.04
AFTER DISCSN	2.57 (3.15)	5.43 (2.64)	4.00	6.86 (4.45)	4.86 (3.02)	5.86	7= 4.72 10= 5.15	4.94
Age Means	2.43	4.65		5.08	3.79		7= 3.76	
Grand Means	3.54			4.43			10= 4.22	3.99

The age effects observed in the previous tables have only partially been repeated here. The exception being that the younger children in the peer present conditions have given higher levels of powerless speech. In the no peer conditions the familiar age trends are once again evident. Across the dimensions of discussion and no discussion, increases with age are observed. The grand means show a greater effect of discussion than peer presence.

In Table 23 we see that the scores of the control group have once again remained consistent with the previous studies. However, there has been some fluctuation in both of the experimental groups repeated from the earlier studies, namely, the peer present - no discussion group and the peer present group in study 1; as well as the peer present - after discussion group which parallels the experimental group in study 2.

The use of powerless speech in study 3 was analysed using a 3-way ANOCOV, with the variables of age, discussion and peer presence. Length of statement was the covariate.

As in the second study the covariate showed a strong relationship with powerless speech ($F= 18.412$; d.f. = 1, 47; $p<.001$). There was no effect of age ($F= 0.015$; d.f. = 1,47; $p>.05$), discussion ($F= 0.397$; d.f. = 1,47; $p>.05$) or peer presence ($F= 0.421$; d.f. = 1,47; $p>.05$). There were no interaction effects (all comparisons $p>.05$). The full ANOCOV table is included in Appendix IV (Table V).

9.6 Discussion

The first and possibly most significant finding in the present analyses concerns the overall levels of powerless speech used by the children. If we just look at the children in the control groups of each experiment, the three mean numbers of powerless speech utterances are 3.05, 3.22 and 3.08 accordingly. That is, on average, each child used powerless speech at least three times, which, if one considers the actual length of their statements, seems quite high. The implications that this has for assessing credibility are discussed later.

The statistical analyses showed that there was a strong link between powerless speech and the length of a statement. This confirmed the initial observation that powerless speech was present even in those children who gave detailed descriptions of the staged event. This suggests that powerless speech really is an inherent factor of children's eyewitness accounts. If one succeeds in making them say more about a given topic, then one should expect a corresponding rise in the numbers of powerless utterances. The relationship appears to be fairly straightforward in that it appears as if a set proportion of children's speech will be accompanied by powerless utterances. This finding was counter to the original prediction that peer support would lead to a decrease in powerless speech.

This leads to the possibility that, for children at least, powerless speech might not vary as the child's self perceptions change, as has been suggested though not proved for adults (Berger and Bradac, 1982). That is, no matter how confident the child, they will always use powerless speech by

virtue of the fact that they are always in a position of lower social power when being questioned by an adult. This over-rides confidence levels. It should be pointed out here that the use of powerless speech may be only one predictor of a person's confidence levels, but the experimental evidence for adults suggests that it is a significant factor that others use when assessing a person's degree of confidence.

Children's use of powerless speech has implications for ratings of credibility. Earlier it was suggested that the reason why children's statements are treated so sceptically lies more in the way they give their evidence rather than in what they say. Interviewers are generally quite suspicious of children's statements, as shown by the use of repeated questioning (see Chapter 3). The child's continual use of hesitations and hedges may be the cause of this cynicism, or at least a part of it. If powerless language makes interviewers suspicious of a child's credibility, we can only assume that jurors will behave in a similar manner. However, this need not be so since children are likely to be interviewed several times before ever reaching a courtroom, thus giving them time to rehearse their accounts and thereby eliminate some of their hesitations. Obviously, rehearsal would be of only minimal help during direct questioning by an attorney.

This picture is complicated by the notion that eliminating powerless speech may actually be undesirable. That is, although it seems somewhat contradictory, a child who is nervous may be seen as a non-credible witness, whilst another child who has less uncertainty may also be viewed as non-credible because they have been over-rehearsed, suggesting that

their testimony has been "contaminated" by adults. The recommendation by Loftus and Goodman (1985) that lawyers should advise their adult clients to avoid using hedging may thus be counter-productive when applied to children.

There is clearly a need for further research to determine if jurors will disregard powerless speech in the way that inconsistent statements were disregarded (except for very young children) in the study by Leippe and Romanczyk (1987). The design for a study to explore these issues is discussed in Chapter 11. In fact, the whole issue of powerless speech in children is worthy of further study. It would be of some value to know under which conditions children do not use powerless speech. It is certain that children do not always use powerless speech, as any adult who has worked with children will report. The present study has shown that in an eyewitness context the presence of a friend (informed or otherwise) does not lower levels of powerless speech. However, in other circumstances peer presence may be 'beneficial', that is, children are perhaps less likely to be hesistant in talking with a peer than an adult.

9.7 Conclusion

This Chapter has shown that in all three of the experimental studies the children's free recall statements were characterised by the use of powerless speech. The experimental manipulation of informed social support did not reduce the number of powerless speech utterances. This suggests that even though children can be 'encouraged' to say more about an event through the provision of informed social support, this does not appear to

affect the confidence with which they give their account, at least in as much as confidence can be measured by the use of powerless speech. Powerless speech is only one possible means of assessing a person's confidence, but it is clearly an important one in influencing perceptions of confidence, and thus competence, by independent observers.

It is suggested that powerless speech is an inherent characteristic of children's speech, at least when they are communicating information to an adult. It would be interesting to know if adults attach as much importance to powerless speech in children as they do in adults. This may in part answer the question of why children's testimony is viewed as so unreliable, even though objective measures of competence, such as the numbers of correct to incorrect statements, suggests that children are sufficiently competent to act as witnesses.

CHAPTER 10

General Discussion

10.1 Summary of Main Findings

This thesis began with the premise that children's eyewitness competencies have been unfairly portrayed in the experimental literature, particularly with regard to their ability to spontaneously provide detailed descriptions of witnessed events. Children's poor recall may in part be explained by the inadequate attention that has hitherto been paid to experimental designs, the most serious aspect of which appeared to be the extent to which children are stressed during interviews. It was originally proposed that the provision of social support would reduce anxiety and thus lead to improvements in free recall memory. The one possible danger in the use of social support centred on whether or not the presence of a support person constituted a source of suggestibility that would undermine the validity of the information obtained.

The first experimental study looked at the effects of interviewing children in the presence of a non-witness peer, as well as the effectiveness of dyadic recall. This study showed that dyads produce more correct information than individuals, particularly in the category of action statements. The witnesses in the social support condition fared no better than the control children who were interviewed alone, but quite significantly, they did no worse. The presence of another child did not in any way undermine the length or quality of the account.

The apparent lack of impact on the part of the social support condition was interpreted in terms of the lack of relevant similiarity between the witness and non-witness. The witness was not able to derive support from

the dissimilar non-witness, nor was the non-witness in a position to provide support

In the second study the witness and non-witness discussed the staged event prior to the recall interview. This resulted in large increases in the amount of information recalled, particularly from the 7-year-old subjects, with no detriment to accuracy. The basic assumption of the thesis, that children can recall more than they will spontaneously do so, was thus confirmed. The results for the 4 and 10-year-old subjects was in the same direction as for the 7-year-olds, but were not quite as strong.

The non-witnesses in the second study did not offer a great deal of practical assistance to the witnesses, for example by offering prompts, during the recall interview itself. Their spoken contributions did, however, show an interesting positive correlation with the number of incorrect statements. The superior recall of the children in the experimental group could be interpreted in terms of either the support derived from the discussion period prior to recall, or from the very presence of the informed peer during the interview. There was also the additional posibility that the discussion phase may have acted as a form of rehearsal for the witnesses.

In the third study the variables of discussion and social support were examined in a design that showed their independent and combined effects. This study largely replicated the results of the previous two studies, except for the absence of any age effects on recall. In the first two studies there were clear differences in recall between the age groups. The

most significant finding was that prior discussion alone had only slight effects on recall, mainly for the 10-year-old subjects. The presence of discussion combined with peer presence led to increased free recall without affecting accuracy. This finding confirmed that it was the presence of the informed peer during the recall interview that accounted for the improvements in free recall demonstrated in the second study.

The three experimental studies consistently showed that children's eyewitness descriptions of live events were very accurate. About 90% of all statements, showing only minimal variation by age or experimental group, were classed as correct. The majority of error statements were concerned with physical descriptions. The most frequent errors concerned the colour of the actor's trousers and his hair colour. The general reliability of the children's free recall statements echoes the findings of many other eyewitness studies involving children. Therefore, it seems somewhat suprising to learn that attitudes towards child witnesses, from both mock jurors and some researchers, are very unfavourable. Chapter 9 raised the possibility that this apparent paradox may be explained by looking not so much at what children say, but the way they say it. The recall transcripts from the three studies were analysed for examples of powerless speech. It was found that powerless speech was present in almost all the children's descriptions of the event, even in the longer more detailed accounts. Powerless speech appears to be an inherent characteristic of children's speech. Since powerless speech generally lowers the speaker's credibility (in adults at least) this may explain why the reliable recall of children is treated with such suspicion.

The results of the thesis will be discussed in three sections. First, the effects of social support on recall, in which the mechanism by which informed peer social support affects recall will be discussed. Second, the effects of age on recall memory will be considered. Third, criticisms of the studies will be put forward. The implications of the thesis will be discussed in Chapter 11.

10.2 The Effects of Peer Social Support on Free Recall Memory

The present studies have shown that the presence of a peer during a test of free recall memory does not necessarily lead to improved recall. For support to be effective the helper must have interacted with the witness prior to testing. In the present studies this interaction has focused on the transmission of information about the witnessed event between the two children. In this section some possible reasons why the presence of an informed non-witness is beneficial will be put forward.

The most obvious way in which the presence of an informed non-witness could lead to improved recall is that the support person provides real help to the witness in the form of prompts or reminders. However, even though the non-witnesses were in a position to help their peers they rarely ever did so. In studies 2 and 3 the non-witnesses said very little. Their oral contribution could account for only a small proportion of the improved recall of the children in the informed peer support conditions.

Even though the overall effect of the non-witnesses' direct oral contributions was quite small, resulting in only a handful of correct and

incorrect statements, it is interesting to attempt to characterise the ways in which the children interacted during the recall interview. This is particularly important given the prevailing attitude that the presence of a support person constitutes a source of suggestibility. Even though the database here is quite small three interesting interaction patterns emerged.

1. Data-Based Prompting

The first form of prompting occurs when the non-witness reminds the witness of something that had been said in the discussion period prior to recall. The following example (Example 4) is taken from study 2, in which two 7-year-old boys were talking. Here the witness claims to have recalled as much as he can, but following a reminder from the non-witness he recalls the name of the boy the actor had said he was looking for.

Example 4

Witness: "I can't remember anything else."

Non-witness: "Was he looking for?"

Witness: "Who was he looking for? Keith Roberts. Can't remember anything else."

Example 5 below features two 10-year-old boys from study 2 which also illustrates data-based prompting.

Example 5

Non-witness: "You said he had glasses."

Witness: "I think, yeah, I think he had glasses."

Examples 4 and 5 can be classified as data-based prompting. That is, they stem directly from the interaction between the children prior to recall. Both examples resulted in the additional recall of correct information. In Example 4 the non-witness was credited with saying the actor was looking for someone, the witness being credited with the name of that person. In Example 5 the non-witness was credited with introducing the idea of the glasses. These examples both feature accurate prompting in which the non-witnesses are restating the earlier words of the witnesses. However, not all such prompting was reliable. On some occasions the non-witness tried data-based prompting with incorrect information, as in the example below (Example 6) which features 7-year-old girls from study 2.

Example 6

Non-witness: "You said it was Keith Roberts' car."

Witness: "No I didn't."

In Example 6 the inaccurate prompt of the non-witness is flatly denied by the witness. It is very difficult to decide whether such incorrect prompting stems from either the misinterpretations of the non-witness, or actually from the witness but which upon later reflection he or she denies having said. Data-based prompting is the most obvious means in which the non-witness can assist the witness during recall, but overall this form of interaction was quite scarce.

2. Speculative Questions

The second way in which the children interacted was when the non-witness asked the witness speculative questions. These questions propose

the existence of certain items during the staged event that had almost certainly not been mentioned during the prior discussion. Here the non-witness is asking a question that could just as easily have been asked by the interviewer, since it assumes no prior knowledge of the event. Example 7 below features two 7-year-old boys from study 2.

Example 7

Non-witness: "Did he have a moustache or something?"

Witness: "No. he didn't have a moustache, didn't have a beard either."

Non-witness: "Blue eyes?"

Witness: "I didn't see the colour of his eyes cos' he was away from me."

Speculative questions most commonly centred on physical descriptions of the actor. This may be because the non-witness knows relatively little of the staged event and thus finds it difficult to ask suitable event based questions. However, each child could reasonably ask questions about the actor's appearance given their general knowledge base concerning appearance. Overall, there were only a few speculative questions and they rarely contributed to the witnesses' recall scores.

3. Help Seeking by the Witness

The third way in which the children interacted was when the witness asked the non-witness for assistance in the form of prompts. Example 8 below involving two 7-year-old boys from study 3 ilustrates this category.

Example 8

Witness: "And what else did he have that I told you?"

Non-witness: "White shirt?"

Witness: "No. He asked us to talk into the tape recorder our names."

Here, the witness asks the non-witness for a prompt. It is interesting to note that the witness rejects the suggestion of the white shirt and then recalls details concerning the tape recorder. The request for help is probably a form of delaying tactic on the part of the witness. By diverting the interviewer's attention towards the non-witness this gives the child time to search his memory for other details. Later, in the same interview the witness again requested help (Example 9).

Example 9

Witness: "Have I forgotten anything?"

Non-witness: "I can't remember."

Witness: "Well you should know. I only just told you. I think he had a moustache."

Non-witness: "Sort of leather jacket."

Witness: "He had a black jacket and that's all I told you."

Non-witness: "That's all I heard."

Example 9 is interesting in that the witness again appears to use the request for help as a delaying tactic and also because the witness appears to be annoyed with the non-witness for failing to help. This is further reflected by the emphasis (shown underlined) with which the witness

corrected the (incorrect) proposal that the actor had been wearing a leather jacket.

Overall, these three forms of interaction did not have the disasterous effect on recall that those opposed to social support might have expected. Generally the non-witnesses said very little and when they did speak this did not distract the witnesses or corrupt their accounts to any great extent. However, it should be remembered that in both studies 2 and 3 the extent to which the non-witnesses particpated during the interviews correlated positively with incorrect statements. This relationship was particularly strong for the 7-year-olds in the second study. It seems that even though non-witnesses do not directly introduce erroneous ideas into recall, their general contributions appear to be related to the number of errors that are made. The correlational method is a weak means of illustrating this relationship since it does not explain causality, but it does serve as timely warning. It appears that the greater the participation of the non-witnesses then the weaker the account. It was interesting that in both studies 2 and 3 there were negative (but non-significant) correlations between the contributions of the non-witnesses and correct recall for the 10-year-old subjects. It may be that the older subjects find the participation of their peers unwelcome, although this point is purely speculative.

The witnesses were quite resistant to the erroneous suggestions directly made by the non-witnesses. This is probably because these suggestions were undermined by the poor source credibility of the message, which as was shown in Chapter 3, can influence the acceptance of suggestive

messages. The misleading prompts of the non-witnesses are weakened by both an absence of any difference in social status (e.g., Ceci, Ross and Toglia, 1987) as well as low expert power (e.g., Smith and Ellsworth, 1987). That is, since the non-witnesses' knowledge was derived entirely from the witnesses, any misleading prompts would be quite easily identified and then dismissed, as is shown in Examples 6 and 7.

The present studies are almost certainly unique in that the credibility of the misleading information is almost as low as is theoretically possible. That is, the witness enjoys at least an equivalent or more likely a superior social status to the source of the misleading information, namely the non-witness, by virtue of the fact that it is they who are the focus of the interviewer's interest. In terms of knowledge of the event, or expert power, the witness is even more obviously in a superior position. The source credibility of the misleading information is exceptionally low and establishes a new precedent in suggestibility research, namely the possible acceptance of misleading information from a low credibility source by a high credibility individual.

This situation may explain why the oral contributions of the non-witnesses had so little effect on recall. Further, it may explain why the non-witnesses were so reticent about making a contribution. First, they may have felt the interviewer was not interested in their contribution, despite the clear instructions designed to encourage their participation. Second, they may have felt that since they knew very little about the event that any contribution they could make would be of little value. The issues raised here will be returned to in Chapter 11 where possible ways of

experimentally testing the effects of low credibility suggestions will be discussed.

Although the contribution of the informed non-witnesses was more marked than the input of the uninformed non-witnesses who rarely said anything (studies 1 and 3), the use of prompts does not explain the present findings concerning informed peer support. Instead, it appears that it is the very presence of the informed peer that 'encourages' the witness to describe the event more fully. This issue will be discussed next.

The results of the present studies can best be explained in relation to the experimental studies of social support by Costanza et al. (1988) and Sarason (e.g., Sarason and Sarason, 1986). Costanza et al. showed how problem solving discussion prior to testing lowered ratings of anxiety and had effects on subsequent behaviour, whilst Sarason emphasised the importance of the availability of social support during the stressful situation itself. These explanations centre on the premise that the interview situation is inherently stressful and that the children are likely to be feeling anxious prior to and/or during testing.

The discussion period in the second and third studies appears somewhat similar to the problem-solving discussions advocated by Costanza et al.. Even though the interaction between the witness and non-witness was not under the direct control of the experimenter there is no reason to believe that the children were doing anything other than what they were asked to do, namely to discuss the target event. The interaction part of the study was not under the control of the experimenter in that the children could

have used this moment of isolation to discuss almost anything. However, observations of the children immediately after the instructions had been been conveyed and again when the interviewer returned to check on their progress consistently confirmed that the children were discussing the task at hand.

This problem-centred interaction may have had the effect of reducing anxiety prior to testing. However, as was shown in study 3, if this is the case these effects appear to be quite short term, given that the performance of the discussion only children did not match that of the discussion plus peer presence children. What is clear is that if the non-witness peer with whom the witness had interacted accompanied them during the interview then this led to improved recall. This was not due to the overt contribution of the non-witnesses, nor was it due to the simple presence of another child. In both studies 1 and 3 the presence of an uninformed peer had no effect on recall.

As shown in study 3, it is the interaction between discussion and peer presence that accounts for the present findings. This may be interpreted in one of two ways. First, the discussion phase reduces anxiety, at least in the short term. However, when the child is isolated again anxiety returns. Anxiety levels may simply return to their previous levels, or they may be altered. However, if the non-witness should stay with the witness throughout the interview period then this may result in anxiety levels staying low. The presence of the informed non-witness being a second source of anxiety reduction, or at least preventing anxiety from returning.

The second possibility is that prior discussion does not lower stress, or if it does, its effects are only minimal. Instead, the presence of the informed peer reduces stress during the interview itself. This places the burden of the stressful experience during the interview itself. In some ways this appears quite likely given that it is probably the presence of the adult interrogator that constitutes the most important source of stress, rather than the task itself. The same interview carried out by children would probably be far less stressful. During the discussion phase of the study, even though the children are participating in the adult's task, the adult is not present, this may delay the stressful nature of participation.

It may be that discussion does reduce anxiety and subsequent isolation increases it again, but this seems less likely than the hypothesis that the bulk of the effects of peer presence occur during the interview itself. The reasons for this assumption will be discussed next.

It is suggested that the presence of an informed peer makes the interview less intimidating by virtue of the fact that the child knows that someone else already knows their account and may be called upon to back them up if necessary. Whether or not the second child actually does support them does not appear to matter. It is the very existence of this option that is of importance, as in Sarason's studies.

Chapter 4 showed that children do appear to be stressed during interviews (e.g., Dent, 1977) and that they often report a desire to be with someone (e.g., Charnley, 1987). Putting this observation into Sarason's

terms, children are low in social support resources. Sarason claimed that administered support was helpful only to those whose self-evaluated support was low. Unlike adults, one may reasonably assume that this generalization applies to the majority of children.

For those low in social support, stressful situations may be a source of inhibiting cognitive interference (Sarason and Sarason, 1986). That is, confidence is low and subjects become self-preoccupied as they worry over their ability to complete the designated task. When stress is reduced then subjects are able to focus more readily on task solutions. In the present studies the most important part of the task is the recall interview. This is determined both by the presence of the adult interviewer and possibly the use of a tape recorder. The children are likely to understand that the interview is the part of the task that is being evaluated, not the prior discussion.

In the present studies the availability of a source of help, namely the informed non-witnesses may have reduced anxiety. The children knew that help was readily at hand. An uninformed non-witness is not seen as a source of practical help in that they can do nothing to affect the interview process. Uninformed non-witnesses fail on the crucial dimension of perceived similarity. Thoits (1986) argued that effective support is most likely to come from socially similar others who have faced or are facing the same stressors. The present studies suggest that the degree of perceived similiarity need not be particularly strong. That is, the support person does need not to be undergoing exactly the same stressors, they simply need to be undergoing similar stressors. For example, in the present

studies it was made clear that the witnesses were being asked to describe the event and that the non-witnesses were mainly there as assistants. This placed the burden of the task demands firmly with the witnesses. Nevertheless, it appears that the presence of another child with whom the witness could collaborate constitutes a source of similar support.

The situational similarity between the children does appear to enhance the likelihood of the perception and reception of "empathic understanding" as Thoits suggested. Only when the non-witnesses were informed did they offer help, or did the witnesses seek help. Witnesses did not in any way seek help from uninformed peers in either study 1 or 3.

As Coates and Wortman (1980) suggested, it may be that attempted assistance from dissimilar others is seen as coercive and is thus rejected. This may be reflected in the negative (but non-significant) correlations between the contributions of the non-witnesses (as measured by conversational turns and words spoken) and correct statements in free recall from the older subjects in studies 2 and 3. The provision of unwanted assistance may explain the 'casual' nature with which the witnesses and non-witnesses interacted during the interviews. Although the witnesses did occasionaly make use of their peers they were not particularly receptive to their contributions. That is, prompts were infrequently accepted, while others were quickly rejected or ignored. The witness probably sees the non-witness's role as that of helper, not partner. Consequently, their contributions are only treated in a cursory manner, only rarely eliciting the full attention of the witness. This contrasts with the observations of pairs of witnesses made in study 1.

Dyadic recall between equal partners appears to feature far more negotiation than is evident between witnesses and non-witnesses. In the social support conditions the superior status of the witness allows them to dominate the recall interview without fear of contradiction. Statements made by pairs of witnesses are seemingly more open to scrutiny and re-examination.

It is also possible that this sense of superiority, or mastery, over the non-witness may increase the witness's confidence levels. Every statement made by the witness then takes on the double value of displaying competence to both the adult interrogator as well as the peer. This may be a secondary effect of peer social support in that the child witness uses the presence of the peer as an additional reason to search memory even more carefully. If the child is using the presence of the peer as an additional reason for attempting recall, it seems odd that there was no effect of uninformed peer presence. However, the presence of an informed non-witness might make a better stimulus for additional recall because they would be more likely to appreciate the quality of the witness's account. Zimmerman and Bauer (1956) suggested that communicating to an audience about which one has set ideas influences recall.

In Zimmerman and Bauer's terms, an informed non-witness would be a congruent audience. Informed non-witnesses are likely to agree with the statements presented whereas uninformed non-witnesses cannot realistically make any evaluation of the witnesses' accounts. Uninformed non-witnesses are a neutral audience in these terms, their evaluations do not matter since they have no interest in the recall account. Peer dissaproval, as

described by Harari and McDavid (1969), does not arise in the present designs. This form of recall perspective explanation emphasises the witnesses' desire to present themselves in the best possible light to their evaluating peers. It may be that the contributions of the non-witnesses during free recall take on an added significance here. Even though the informed non-witnesses comments did not directly lead to much additional information being recalled, each comment may have been interpreted by the witness as an incentive to recall more information. It is possible that just by taking an interest in the witnesses' accounts, informed witnesses may have encouraged recall. This explanation assumes that children only want to look good before their peers when the peer has some form of yardstick for assessing their performance.

This interpretation is to some extent undermined by the correlations between the contributions of the non-witnesses and performance in free recall in studies 2 and 3. The spoken contributions of the non-witnesses may reasonably be taken as an index of their interest in the recall interviews. Interestingly, for the older subjects in both studies the greater participation of the non-witnesses showed an inverse relationship with correct free recall. The correlations looked at the more general statements made by the non-witnesses since their direct contributions, as measured by the number of items they introduced into recall, were consistently low. As suggested earlier, it may be that the older subjects resent the general participation of their peers during the interview. For the younger subjects the results are more contradictory. In study 2 the contributions of the non-witnesses correlated positively with recall, while

in study 3 the relationship was negative, however, it should be pointed out that each correlation was non-significant.

It may be that even though the witnesses do appreciate the interest of their peers during free recall, this interest should not be too strong, or perhaps not vocal. This suggestion is based on scant evidence but it raises some interesting questions concerning the contribution of the non-witnesses during recall. Given that the non-witnesses have little direct effect on recall through the use of prompts, it may be that their oral contributions should be restricted completely. That is, it may be that their very presence is enough to enhance recall, obvious demonstrations of their interest through spoken comments, may be unnecessary. Spoken comments from non-witnesses may prove to be a distractor and should, therefore, be constrained.

In summary, the present studies have shown that the presence of informed non-witnesses during interviews leads to improved free recall. This appears to be due to the very presence of such peers rather than the interaction prior to recall, or the contribution of the non-witnesses during the interview itself. The most likely explanation of this finding is that the presence of the informed peer lessens the stressful nature of being interviewed. That is, having peer social support decreases anxiety concerning task performance and increases confidence levels. This conclusion appears valid even though it rests upon two elementary assumptions that were not directly tested here. These assumptions are:

1. The children were stressed during the recall interviews. There is ample empirical support that children are stressed during experimental interviews (e.g., Dent, 1977; Marin et al., 1979) and there is no reason to believe that the present interviews are any different in this respect. However, it is not certain that the children were actually stressed during this study since there was no direct measure of stress or anxiety. The degree of stress was probably quite low given that the demands of the task were not especially demanding.

2. Informed peer social support reduced stress. Although social support clearly did reduce stress in studies such as Costanza et al., as indicated by several mood measures, it is not certain that the presence of peers really did reduce stress here. Again, there was no measure of stress either prior to or during recall from which this inference can be made.

These factors have had to be assumed in the present studies. This undoubtedly reduces the validity of the findings, as will be discussed later in this Chapter. Despite these limitations the results leave very little room for any alternative interpretations. The fact is that the witnesses with informed peer support did recall far more than the control children. The probable reduction in anxiety following effective social support appears to be quite plausible given children's desire for social support during interviews (e.g., Goodman et al., 1988) and the benefits arising from reduced stress (e.g., Dent, 1977). An alternative explanation is that the presence of an informed peer increases confidence levels, without necessarily affecting stress levels, although this does seem slightly contradictory given that low confidence levels probably stem from

the stressful nature of the interview. As a further possibility, the presence of an informed non-witness might represent a potent source of evaluation of the witness's performance. That is, they are a supportive audience (Zimmerman and Bauer, 1956), although the general indications are that the overt "support" offered by the non-witnesses is not entirely welcome.

10.3 Age Effects on Recall Memory

It was reported in Chapter 2 that age related increases in free recall memory had been found on many occasions (e.g., Marin et al., 1979; King and Yuille, 1986; Goodman and Reed, 1986). Therefore, it was not suprising to find that in studies 1 and 2 that the older subjects consistently recalled more than the younger subjects. In both studies this finding held true across all experimental conditions, although in the second study, the experimental manipulation did reduce the size of the age related differences. Further, in the second study, the 7-year-old subjects interviewed with informed peer support recalled slightly more correct information than the 10-year-old control group children.

The second study was taken as evidence that children's poor recall during interviews may be determined by the way the interview is conducted. That is, children know far more about an incident than they will spontaneously report, children's exceptionally poor recall being attributable more to problems at output rather than input, thus supporting the decoding deficit hypothesis.

The overall pattern of age effects became slightly more complex after the third study which found no significant effect of age on recall. In this section the reasons for this seemingly contradictory finding will be discussed.

The key difference between the last study and its predecessors was that the children actually interacted with the adult stranger. They talked with him, telling him their names and moved about the room under his directions. In the first two studies the children had simply seen the man interacting with their teacher, his interaction with the class (asking if they had seen someone) was impersonal, particularly since it was the teachers who actually answered this question.

The methodology in the third study was chosen to vary the type of event used in the present research and to see if there were any differences between witnessing an event or participating in it. The witness-bystander distinction is a common one in eyewitness research (e.g., Hosch and Cooper, 1982), although most research has focussed on its relevance to adults rather than children. The event used in the third study was clearly not comparable to the conditions a victim of a crime would experience. The event was emotionally neutral, to avoid ethical problems, and the children witnessed it in groups of four. This last point was necessary for practical reasons as discussed in section 8.2.

Despite these apparent limitations the third study still produced some interesting findings concerning age effects on recall (see Table 19). The overall differences in correct recall between the two age groups averaged

at about one additional piece of information recalled by the older subjects, a non-significant difference.

The most likely interpretation of this finding is that the greater personal interest evoked by interacting with the man led to superior encoding and thus greater recall. This would support the observations of Sommerville et al. (1983), originally described in section 2.6, concerning high interest tasks being remembered better than low interest tasks. Sommerville et al. reported that for high interest tasks age differences in recall were eliminated. Alternatively, it may be that the interaction with the man made the event more meaningful to the children, which, as was shown by Richman et al. (1976) would also tend to eliminate age related differences in recall.

The only other realistic explanation is that ceiling effects may have affected the results. For example, the control group children in study 3 (no peer presence or discussion) recalled an average of 6.08 statements. In the first study the control group average was 7.00 and in the second study it was 8.56. Generally, recall performance was lower in the last study as compared to the comparable groups in studies 1 and 2. However, the validity of the ceiling effects interpretation is undermined by the fact that the total numbers of different items recalled in the third study (46 different items) was exactly the same as in the second study and slightly more than in the first study (38 different items).

It thus seems that the most probable explanation for the lack of age related differences in recall in study 3 is that the type of event used was

of more personal interest to the children, as well as possibly being more meaningful. The implications of this observation will be outlined in Chapter 11.

10.4 Criticisms of the Studies

Before moving on to discuss the implications of this thesis, some limitations of the present research should be pointed out since they determine the validity of the present findings.

The most obvious limitation concerning the present research is that the crucial variable of stress was not directly measured. As stated in section 10.2, the stressful nature of being interviewed has had to be assumed here, as has the proposal that informed social support reduces anxiety. Although there is little room to interpret the findings in terms of anything other than anxiety reduction, this does limit the validity of the findings.

Measuring stress in children is a problematic issue. The study by Goodman, Hepps and Reed (1986) illustrates some of the problems. In their study they measured stress by having parents and medical staff rate the children's behaviours for signs of stress. The children who were to be given an injection were initially classed as the high stress group, those who didn't have the injection the low stress group. In fact, the ratings of stress given to the children in each group showed almost no differences. It is thus difficult for researchers to predict the extent to which children will be distressed.

Goodman et al. (1988) suggested that children could rate their own levels of stress by pointing at appropriate drawings of faces, or by using state anxiety tests designed for children. Using such techniques would determine if and when the children in the informed peer support group become less anxious. One difficulty in using such a measure in the present research is that stress would need to be assessed several times during the task: first, prior to discussion, second, after discussion and third, after the interview, only then would the benefits of the peer interaction session become apparent. This appears cumbersome and may present reliability problems for some measures of stress.

As a starting point, simply measuring anxiety after the interview might answer the question of whether or not stress has been influenced. However, even then there are still some problems. Nisbett and Wilson (1977) argue that introspections about cognitive processes are notoriously unreliable because subjects base their claims on salient explanations rather than true introspection. In a series of studies they demonstrated how subjects would report that factors, shown to be ineffective in affecting responses (e.g., passages from novels), would claim that these factors did influence judgments when they were made highly salient. For example, in the study based on the emotional impact of a passage from a novel, subjects were given either complete or edited versions of a story. Initial ratings of emotionality did not differ between groups. However, after those subjects reading the edited versions were told of the omissions they claimed that the passages were highly emotive. Nisbett and Wilson suggest this may be simply because these passages were highly salient whereas when read in context they were not.

In the present studies asking about the effects of peer presence presents dangers in that subjects are likely to respond in terms of salient dimensions of helping. Witnesses may interpret questions about the effects of peer presence in terms of the direct support provided by them (e.g., number of prompts). Since it has been shown that the overt contributions of the non-witnesses are of limited effect, the witnesses' responses to questions about peer presence might be unrepresentative of the true impact of peer presence. For example, a witness might say that having present a peer who said nothing during the interview was not helpful, whereas the present research shows that it is. Conversely, a non-witness who spoke during the interview but said nothing of any practical value might be seen as especially helpful. In these terms support is evaluated in terms of observable practical assistance rather than emotional support. Disentangling these factors in an investigative interview would be quite problematic. Testing for changes in anxiety following peer social support is, however, one of the next stages in extending the research initiated here. This issue will be returned to in the following Chapter.

A second criticism of the research is that only a restricted age range of children has been studied. To some extent this is defensible on the grounds that practical constraints on the scale of the present research limited the size of the sample that could be studied. The two main age groups of 7 and 10 years of age were chosen as representative of the age range in which testifying child witnesses are most likely to be found. Study 2 did incorporate a younger age group but running the experiment with these young subjects proved extremely problematic, it was especially hard getting the children to interact together. It seems that the value of peer

social support, as constructed in the present study, does not extend to children as young as four years. As for the relevance of the findings to an older population, this question remains less certain. It should be noted that the effects of informed peer social support in the 10-year-olds were not nearly as strong as for the 7-year-olds. It may be that the need for peer social support decreases with age, although this remains to be seen.

A third criticism of the thesis concerns the type of events used in the experimental studies. These events bear little resemblence, in terms of stress at input and output, to the conditions that a witness to a crime might experience. Once again, this criticism can be defended on practical grounds. It is unethical to deliberately stress children by either staging a stressful event such as a theft, or by creating the pretence that a seemingly simple event was in fact quite significant, in order to stress the children at the time of output.

Using an inherently stressful event such as medical or dental appointments would be a more valid type of event, but even here there are methodological problems. Ideally, researchers would want to use a stressful situation in which parents are not present, since parental presence at the time of input would be a secondary confounding variable. However, most naturally occuring stressful events would tend to have parents present and any children not accompanied by a parent might differ from other children on dimensions such as locus of control which might affect the research findings, as has been shown in adult studies (e.g., Lefcourt, Martin and Saleh, 1984; Lefcourt, 1985). Consequently, the event type would need to be a stressful situation in which the children will be without their parents,

such as an examination. This then leaves the not insignificant problem of getting parents to assist their children during a recall interview. Many parents would not participate, which again might bias responses. The only way of solving this problem is to only study those children whose parents did offer to help, allowing half to be interviewed with their parents and half without. However, this ignores the children whose parents did not offer to help and it may be that these children are those lowest in social support resources and thus in the need of most help.

Overall, choosing an appropriate methodology seemingly involves a trade-off between face validity and practical constraints. The staged events used in this thesis met the most significant conditions for eyewitness research in that they were live events. The means of accessing recall was probably more valid than in many other studies given that attention was paid to the importance of organizational prompts prior to recall, which most researchers have failed to consider.

Another possible criticism of this thesis is that peer social support has been used instead of parental support, which is probably of more significance to eyewitness interviews. As discussed in Chapter 5, the use of peers offered advantages in that problems of suggestibility would be reduced, as well as being more practical than trying to recruit adult helpers. The use use of peers is, however, not an ideal situation. The research findings do not suggest how adult helpers would perform in similar situations. It may be that the mere presence of adults enhances recall, although this remains to be proven, not assumed.

The present designs could also have made more use of psychometric testing in determining peer friendships. In the present studies dyads were created by asking the witnesses to select from amongst the non-witnesses available. This proved reasonably reliable in that the children did seem to pair up with friends. However, it may be that testing for children's peer preferences prior to testing could ensure that friends did accompany each other during the interviews. The use of "best" friends might influence the quality of the recall intrview.

Despite these limitations, the results of the thesis are still of considerable value in that this is the first experimental examination of the effects of social support within an eyewitness context. This study has shown that the the provision of social support is not inherently problematic, in fact, the benefits arising from social support are quite considerable. The results vindicate social support as a methodological tool. Even if the results are not immediately of relevance to eyewitness interviewers the precedent established here is important, namely, social support does influence free recall memory.

CHAPTER 11

Implications of the Study and Conclusions

11.1 Implications of the Study

The main question addressed in the present thesis was whether or not changes in the social environment, made at the time information was recalled, could affect the quality of children's eyewitness accounts. It was proposed that stress at the time of recall resulting from social isolation inhibited performance and that the provision of social support would reduce this anxiety. The poor recall of child witnesses was thus attributed to situational variables rather than implying an inherent weakness in memory.

Before these studies were conducted, very little was known about the effects of social support on children's free recall memory. Suggestions had been made that social support might be beneficial (e.g., Murray, 1988) while others claimed it would prove detrimental (e.g., Metropolitan Police and Bexley Social Services, 1987). Amongst those who have advocated support, careful reservations concerning possible contamination resulting from the contributions of the support person were expressed (e.g., Scottish Law Commission, 1988). These fears reflect a general lack of faith in the ability of children as witnesses. Such are the fears concerning childhood suggestibility that evidence is probably seen as invalid should the witness have either discussed the incident with anyone, or been seen to have been coached or prompted in any way when giving an answer. To prevent any allegations of impropriety in their evidence, interviewers have adopted a defensive stance and routinely isolated children, seemingly regardless of context or the needs of the child (Pynoos and Eth, 1984).

The present findings have a number of important implications concerning the way child witnesses are interviewed, as well as how memory is tested in laboratory settings. Many of these implications lead to suggestions for future research which will be discussed later in this Chapter. The implications of the results will first be discussed in relation to the prior fears concerning social support and second, in terms of their more general implications.

Prior Criticisms of Social Support

This thesis provides answers to some of the "allegations" against social support, which will be discussed in turn.

The first allegation against social support was that the presence of a support person either distracts or inhibits the witness. For example, Harari and McDavid (1969) had shown how peer presence during an interview inhibited children's responses to questions concerning knowledge of a peer's transgressions.

In none of the studies did the presence of peer support inhibit the witnesses during free recall. The best illustration here concerns the presence of peers during the first study. The presence of a peer had no effect whatsoever on the length or quality of witnesses' accounts. The only time in which peer support proved to be a distraction was with the 4-year-olds in the second study during direct questioning.

This thesis has shown that social support, as provided by peers, does not distract or inhibit witnesses. To some extent this *is not really* suprising, given that there was no reason for the non-witness to dissaprove of the recall topic. Their evaluations are likely to be positive, given a general interest in finding out what happened, or at worst, neutral in that they will be indifferent to hearing about the event. They have no realistic reason for dissaproving of recall. The implication here is that provided the support person has no motive for distorting the witness's account, then their presence during an interview does not appear to inhibit recall.

Whether or not the support person can distort the interview process forms the basis of the second allegation against social support. The issue addressed in the experimental studies concerned the possibility that the comments of a support person constitute a source of suggestibility. Interviewers have two basic fears. First, the support person will reinterpret their questions in ways that are inappropriate, for example, by turning an apparently 'neutral' question into a leading one. Second, the support person might try to reinterpret the witness's statements. Although this may have some benefits if the interviewer is unfamiliar with the child's style of speech (Murray, 1988), reinterpretations are generally frowned upon. Reinterpretations may be incorrect and suggest to the child that their recall is inappropriate, leading them to change their accounts so as to meet the approval of the support person.

When providing support in the present studies the informed non-witnesses made only minor spoken contributions during the interviews. For example, for both studies non-witnesses averaged approximately 2

conversational turns. The mean length of utterance by the non-witnesses in study 2 were about 5 words and about 8 words in the third study. Age differences in spoken contributions were non-significant.

The contributions of the non-witnesses showed a worrying positive correlation with the number of error statements made by the 7-year-old witnesses in study 2, whilst in both studies 2 and 3 there was a negative, but non-significant, correlation between non-witnesses' contributions and correct recall. However, in terms of overall accuracy, there were no differences between the experimental groups and the control groups in either study. In fact, accuracy rates remained constant in all studies across both age and experimental groups.

The implication to be drawn here is that although the spoken contributions of the non-witnesses are not entirely welcome, they did not lead to a reduction in recall accuracy. That is, the witnesses were not "misled" by their peers, even when they suggested incorrect ideas, for reasons discussed in section 10.2. It may be that peer social support might be more effective when the helper remains completely silent. This thesis suggests that it is the very presence of informed peers that is important. Future studies could more rigorously control the contributions of the support persons. This may be important in that even though the support person does not appear to distort accounts, interviewers are likely to express reservations about their 'assistance'. It may be that social support persons should remain silent during recall, as suggested by the Scottish Law Commission (1988) and the Children's Interests Bureau (1988),

since even though this will not necessarily affect accuracy, it will probably enhance the witness's credibility in the eyes of the interviewer.

The third allegation to be considered is that following discussion with another person a child witness's account of an event becomes distorted. The idea of child witnesses interacting as an aid to effective recall is likely to be counter to some people's preconceptions, in spite of the evidence suggesting that peer collaboration on a number of different tasks has a facilitative effect on performance (e.g., Mugny et al., 1981; Light and Glachan, 1985). Children as witnesses are typically viewed in a very negative light and with regard to the general idea of peer interaction, in any form, one might say that the one thing more unreliable than one child witness, is two child witnesses! Collaboration between children is viewed as an undesirable situation. Defence lawyers would probably attack two witnesses more aggressively than a single witness, since they can play on the court's general fears concerning children's alleged excessive suggestibility. For example, in a sexual abuse trial involving a single child the defence lawyer may be hard pressed to explain the source of the child's supposed fantasies. However, when there are two children it is somewhat easier to presuppose some childish mischief making gone wrong.

Although this study cannot directly address such questions, it does at least show that the idea of interaction itself is not inherently unreliable. For example, in study 3 one group of children discussed the event with non-witness peers before being interviewed alone. The recall performances of the children in this group were either directly comparable

with the control groups in terms of length of account and accuracy (the 7-year-old subjects) or slightly superior (the 10-year-old subjects).

Simply by talking together children do not allow their accounts to become wild fantasies. It may be that if two witnesses were to discuss an event prior to recall then this might affect their joint account, but this problem would not be unique to children, as studies with groups of adults have shown (e.g., Warnick and Sanders, 1980; Stephenson et al., 1983). It may be that discussion amongst two child witnesses prior to their joint interview causes one child to adjust his or her account into line with that of the other. However, when the second person has no knowledge of the event (a non-witness), then there is no reason to suppose they will influence the witness, unless they have some hidden motives for doing so. It should be pointed out here that during peer collaboration in study 1, even though witnesses did produce highly agreed upon testimony, this was largely accurate showing no differences with the other groups.

Suggestibility of the kind feared by those opposed to collaboration stems from two basic sources. These include conflicts of knowledge, or 'expert' knowledge based authority (e.g., Dodd and Bradshaw, 1980; Smith and Ellsworth, 1987). The basic principle here being "I know more about it than you do". Alternatively, it may stem from cases where the non-witness has greater social power than the witness, as in the case of an older child or adult (e.g., Eagly, 1983; Ceci, Toglia and Ross, 1987). The advantage of discussion with a non-witness peer is that these problems do not arise.

The use of peer social support, as opposed to support from adults, may have been crucial here. Children may change their accounts following discussions with an adult since adults are probably more likely to ask "filler" questions which may mean the child has to make uncertain inferences. Adults may also restructure or reinterpret statements. The child may then try to recall the adult's interpretation of the event rather than relying on their own memories. In support of this point, study 2 showed how about half of all children incorporated details from the adult interviewer's misleading questions into their written descriptions of the event.

At a theoretical level peer social support has some advantages over adult support, although adult support may yet prove to be of considerable, if not more, practical relevance. For example, peer social support, as advocated in this study is unlikely to be adopted by many interviewers. That is, interviewers are unlikely to encourage their witness to discuss an incident with a peer before interviewing them both. It may be that when such interactions have already taken place, as would occur when a friend confides in a peer, then it might be appropriate to interview that child with the peer confidant present. The direct applications of peer social support are thus quite restricted. However, this thesis implies that should a child express a desire to be interviewed with a peer present, rather than an adult, allowing this request will probably assist rather than detract from recall. If a child asks for a friend to be present then this support person is unlikely to dissaprove of the witness's recall and will probably fulfill the role of supporting the child witness.

The most important findings of the thesis are not concerned so much with applying peer social support, but in demonstrating that social support is important in an eyewitness context. The principles established here have shown that several key allegations against social support are without justification. Social support does not undermine an account, instead it can enhance it. Although later studies of social support may add some qualifications to these findings, such as collaboration with adults undermining testimony, the strength of the results presents a new and significant area of interest in eyewitness research. Future directions for research will be discussed later in this Chapter.

Other Implications of the Thesis

Although the implications concerning the relevance of social support to eyewitness interviews were the key issues in this thesis, the findings have a number of implications concerning the way children are interviewed in other situations, as well as highlighting more general issues in eyewitness research.

This thesis has shown that children can derive support from peers and that this support has marked effects on task performance. Even though peer social support may have only limited applications in real eyewitness interviews, it might be welcomed more enthusiastically by those researchers studying memory development in laboratory based settings. There is no reason why other experimental studies of free recall could not consider the facilitative effects of social support on memory. Just as researchers have advocated more meaningful tasks and recall contexts (e.g., Brown and

DeLoache, 1978), the social context of testing must also be considered. It was interesting to note that in the second study age related differences in free recall were less marked in the informed peer support groups. Studies of memory thus need to consider the social environment as well as other contextual factors. It is not enough to simply use child-oriented materials to test memory whilst the social context still favours older subjects.

The present studies have also established an interesting precedent in memory research. Joint remembering is normally seen as a process in which two or more people recall an event which they had both experienced, either individually or together. What has been studied here in the informed peer support conditions is the joint recall of an event which only one person had experienced. The second person had no direct experience of the original event and is basing his or her contributions on the earlier event descriptions by the witness, plus their ability to draw inferences and then ask salient questions or offer relevant prompts. Joint recall, as described in other studies, is only occuring to the extent that the children might be attempting joint recall of the event description contained in the interaction period.

Social support might also have effects in other areas of research. Study 2 showed that incorrect responses to misleading questions were reduced in the social support condition ($p<.08$) for the 7 and 10-year-old subjects. Social support thus appears to reduce suggestibility, at least in the short term. It may be that in eyewitness contexts and other experimental interviews, children are more reluctant to follow obscure instructions (e.g., Markman, 1977) or answer "bizarre" questions (e.g.,

Hughes and Grieve, 1980) when they have peer support. The presence of a support person may enhance confidence, making subjects less ready to accept implied answers.

Section 10.3 raised the problems of choosing an appropriate methodology for testing recall by highlighting the lack of an age effect on recall in study 3. The most reasonable interpretation of this finding was that the interaction between the children and the actor in the third study made the event either more meaningful, or more personally significant, than had been the case in the earlier studies where the children had not individually interacted with the man. The relevance of research on bystander witnesses to victims has often been questioned (e.g., Yuille, 1987). In the case of children, research on bystanders has been attacked because most child witnesses tend to be victims of crimes, such as sexual abuse (e.g., Goodman, Aman and Hirschman, 1987).

The present studies have shown that age related trends in recall memory are more marked when events are witnessed rather than experienced. However, it should be noted that the type of event did not influence the main findings concerning the importance of informed social support. In both studies 2 and 3 the children interviewed with informed support recalled more than the control groups.

This suggests that experimental studies may have important implications concerning interview techniques, but that findings centring on age related differences will not necessarily extend beyond the context in which initial testing was conducted. As stated earlier, the third study does not resemble

a crime situation, except in that there was a degree of interaction between the children and the actor. Nevertheless, the findings challenge the assumption that all eyewitness studies are relevant to all types of interviews. The principles of interviewing may be consistent across event types, but the relative effects on each age group are likely to fluctuate.

11.2 Future Research on Social Support

The present thesis is the first study of social support within an eyewitness context, it is, therefore, not suprising to discover that it has a number of implications for future research following on from the precedents established here.

The first issue for future research concerns the role of the non-witness during the recall interview. It was suggested earlier that the non-witnesses offered little practical assistance to the witnesses during the interviews, nevertheless, their presence had a significant effect on recall. The witness apears to derive support from the availability of support, though they seldom request it. The non-witnesses could not, therefore, be told to remain completely silent during recall since this might undermine their value to the witness. However, they could be asked to restrict their spoken contributions to relatively neutral encouragements. For example, they could be asked to avoid offering any prompts and to use only supportive statements such as repeating the witness's statements or simply confirming their interest (e.g., "Yes" and "Go on"). The non-witness could be told to only offer prompts should the witness directly ask for

them. These instructions to the non-witness would need to be administered away from the witness.

Although this design may have little overall effect on recall, it would serve to enhance credibility, that is, the less the non-witness says, the greater the perceived credibility of the witness and the interview as a whole. It would also serve to more clearly define how the presence of an informed non-witness influences recall. It may be that the non-witness must be seen to take a direct part, however small, in the recall proceedings. Their interest might not be expressed strongly enough by simply offering neutral encouragements. The witness may need to see them as an assistant and perhaps only task related comments can achieve this state.

Another topic for future consideration concerns who children wish to support them during interviews. In stressful situations people express a desire to be with others (Schachter, 1959; Charnley, 1987). However, depending on the task demands, children have different ideas concerning who that person should be (Nelson-LeGall and Gumerman, 1984). It may be that in laboratory based studies children express a preference for peers over adults, since parental participation might attract unfavourable comments such as teasing (Nelson-LeGall, 1981), but in 'real' eyewitness interviews there is a stronger demand for adults. An attitudinal survey of children's helper preferences using several stressful scenarios might answer this question. Since it is not feasible to expect children to understand the stressful circumstances involved in a police interview, they could be asked about other hypothetical situations (e.g., having an injection, or a tooth removed) for which their judgments would be less valid, but more reliable.

This leads onto the issue of whether peers or adults provide the most effective support. The success of the helper's interventions would interact with the witness's needs, hence the importance of considering the child's own choice of helpers. Many of the relative advantages and disadvantages of peer versus adult helpers have already been discussed in the thesis (e.g., differing levels of credibility in suggestions). However, one issue only briefly discussed concerns the possibility of modelling behaviours demonstrated by the support person.

Rogoff (1987) suggested that adults may attempt to influence a child's behaviour by modelling behaviours in order to reduce fear. The importance of this observation was underlined by the observations of Melamed and Siegel (1984) that in stressful situations distressed mothers tended to have distressed children. Adults may attempt to influence a child's anxiety by signalling through their non-verbal behaviour. This may be one area in which adults are likely to be superior to peers, since even when not speaking, the adult is attempting to communicate with their child. However, it may also be one area in which adults exert a more damaging effect than peers since inappropriate modelling (i.e., anxiety) from an adult might be interpreted as more serious than anxiety from a peer. Further, parental presence might encourage a child to use avoidance behaviours, such as crying, in order to escape the stressor. That is, by crying a child is asking the adult helper to intervene on their behalf and remove the stressor, for example, Gross et al. (1967) showed that crying during an injection was far more common when parents were present. If parental social support was to be examined, then the styles of interaction between adult and child, would need to be carefully categorised since different

interactions would have very different effects on behaviour (Melamed and Siegel, 1984).

In the present research, the interaction or discussion phase, during which peers become "informed", centred on problem-solving discussion in a way similiar to that described by Costanza et al. (1988). Costanza et al. also described how other topics of discussion (e.g., irrelevant talk) reduced anxiety. With peers, irrelevant discussion may have no effects on performance, but there remains the possibility that such discussions with an adult might. Overall, the effects of either adults and peers might show some variation, much of which might be due to differing styles of interaction.

The next issue for future research concerns the search for support persons when neither a trusted adult or peer can be called upon. In the present studies the witnesses derived support from the presence of an informed peer. This raises an intriguing possibility, namely, whether or not shared knowledge also permits other sources of support to be 'created'. For example, after a child witness has been interviewed alone by an adult interrogator the child will probably be asked to repeat their account on other occasions, which may be disturbing since the child is repeatedly having to relive what may have been a traumatic experience. The intriguing possibility opened up by the present thesis is that the initial interviewer could become a support person during the subsequent interviews.

The way this could work would be for a neutral interviewer (perhaps a child psychologist?) to speak with the child prior to the 'official' recall

interview. The particular advantage of using a neutral interviewer is that they could be trained in interviewing without making any suggestions, since the purpose of this interview is not to collect information, though any that is discovered could be useful. In the following interviews the witness and initial interviewer, now support person, could then be interviewed together. Part of the interviewer's training would cover how to act during this interview, much of which would be determined by the future research suggested above. If the shared knowledge variable is as crucial as the present thesis suggests then this "artifical" source of support might achieve results similar to that of a peer. The adult supporter could adopt the styles of interaction shown to be so sucessful in this thesis when peers interact, rather than adopting styles more characteristic of adults, such as dominating the interview (Kruger and Tomasello, 1986).

This suggestion applies the present findings into a real-world context and is in that regard quite significant. The principles of sharing knowledge and minimal prompting illustrated here could be one way in which social support can be applied. This would avoid a number of problems in terms of unwelcome assistance by the support person, as well as placing complete control of the first interview with a single independent source. This may be one of the most interesting ways in which the present research could be extended. A simple way of testing the principles of "created" social support would be for an interviewer to question a group of children and during follow-up interviews by a second interviewer, his or her absence and presence could be varied.

11.3 Future Research on Child Witnesses

Apart from suggesting future research on social support, this thesis highlights other directions for future studies on child witnesses. These suggestions centre on the language used by witnesses and the interrogation styles open to interviewers.

Chapter 9 raised some interesting questions concerning the effects of powerless speech on adult's perceptions of children's eyewitness statements. Although there is some intuitive appeal to the idea that the reason children's statements are treated sceptically lies not so much in what they say, but in the way they say it, this issue clearly needs further investigation.

As an extension of Chapter 9, it is suggested that an experiment along the following lines would be beneficial. Clearly there is a need to see to what extent the use of powerless speech undermines the credibility of children. It is possible that its effects are the same as for adults, namely to reduce credibility (Erickson et al., 1978), although it is also possible that adults may overlook powerless speech, in much the same way that inconsistent responses were overlooked (except in very young children) in the study by Leippe and Romanczyk (1987).

A mock jury study, along the lines proposed by Ross, Miller and Moran (1987) and in particular Leippe and Romanczyk, with the two independent variables of age (e.g., 6, 10 and 28 years) and speech style (powerless and powerful) would be needed. This would show if adults treat children more

sceptically because of powerless speech, or whether they pay it little heed.

The present thesis has concentrated on the problems of eliciting accurate free recall from child witnesses without compromising the validity of the data by offering explicit prompts. In eyewitness studies there has been little research on the use of prompts or organizational strategies to aid recall (Yuille, 1987). Recall is normally tested either by free recall and/or direct questions. Very few studies have attempted to find a middle path between these extremes. One rare example is the study by Dent and Stephenson (1979a) in which children were asked "general" questions, which prompted recall for different parts of an event. However, even these questions made use of the interviewer's prior knowledge of the event which probably explains why they increased recall, but decreased accuracy relative to free recall.

It is suggested here that interview strategies could be developed to make use of organizational strategies that help to structure a child's account of an event, without leading the child into making inaccurate statements. For example, in the present studies the children were asked to describe what the man had looked like, what he had said and done. Recall was thus structured into three categories: physical description, speech and actions. These categories could be used individually as a basis for organizing recall with each category being used in turn to elicit a single type of information, in a way similar to that suggested by Kobasigawa (1974). Free recall now becomes three separate components, which may show

some advantages over simply asking the children to recall information in any category, as was done in the present studies.

As a further extension of organizational strategies, research could be conducted on the possibility of developing a hierachical strategy for eliciting recall. That is, a planned interview that assumes no knowledge of an event but works on a set of pre-determined questions. One way in which this might work would be for the interviewer to ask a general opening question, followed by a more specific question. For example, an opening question could be "Did the man say *anything* while he was in the room?", for which a more specific question would be "Can you tell me what?". The basic premise here is to devise an interview plan, using a series of general and specific questions, to cover all potential major aspects of a witnessed events. The aim is to provide a structured approach to free recall where the child attempts free recall in a series of categories. Should the child reply "No" to a general question, then the interviewer would omit the following specific questions and move to the next general question. Essentially, this strategy is based around the idea of asking a series of initial questions (to determine how much was seen), and a series of follow-up questions (to determine what was seen). Using organizational strategies in this way may serve to elicit maximum free recall without the interviewer attempting to prompt the child in unsuitable ways.

If interviewers should still need to ask direct questions then another area of future research would be ways of making children resistant to suggestion. As described in Chapter 3, suggestibility can result from a number of sources, but one common theme is the child's misinterpretation of

contextual cues. What is needed is a way of making children resistant to erroneous suggestions, since as King and Yuille (1986) point out, children do recognise incorrect suggestions as shown by their admitting to have "gone along" with a suggestion.

One possible means of reducing suggestibility may be to warn the children that the interviewer may be trying to trick them, which may increase attention to the speaker's words and motives (e.g., McDevitt and Carroll, 1988). One way of doing this would be to tell the child, "If I say anything wrong, or silly, then tell me!". However, this may not be enough, children may need a more explicit form of warning in the form of an example. One means of doing this would be to ask a set of initial questions that includes some 'obviously' misleading questions such as "Does your teacher have blue hair?", which the child should (hopefully) reject. The child would probably only accept such outrageous suggestions if the interviewers behaviour gives them cause to question the purpose of the interview, or if the warning about accepting "silly" suggestions was badly explained. Warnings of this kind might serve to make the child aware that they can say "No" to the interviewer's questions. A particularly difficult question could be used to demonstrate the acceptability of the "Don't know" response. It may be necessary to use examples at several points in the interview to make sure the child remembers these options. This may serve to reduce suggestibility, at least in the short term.

11.4 "... of great theoretical and practical importance...."

Atkinson (1988) provides a glossary for interpreting what is said in psychological research papers into what is meant. The phrase "... of great theoretical and practical importantance...." is a well-worn phrase which, Atkinson claims, translates into "Well *I'm* interested in it even if no one else is".

Perhaps both forms of the saying apply equally well to the present thesis. The findings really are "of great theoretical and practical importance" and the author is seemingly interested in a topic that has failed to attract the interest of other researchers.

The present thesis has demonstrated that children's recall memory may be considerably enhanced by interviewing children in the presence of a peer with whom they have previously discussed an event. It has been argued that interaction between children is not inherently problematic. The key advantage of informed social support from peers is that the danger of suggestibility during the discussion phase, as well as the interview itself, does not arise since the non-witness has no reason to distort the account and any attempt to do so (whether through over-enthusiasm or malice) is likely to be dismissed by the witness. That is, who would take the advice of a person who couldn't possibly know anything about the topic of conversation other than what you had told them?

This recall improvement was achieved without affecting the number of testimony errors, unlike techniques such as direct questioning (e.g., Marin

et al., 1979; Cohen and Harnick, 1980). The use of informed non-witness peers in interviews would therefore seem to be of considerable value within the context of eyewitness research. A particular advantage of the technique discussed here is that it offers any interviewer, seemingly regardless of knowledge of the event, or topic, under consideration, with a reasonably simple method of increasing the amount of obtained testimony.

This thesis confirms the potential value of social support as a means of enhancing recall and thus opens up a new area of research on children's testimony. Many of the prior fears concerning social support have been challenged and shown to be illfounded. This is an important precedent which needs to be developed further. A number of suggestions for future research were outlined in the previous Chapter. However, perhaps most importantly this thesis questions the all too common assumption that children's eyewitness descriptions are inherently weak.

Child witnesses have been treated particularly harshly by psychological researchers. Fears concerning poor recall and excessive suggestibility have been commonplace. In Chapters 2 and 3 it was shown that these accusations are largely supported by studies which have incorporated a large degree of wish fulfillment, or self-fulfilling prophecies. That is, researchers have regularly, but perhaps unconciously, biased their studies in ways that favour older subjects.

The poor image of child witnesses has almost certainly led to the negative view of social support. That is, since children are so suggestible, the presence of another person is bound to undermine the

already fragile reliability of the interview. It may be that interviewers have relied too heavily on their stereotpyes of children rather than examining the evidence before them.

The Bexley Report (Metropolitan Police and Bexley Social Services, 1987) is a good ilustration of this point. In it the possible use of social support was discouraged, but the official evaluation report (Charnley, 1987) showed that most interviews did make use of social support. It is apparent that children do wish to be accompanied by someone during a stressful interview. By denying them this request interviewers are immediately undermining the value of the interview. Isolating the child may result in unnecessary additional anxiety and undermine the child's confidence.

For example, consider the case of a child who is to be interviewed. Prior to the interview their normal sources of support (friends and relatives) are removed. This may be done with little regard for the child's feelings in that the reasons for the isolation may not be explained. The child's parting view of their support person may be seeing them clearly anxious. As discussed earlier, parental reactions to stressful situations are important determinants of anxiety. Insisting that a parent is removed may annoy or distress the adult and these emotions could well be detected by the child. The subsequent attempts of a stranger to comfort the child would then be of little value. If the child should appear obviously distressed at this time the interviewer is likely to view them as a poor witness, thereby reinforcing the image of the unreliable child witness. What is suggested here is that the conditions under which social support is

removed is another source of anxiety in that the way in which the child is isolated may have a bearing on subsequent levels of stress.

If the support person has to be removed, interviewers should recognise how their actions are likely to be viewed by the child. By upsetting a parent when asking them to leave, the interviewer may be seen as a hostile figure in the eyes of the child, which may both inhibit free recall and increase the risk of suggestibility since the questioner now has the added distinction of being seen as a threatening figure.

An important implication of the present thesis is that many of the problems of interviewing child witnesses can easily be avoided. With regard to free recall, the poor accounts of child witnesses may in part be explained by the lack of care with which interviewers have approached the interview. Although it is now often accepted that interviews can be stressful for young children, discussions of how to alleviate this problem have been unnecessarily blocked on the too eagerly cited premise of excessive childhood suggestibility.

There is thus a need to reevaluate attitudes towards child witnesses. Perhaps interviewers should begin their inquiries on the premise advocated by Goodman and Michelli (1981) that children can recall events accurately, provided they are not confused by adults. This places the burden of potential unreliability with the interviewer, not the child. However, we should be careful in adopting such a viewpoint or else the problems of biased research and unjustified accusations, as described in Chapter 1, will turn full circle, leading to the possible scenario of researchers

asserting that all children's statements can be trusted. Such a premise is almost as undesirable as that of the 'unreliable child witness' since it too excludes, or at least hampers, certain lines of enquiry. The success of the present studies in illustrating the potential value of social support, despite the allegations against it, serve as an important illustration of this point. Social support had been almost totally ignored as a research issue. The reasons for this omission have been challenged and hopefully it will now feature as a significant issue for further debate.

APPENDIX I

(Study 1)

Study 1: Staged Event Script

Actor's Appearance

Actor was wearing a black leather coat, a brown jumper, jeans and black shoes. He carried a plastic bag in one hand and a book and piece of paper in the other.

Actor's Script

Confederate entered classroom, walked to the teacher's desk and said to the teacher and children:

"Hello. I'm looking for Mr Roberts. Have you seen him?"

To which the teacher said "No" [as previously arranged].

The confederate then took a pen from his pocket and wrote in the book, after which he then placed the pen, book and paper into his bag. He then took a piece of chalk from the bag and wrote "Mr Roberts" on the blackboard. He then said:

"I can't stay long, I've left my bike outside. I'll be back at 3 o'clock." He then left the classroom.

The teacher then carried on with the lesson, making no reference to the man. Shortly afterwards a female interviewer came to the classroom to collect the children

Recall Instructions: One Child Only/Two Witnesses

"I'm going to ask you some questions to see how well you can remember things. Do you remember the man who came into your classroom this morning?" [Ensure that the child does remember. If necessary add "A man came into your classroom this morning"]

"I'm very interested in what happened when he came in. As I wasn't there this morning, I'd like you to tell me all about it. Tell me everything you can remember about the man. I'd like to know things like what he said, what he did and what he looked like. Do you think you could do that?"

"Tell me everything you can remember? It doesn't matter if you can't remember much, just do your best." [Finally, check that the child understands.] Then if the child hasn't already started speaking, add:

"Tell me everything about what happened that you can remember."

Interview prompts

During Recall: Only say "Anything else" or "Go on"

Final Prompt: When the child appears to have finished say "I'd like to know things like what he said, what he did and what he looked like."

[Note: The children in the two witnesses group received almost identical instructions, except it was asked that BOTH children say what happened.]

Recall Instructions: One Child with Peer Support

Say to the child who witnessed the event: "I'm going to ask you some questions to see how well you can remember things. Do you remember the man who came into your classroom this morning?" [Ensure that the child does remember. If necessary add "A man came into your classroom this morning"]

"I'm very interested in what happened when he came in. As _____ (non witness's name) and me weren't there this morning, I'd like you to tell us all about it. Tell us everything you can remember about the man. We'd like to know things like what he said, what he did and what he looked like. Do you think you could do that?"

"Tell us everything you can remember? It doesn't matter if you can't remember much, just do your best." [Finally, check that the child understands.] Then if the child hasn't already started speaking, add:

"I want you to tell me and _____ (second child's name) about what happened. Tell us everything that you can remember."

Interview prompts

During Recall: Only say "Anything else" or "Go on"

Final Prompt: When the child appears to have finished say "I'd like to know things like what he said, what he did and what he looked like."

Free Recall Coding Scheme

Each item mentioned scores as one correct recall statement.

1.PHYSICAL DESCRIPTIVE DETAILS

1. Black hair
2. Curly hair
3. Glasses
4. Dark rimmed glasses
5. Black coat
6. Leather coat
7. Belt on coat
8. Dark skin
9. Jeans-Blue trousers
10. Black shoes
11. Grey brown jumper
12. Brown eyes
13. Unshaven semi-beard
14. Stranger/ unknown person

2. ACTION DETAILS

15. Bag 16. White bag 17. Plastic bag

18. Pen

19. Chalk

20. Piece of paper script

21. Book

22. Looking for someone 23. Looking for Mr Roberts

24. Asked if he'd (i.e., Mr Roberts) been seen

25. Teacher said "No" to 23.

26. Said he couldn't stay long

27. Said his bike was outside

28. Said he'll be back 29. Back at 3 o'clock

30. Read from script

31. Put pen in bag

32. Put book in bag

33. Wrote in book on paper

34. Searched in bag 35. Searched in bag for chalk

36. Wrote on blackboard 37. Wrote a name on the blackboard

38. Wrote Mr Roberts on blackboard

Statistical Analyses

Table A: Correct Free Recall Statements in Study 1

A 2-way ANOVA examined the number of correct statements in free recall given by (A) each age group, and (B) each experimental group (see Table 1).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	212.817	1	212.817	15.776 ****
Factor B (Control x Support x 2 witnesses)	134.433	2	67.217	4.980 **
A x B	4.433	2	2.217	0.164
Residual	728.900	54	13.498	

** = p<.01

**** = p<.001

Table B: Physical Descriptive Statements

A 2-way ANOVA examined the number of physical descriptive statements in free recall given by (A) each age group, and (B) each experimental group (see Table 2).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	32.267	1	32.267	10.237 ***
Factor B (Control x Support x 2 witnesses)	13.733	2	6.867	2.179
A x B	2.133	2	1.067	0.338
Residual	170.200	54	3.152	

*** = $p<.005$

Table C: Action Statements

A 2-way ANOVA examined the number of action statements in free recall given by (A) each age group, and (B) each experimental group (see Table 3).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	79.350	1	79.350	11.559 ****
Factor B (Control x Support x 2 witnesses)	63.300	2	31.650	4.610 *
A x B	7.900	2	3.950	0.575
Residual	370.700	54	6.865	

* = $p<.05$

**** = $p<.001$

Table D: Incorrect Free Recall Statements in Study 1

A 2-way ANOVA examined the number of incorrect statements in free recall given by (A) each age group, and (B) each experimental group (see Table 4).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	2.017	1	2.017	1.391
Factor B (Control x Support x 2 witnesses)	5.200	2	2.600	1.793
A x B	4.133	2	2.067	1.425
Residual	78.300	54	1.450	

APPENDIX II

(Study 2)

Study 2: Staged Event Script

Appearance

Confederate wore glasses, a black coat, plain blue jumper, jeans and black shoes. He carried a plastic CO-OP bag in one hand and a piece of paper in the other.

Actor's Script

Confederate entered the classroom, went to the teacher's desk and said to the teacher: "Hello. I'm looking for someone who might be in this class, do you mind if I check?"

Confederate then took a piece of chalk from his pocket and wrote KEITH ROBERTS on the blackboard.

He then asked the class: "Is Keith Roberts here?"

To which the teacher responded "No" [s previously arranged].

The confederate then said: "I must find him, but I've got to be quick, I've left my car out in the main road. I'll be back to try again at 3 o'clock. Keith Roberts might be in Mrs Sage's class? I'll try there.

He then placed the piece of paper on the teacher's desk and left.

Appendix IIb

Recall Instructions

Prior Instructions to the Witness and Non-Witness

To the non-witness:

"While you were out of the classroom a man came in. I didn't see the man but _____ (witness's name) did."

"In a few minutes I'll be asking _____ (witness) some questions about the man.

Then to the witness:

"As _____ (non-witness' name) wasn't there, I want you to tell him/her all about it.

"Do you remember the man? Well I want you to tell _____ (non-witness) things like what he said, what he did and what he looked like. Can you do that?"

Then say to non-witness:

"Try to find out as much as you can, get _____ (witness) to tell you as much as he/she can remember, then later on you can help him to tell me about what happened."

Interview Recall Instructions: One Child Alone

"I'm going to ask you some questions to see how well you can remember things. Do you remember the man who came into your classroom this afternoon?" [Ensure that the child does remember. If necessary add: "A man came into your classroom a short while ago."]

"I'm very interested in what happened when he came in. As I wasn't there, I'd like you to tell me all about it. Tell me everything you can remember about the man. I'd like to know things like what he said, what he did and what he looked like. Do you think you could do that?"

"Tell me everything you can remember? It doesn't matter if you can't remember much, just do your best." [Finally, check that the child understands. Then, if the child hasn't already started talking, add: Tell me everything that you can remember."]

Interview prompts

During Recall: Only say "Anything else" or "Go on"

Final Prompt: When the child appears to have finished say "I'd like to know things like what he said, what he did and what he looked like."

Interview Recall Instructions: Child With Peer Support

Say to the child who witnessed the event:

"I'm going to ask you some questions to see how well you can remember things. Do you remember the man who came into your classroom this afternoon?" [Ensure that the child does remember. If necessary add: "A man came into your classroom a short while ago."] "I'm very interested in what happened when he came in. You've already told _____ (second child's name) about what happened, now I'd like you to tell me. Tell me everything you can remember about the man. I'd like to know things like what he said, what he did and what he looked like. Do you think you could do that?"

Then say to non-witness:

"I'd like you to help _____ (name of witness) out as much as you can. If he/she forgets anything, or says anything wrong, then can you tell me? I want you to make sure that _____(name of witness) doesn't make any mistakes."

Then to the witness:

"Tell me everything you can remember? It doesn't matter if you can't remember much, just do your best." [Finally, check that the child understands. Then, if the child hasn't already started talking, add: "Tell me everything that you can remember."]

Interview prompts

During Recall: Only say "Anything else" or "Go on"

Final Prompt: When the child appears to have finished say "I'd like to know things like what he said, what he did and what he looked like."

Free Recall Coding Scheme

Each item mentioned scores as one correct statement.

1. Black hair
2. Curly hair
3. Glasses
4. Dark rimmed glasses
5. Black coat
6. Leather coat
7. Dark skin
8. Grey trousers
9. Shirt
10. White shirt
11. Black shoes
12. Jumper
13. Blue jumper
14. Brown eyes
15. Stranger / unknown person
16. Bag
17. Plastic bag
18. White bag
19. Blue bag
20. CO-OP bag
21. Chalk
22. Piece of paper/script
23. Paper had Robin on one side
24. Paper had (type) writing on
25. Asked if someone was present
26. Asked for a boy
27. For Keith
29. For _____ Roberts
30. Teacher said "No" to 25-29
31. He couldn't stay long/in hurry
32. Car outside
33. In Road
34. In main road
35. Said he'll be back
36. Back at 3 o'clock

37. Said perhaps he's in another class

38. Mrs _____'s class

39. Went to try in another class

39. Went to Mrs _____'s class

40. Read from script

41. Left script

42. Left script on desk/with teacher

43. Wrote on blackboard

44. Wrote a name on blackboard

45. Wrote (half name right) on blackboard

46. Wrote Keith Roberts on blackboard

Questionnaire

Child's name: ..... Age group: ....

Experimental condition: .....

Did he have a scarf on?

(A) Yes (B) No
(C) Don't know (D) No response
(E) Other.....

Where did he say he had left his car?

(A) In the main Road (B) Another location.....
(C) Don't know (D) Didn't say
(E) No response (F) Other.....

What colour scarf was he wearing?

(A) A colour..... (B) Didn't have one
(C) Don't know (D) No response
(E) Other.....

Was his coat black?

(A) Yes (B) No
(C) Don't know (D) No response
(E) Other.....

When did he say he'd be coming back?

(A) 3 o'clock (B) Another time.....
(C) Don't know (D) Didn't say a time
(E) No response (F) Other.....

Was his coat blue?

(A) Yes (B) No
(C) Don't know (D) No response
(E) Other.....

Who did he say he was looking for?

(A) Keith Roberts (B) Another named person.....
(C) Don't know (D) Didn't say
(E) No response (F) Other.....

What was the shop name on his bag?

(A) CO-OP (B) Another name.....
(C) Don't know (D) Didn't have a name on
(E) No response (F) Other.....

What newspaper was he carrying?

(A) A named paper..... (B) Didn't have one
(C) Don't know (D) No response
(E) Other.....

Did he have a bag with him?

(A) Yes (B) No
(C) Don't know (D) No response
(E) Other.....

Interviewer:..... **Interview number:.....**

Statistical Analyses

Table E: Correct Free Recall Statements in Study 2

A 2-way ANOVA examined the number of correct statements in free recall given by (A) each age group, and (B) each experimental group (see Table 5).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	210.250	1	210.250	13.320 ****
Factor B (Control x Exptal)	306.250	1	306.250	19.402 ****
A x B	23.361	1	23.361	1.480
Residual	505.111	32	15.785	

**** = $p<.001$

Table F: Incorrect Free Recall Statements in Study 2

A 2-way ANOVA examined the number of incorrect statements in free recall given by (A) each age group, and (B) each experimental group (see Table 6).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	0.000	1	0.000	0.000
Factor B (Control x Exptal)	2.778	1	2.778	2.000
A x B	2.778	1	2.778	2.000
Residual	44.444	32	1.389	

Table G: Correct Responses to Objective Questions

A 2-way ANOVA examined the number of correct responses to objective questions given by (A) each age group, and (B) each experimental group (see Table 7).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	1.563	1	1.563	1.190
Factor B (Control x Exptal)	0.174	1	0.174	0.132
A x B	0.007	1	0.007	0.005
Residual	42.000	32	1.321	

Table H: Incorrect Responses to Objective Questions

A 2-way ANOVA examined the number of incorrect responses to objective questions given by (A) each age group, and (B) each experimental group (see Table 8).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	0.250	1	0.250	0.130
Factor B (Control x Exptal)	0.111	1	0.111	0.058
A x B	1.000	1	1.000	0.521
Residual	61.444	32	1.920	

Table I: "Don't know" Responses to Objective Questions

A 2-way ANOVA examined the number of "Don't know" responses to objective questions given by (A) each age group, and (B) each experimental group (see Table 9).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	3.063	1	3.063	3.564
Factor B (Control x Exptal)	0.007	1	0.007	0.008
A x B	0.840	1	0.840	0.978
Residual	27.500	32	0.859	

Table J: Correct Responses to Misleading Questions

A 2-way ANOVA examined the number of correct responses to misleading questions given by (A) each age group, and (B) each experimental group (see Table 10).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	0.028	1	0.028	0.018
Factor B (Control x Exptal)	3.361	1	3.361	2.230
A x B	0.028	1	0.028	0.180
Residual	48.222	32	1.507	

Table K: Incorrect Responses to Misleading Questions

A 2-way ANOVA examined the number of incorrect responses to misleading questions given by (A) each age group, and (B) each experimental group (see Table 11).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	2.778	1	2.778	2.326
Factor B (Control x Exptal)	4.000	1	4.000	3.349 §
A x B	1.000	1	1.000	0.837
Residual	38.222	32	1.194	

§ = $p<.08$.

Table L: "Don't know" Responses to Misleading Questions

A 2-way ANOVA examined the number of "Don't know" responses to misleading questions given by (A) each age group, and (B) each experimental group (see Table 12).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	3.361	1	3.361	3.408 §
Factor B (Control x Exptal)	0.028	1	0.028	0.028
A x B	1.361	1	1.361	1.380
Residual	31.556	32	0.986	

§ = $p<.08$.

Table M: Correct Written Statements

A 2-way ANOVA examined the number of correct written statements given by (A) each age group, and (B) each experimental group (see Table 13).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	144.000	1	144.000	5.818 *
Factor B (Control x Exptal)	4.000	1	4.000	0.162
A x B	1.000	1	1.000	0.040
Residual	792.000	32	24.750	

* = $p<.05$

Table N: Incorrect Written Statements

A 2-way ANOVA examined the number of incorrect written statements given by (A) each age group, and (B) each experimental group (see Table 14).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	0.028	1	0.028	0.015
Factor B (Control x Exptal)	0.250	1	0.250	0.134
A x B	0.694	1	0.694	0.372
Residual	59.778	32	1.868	

Table Q: The Effects of Objective Questions on the Written Accounts

A 2-way ANOVA examined the number of correct statements in the written accounts that resulted from the objective questions given by (A) each age group, and (B) each experimental group (see Table 15).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	0.250	1	0.250	0.533
Factor B (Control x Exptal)	0.694	1	0.694	1.481
A x B	0.028	1	0.028	0.059
Residual	15.000	32	0.469	

Table P: The Effects of Misleading Questions on the Written Accounts

A 2-way ANOVA examined the number of incorrect statements in the written accounts that resulted from the misleading questions given by (A) each age group, and (B) each experimental group (see Table 16).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	0.999	1	0.999	3.512
Factor B (Control x Exptal)	0.444	1	0.444	1.561
A x B	0.444	1	0.444	1.561
Residual	9.111	32	0.285	

Table Q: Experiment 2(B) Results

The 4-year-olds' statements in free recall and responses to objective and leading questions were analysed using t-tests. The critical value of t ($p<.05$; d.f. = 8) was 2.306 (see Tables 17 and 18).

	t value	Degrees of Freedom	Significance
Free Recall			
Correct Statements	1.291	8	n.s.
Incorrect Statements	1.206	8	n.s.
Objective Questions			
Correct Responses	1.912	8	n.s.
Incorrect Responses	0.354	8	n.s.
"Don't know" Responses	1.543	8	n.s.
Misleading Questions			
Correct Responses	0.426	8	n.s.
Incorrect Responses	1.585	8	n.s.
"Don't know" Responses	2.236	8	n.s.

APPENDIX III

(Study 3)

Study 3: Staged Event Script

Actor's Appearance

Actor was wearing a black coat, a blue jumper, white shirt, jeans and black shoes. He carried a notebook and pen.

Actor's Script

Actor entered a room where there were 4 children. He said: "Hello. I've come to find out your names and which class you're from." He then asked the children their names, writing them down in the notebook. Once this was done he asked them the name of their teacher and also wrote this down.

He then told the children that: "Later on you'll be talking to some people who will have tape recorders and I'm going to show you how they work."

A tape recorder and microphone will be set up in a corner of the room. He takes the children over to the tape recorder and shows them how it works by asking each of them to say their names, moving the microphone from one to one. He then stops the tape and plays back their names. While playing back the tape he jokes with the children about how his and their voices sound.

Finally he says: "I'll be back later. I've got to go and make a phonecall."

Recall Instructions

Prior Recall Instructions for Discussion Present Groups

Begin by asking the children's names.

To the non-witness:

"While you were in here a man went in to the other room. I didn't see the man but _____ (witness's name) did."

"In a few minutes I'll be asking _____ (witness) some questions about the man.

Then to the witness:

"As _____ (non-witness' name) wasn't there, I want you to tell him/her all about it.

"Do you remember the man? Well I want you to tell _____ (non-witness) things like what he said, what he did and what he looked like. Can you do that?"

Then say to non-witness:

"Try to find out as much as you can, get _____ (witness) to tell you as much as he/she can remember."

Interview Recall Instructions: Child Alone - No Discussion

"I'm going to ask you some questions to see how well you can remember things. Do you remember the man who came into the room next door just now?" [Ensure that the child does remember. If necessary add: "A man came into the room a short while ago."]

"I'm very interested in what happened when he came in. As I wasn't there, I'd like you to tell me all about it. Tell me everything you can remember about the man. I'd like to know things like what he said, what he did and what he looked like. Do you think you could do that?"

"Tell me everything you can remember? It doesn't matter if you can't remember much, just do your best." [Finally, check that the child understands. Then, if the child hasn't already started talking, add: "Tell me everything that you can remember."]

Interview prompts

During Recall: Only say "Anything else" or "Go on"

Final Prompt: When the child appears to have finished say "I'd like to know things like what he said, what he did and what he looked like."

Interview Recall Instructions: Child with Peer Support - No Discussion

Say to the child who witnessed the event: "I'm going to ask you some questions to see how well you can remember things. Do you remember the man who came into the room next door just now?" [Ensure that the child does remember. If necessary add: "A man came into the room a short while ago."]

"I'm very interested in what happened when he came in. As _____ (non-witness's name) and me weren't there, I'd like you to tell us all about it. Tell us everything you can remember about the man. We'd like to know things like what he said, what he did and what he looked like. Do you think you could do that?"

"Tell us everything you can remember? It doesn't matter if you can't remember much, just do your best." [Finally, check that the child understands. Then if the child hasn't already started speaking, add: "I want you to tell me and _____ (second child's name) about what happened. Tell us everything that you can remember."]

Interview prompts

During Recall: Only say "Anything else" or "Go on"

Final Prompt: When the child appears to have finished say "I'd like to know things like what he said, what he did and what he looked like."

Interview Recall Instructions: Child With Peer Support - After Discussion

Say to the child who witnessed the event:

"I'm going to ask you some questions to see how well you can remember things. Do you remember the man who came into the room next door just now?" [If necessary add: "A man came into the room a short while ago."]

"I'm very interested in what happened when he came in. You've already told _____ (non-witness's name) about what happened, now I'd like you to tell me. Tell me everything you can remember about the man. I'd like to know things like what he said, what he did and what he looked like. Do you think you could do that?"

Then say to non-witness:

"I'd like you to help _____ (name of witness) out as much as you can. If he/she forgets anything, or says anything wrong, then can you tell me? I want you to make sure that _____(name of witness) doesn't make any mistakes."

Then to the witness:

"Tell me everything you can remember? It doesn't matter if you can't remember much, just do your best." [Finally, check that the child understands. Then, if the child hasn't already started talking, add: "Tell me everything that you can remember."]

Interview prompts

During Recall: Only say "Anything else" or "Go on"

Final Prompt: When the child appears to have finished say "I'd like to know things like what he said, what he did and what he looked like."

Interview Recall Instructions: Child Alone - After Discussion

"I'm going to ask you some questions to see how well you can remember things. Do you remember the man who came into the room next door just now?" [If necessary add: "A man came into the room a short while ago."

"I'm very interested in what happened when he came in. You've already told _____ (non-witness's name) about what happened, now I'd like you to tell me. Tell me everything you can remember about the man. I'd like to know things like what he said, what he did and what he looked like. Do you think you could do that?"

"Tell me everything you can remember? It doesn't matter if you can't remember much, just do your best." [Finally, check that the child understands. Then, if the child hasn't already started talking, add: "Tell me everything that you can remember."]

Interview prompts

During Recall: Only say "Anything else" or "Go on"

Final Prompt: When the child appears to have finished say "I'd like to know things like what he said, what he did and what he looked like."

Free Recall Coding Scheme

Each item mentioned scores as one correct statement.

1. Black hair
2. Curly hair
3. Glasses
4. Dark rimmed
5. Jacket
6. Black coat
7. Dark skin
8. Jeans / blue trousers
9. Blue jumper
10. Brown eyes
11. White shirt
12. Blue T-shirt
13. Blue socks
14. Black shoes
15. Laced
16. Badly shaven
17. A stranger/Unknown
18. Watch
19. Pen
20. Notepad

21. Asked name of child
22. Asked names of all children
23. Wrote down name(s)
24. In notepad
25. Asked name of teacher
26. Written down
27. In notepad
28. Children replied to 25
29. Asked number of class
30. Written down
31. In notepad
32. Children replied to 29

33. Said that some people will interview (talk to) them later

34. People will have tape recorders

35. He is going to demonstrate the tape recorder

36. Recorded name 37. Recorded all names

38. Rewound the tape

39. Played back the names

40. Child says other children present

41-45. Names of other children (one point per correct name, up to five)

46. Other children said their names

47. Said he'll be back

48. Said he had to make a phonecall

Statistical Analyses

Table R: Correct Free Recall Statements in Study 3

A 3-way ANOVA examined the number of correct statements in free recall given by (A) each age group, (B) the discussion absent and present groups, and (C) the peer absent and present groups (see Table 19).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	18.286	1	18.286	1.769
Factor B (No discn x discn)	144.643	1	144.643	13.990 ****
Factor C (no peer x peer)	18.286	1	18.286	1.769
A x B	1.143	1	1.143	0.111
A x C	8.643	1	8.643	0.836
B x C	48.286	1	48.286	4.670 *
A x B x C	20.643	1	20.643	1.997
Residual	496.286	48	10.339	

* = $p<.05$

**** = $p<.001$

Table S: Incorrect Free Recall Statements in Study 3

A 3-way ANOVA examined the number of incorrect statements in free recall given by (A) each age group, (B) the discussion absent and present groups, and (C) the peer absent and present groups (see Table 20).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Factor A (age 7 x 10)	1.786	1	1.786	1.579
Factor B (No discn x discn)	1.786	1	1.786	1.579
Factor C (no peer x peer)	0.286	1	0.286	0.253
A x B	0.643	1	0.643	0.568
A x C	1.143	1	1.143	1.011
B x C	1.143	1	1.143	1.011
A x B x C	0.286	1	0.286	0.253
Residual	54.286	48	1.131	

APPENDIX IV

(Powerless Speech)

Statistical Analyses

Table T: ANOCOV Powerless Speech in Study 1

A 2-way ANOCOV examined the number of powerless speech utterances in free recall given by (A) each age group, and (B) each experimental group, with the covariate of length of statement (see Table 21).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Covariate (length of statement)	12.630	1	12.630	2.900
Factor A (age 7 x 10)	25.375	1	25.375	5.826 *
Factor B (Control x Exptal)	3.427	2	1.713	0.393
A x B	0.782	2	0.391	0.090
Residual	230.841	53	4.355	

* = $p<.05$

Table U: ANOCOV Powerless Speech in Study 2

A 2-way ANOCOV examined the number of powerless speech utterances in free recall given by (A) each age group, and (B) each experimental group, with the covariate of length of statement (see Table 22).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Covariate (length of statement)	77.621	1	77.621	11.411 ***
Factor A (age 7 x 10)	0.326	1	0.326	0.048
Factor B (Control x Exptal)	1.679	1	1.679	0.247
A x B	1.006	1	1.006	0.148
Residual	210.862	31	6.802	

*** = $p<.005$

Table V: ANOCOV Powerless Speech in Study 3

A 3-way ANOCOV examined the number of powerless speech utterances in free recall given by (A) each age group, (B) the discussion absent and present groups, and (C) the peer absent and present groups, with the covariate of length of statement (see Table 23).

Source of Variance	Sums of Squares	Degrees of Freedom	Variance	F ratios
Covariate (length of statement)	161.453	1	161.453	18.412 ****
Factor A (age 7 x 10)	0.127	1	0.127	0.015
Factor B (No discn x discn)	3.486	1	3.486	0.397
Factor C (no peer x peer)	3.693	1	3.693	0.421
A x B	0.050	1	0.050	0.006
A x C	26.382	1	26.382	3.009
B x C	0.753	1	0.753	0.086
A x B x C	1.450	1	1.450	0.165
Residual	412.148	47	8.769	

**** = $p<.001$

REFERENCES

References

Allport G.W. and Postman L. (1947) The Psychology of Rumor. New York: Henry Holt.

Anderson R.C. and Pichert J.W. (1978) Recall of previously unrecallable information following a shift in perspective. Journal of Verbal Learning and Verbal Behaviour, 17, 1-12.

deAraujo G., Van Arsdel P.P., Holmes T.H. and Dudley D.L. (1973) Life change, coping ability and chronic intrinsic asthma. Journal of Psychosomatic Research, 17, 359-363.

Atkinson J. (1988) What I *really* mean is.... The Psychologist, 1, 520.

Barnett K., Darcie G., Holland C.J. and Kobasigawa A. (1982) Children's cognitions about effective helping. Developmental Psychology, 18, 267-277.

Bartlett F.C. (1932) Remembering: A Study in Experimental and Social Psychology. Cambridge: Cambridge University Press.

Bekerian D.R. and Bowers J.M. (1983) Eyewitness testimony: Were we misled? Journal of Experimental Psychology, 9, 139-145.

Berger C.R. and Bradac J.J. (1982) Language and Social Knowledge: Uncertainty in Interpersonal Relations. New York: Edward Arnold.

Berliner L. and Barbieri M.K. (1984) The testimony of the child victim of sexual assault. Journal of Social Issues, 40 (2), 125-137.

Berndt T.J. and Perry T.B. (1986) Children's perceptions of friendships as supportive relationships. Developmental Psychology, 22, 640-648.

Bjorklund D.F. and Harnishfeger H.K. (1987) Developmental differences in the mental effort requirements for the use of an organizational strategy in free recall. Journal of Experimental Child Psychology, 44, 109-125.

Bjorklund D.F. and Jacobs J.W. (1985) Associative and categorical processes in children's memory: The role of automaticity in the development of organization in free recall. Journal of Experimental Child Psychology, 39, 599-617.

Bjorklund D.F. and Muir J.E. (1987) Children's development of free recall memory: Remembering on their own. In Vasta R. (ed.) Annals of Child Development. Vol. 5. Connecticut: Jai Press.

Bjorklund D.F., Ornstein P.A. and Haig J.R. (1977) Developmental differences in organization and recall: Training in the use of organizational techniques. Developmental Psychology, 13, 175-183.

Bowers J.M. and Bekerian D.A. (1984) Will postevent information distort eyewitness testimony? Journal of Applied Psychology, 69, 466-472.

Bridges A. (1985) 'Ask a silly question...': Some of what goes on in language comprehension tests. Child Language Teaching and Therapy, 1, 135-148.

Brown A.L. and DeLoache J.S. (1978) Methods for observing developmental change in memory. In Siegler R.S. (ed.) Children's Thinking: What develops? New York: Lawrence Erlbaum.

Brown A.L., Smiley S.S., Day J.D., Townsend M.A. and Lawton S.C. (1977) Intrusion of a thematic idea in children's comprehension and retention of stories. Child Development, 48, 1454-1466.

Buckhout R. (1974) Eyewitness testimony. Scientific American, 231, 23-31.

Bull R. and Clifford B. (1976) Identification: The Devlin Report. New Scientist, 6th May.

Butler-Sloss E. (1988) Report of the Inquiry into Child Abuse in Cleveland 1987. London: HMSO.

Carey S. (1978) 'Less' never means 'more'. In Campbell R.N. and Smith P.T. (eds.) Recent advances in the Psychology of Language: Language Development and Mother-Child Interaction. London: Plenum Press.

Carver C.S. and Humphries C. (1981) Havana daydreaming: A study of self-conciousness and the negative reference group among Cuban Americans. Journal of Personality and Social Psychology, 40, 545-552.

Ceci S.J. (1980) A developmental study of multiple encoding and its relationship to age-related changes in free recall. Child Development, 51, 892-895.

Ceci S.J., Caves R.D. and Howe M.J.A. (1981) Children's long-term memory for information that is incongrous with their prior knowledge. British Journal of Psychology, 72, 443-450.

Ceci S.J., Ross D.F. and Toglia M.P. (1987) Suggestibility of children's memory: Psycholegal implications. Journal of Experimental Psychololgy: General, 116, 38-49.

Charnley H. (1987) Child Sexual Abuse: Joint Investigative Report. The Metropolitan Police and London Borough of Bexley, Social Services Department. Evaluation Report. *London: HMSO.*

Chi M.T.H. (1978) Knowledge structure and memory development. In Siegler R. (ed.) Children's Thinking: What Develops? New Jersey: Lawrence Erlbaum.

Children's Interests Bureau (1988) Law reform: Evidence Act. Interesting: The Official Newsletter of the Children's Interests Bureau, No. 4, July.

Christiaansen R.E., Sweeney J.D. and Ochalek K. (1983) Influencing eyewitness descriptions. Law and Human Behavior, 7, 59-65.

Coates D. and Wortman C.B. (1980) Depression maintenance and interpersonal control. In Baum A. and Singer J. (eds.) Advances in Environmental Psychology: Applications of Personal Control. Vol. 4. Hillsdale, NJ: Lawrence Erlbaum.

Cohen R.L. and Harnick M.A. (1980) The susceptibility of child witnesses to suggestion. Law and Human Behaviour, 4, 201-210.

Cole C.B. and Loftus E.F. (1987) The memory of children. In Ceci S.J., Toglia M.P. and Ross D.F. (eds.) Children's Eyewitness Testimony. London: Springer-Verlag.

Cole M., Frankel F. and Sharp D. (1971) Development of free recall learning in children. Developmental Psychology, 4, 109-123.

Costanza R.S., Derlega V.J. and Winstead B. (1988) Positive and negative forms of social support: Effects of conversational topics on coping with stress among same sex friends. Journal of Experimental Child Psychology, 24, 182-193.

Cutler B.L., Fisher R.P. and Chicvara C.L. (1988) Person identification from live versus videotaped lineups. To appear in Journal of Police Science and Administration.

Daily Mail (1987) Child sex men behind screen found guilty. Tuesday November 3, 5.

Daily Telegraph (1987) Child witnesses in tears behind court screen. Wednesday October 21, 3.

Dale P.S., Loftus E.F. and Rathbun L. (1978) The influence of the form of the question on the eyewitness testimony of preschool children. Journal of Psycholinguistic Research, 7, 269-277.

Davies G.M. (1988a) Use of video in child abuse trials. The Psychologist, 1, 20-22.

Davies G.M. (1988b) Child witness update. The Psychologist, 1, 400.

Davies G.M. and Brown L. (1978) Recall and organization in five year old children. British Journal of Psychology, 69, 343-349.

Davies G.M., Flin R. and Baxter J. (1986) The Child Witness. The Howard Journal, 25, 81-99.

Deffenbacher K.A. (1983) The influence of arousal on reliability of testimony. In Lloyd-Bostock S.M.A and Clifford B.R. (eds.) Evaluating Witness Evidence. Chichester: John Wiley & Sons Ltd.

DeFrancis V. (1969) Protecting the Child Victim of Sex Crimes Committed by Adults. Denver: American Humane Association.

Dent H.R. (1977) Stress as a factor in influencing person recognition in identification parades. Bulletin of the British Psychological Society, 30, 339-340.

Dent H.R. (1982) The effects of interviewing strategies on the results of interviews with child witnesses. In Trankell A. (ed.) Reconstructing the Past: The Role of Psychologists in Criminal Trials. Kluwer: Deventer.

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

Dent H.R. and Stephenson G.M. (1979b) Identification evidence: Experimental investigation of factors affecting the reliability of juvenile and adult witnesses. In Farrington D.P., Hawkins K. and Lloyd-Bostock S.M. (eds.) Psychology, Law and Legal Processes. London: Macmillan.

Dodd D.H. and Bradshaw J.M. (1980) Leading questions and memory: Pragmatic constraints. Journal of Verbal Learning and Verbal Behavior, 19, 695-704.

Doise W. (1978) Groups and Individuals: Explanations in Social Psychology. Cambridge: Cambridge University Press.

Doise W., Mugny C. and Perret-Clermont A.N. (1975) Social interaction and the development of cognitive operations. European Journal of Social Psychology, 5, 367-83.

Duncan E.M., Whitney P. and Kunen S. (1982) Integration of visual and verbal information in children's memories. Child Development, 53, 1215-1223.

Eagly A.H. (1983) Gender and social influence: A social psychological analysis. American Psychologist, 971-981.

Easterbrook J.A. (1959) The effect of emotion on cue utilization and the organization of behavior. Psychological Review, 66, 183-201.

Eckenrode J., Powers J., Doris J., Munsch J. and Bolger N. (1988) Substantiation of child abuse and neglect reports. Journal of Consulting and Clinical Psychology, 56, 9-16.

Edwards C. and Lewis M. (1979) Young children's concepts of social relations: Social functions and social objects. In Lewis M. and Rosenblum L. (Eds.) The Child and Its Family. New York: Plenum Press.

Edwards D. and Middleton D. (1986a) Joint remembering: Constructing an account of shared experience through conversational discourse. Discourse Processes, 9, 423-459.

Edwards D. and Middleton D. (1986b) Text for memory: Joint recall with a scribe. Human Learning, 5, 125-138.

Elliott R. (1985) On the reliability of *Eyewitness Testimony*: A retrospective review. Psychological Reports, 57, 219-226.

Erickson B., Lind E.A., Johnson B.C. and O'Barr W.M. (1978) Speech style and impression formation in a court setting: The effects of "powerful" and "powerless" speech. Journal of Experimental Social Psychology, 14, 266-279.

Eysenck M.W. (1982) Attention and Arousal. New York: Springer-Verlag.

Faller K.C. (1988) Child Sexual Abuse: An Interdisciplinary Manual for Diagnosis, Case Management, and Treatment. New York: Columbia University Press.

Finkelhor D. (1979) Sexually Victimized Children. New York: The Free Press.

Fivush R., Hudson J. and Nelson K. (1984) Children's long-term memory for a novel event: An exploratory study. Merrill-Palmer Quarterly, 30, 303-316.

Flapan D. (1968) Children's Understanding of Social Interaction. New York: Teacher's College Press.

Flavell J.H. (1977) Cognitive Development. New Jersey: Prentice-Hall.

Flavell J.H., Beach D.R. and Chinsky J.M. (1966) Spontaneous verbal rehearsal in a memory task as a function of age. Child Development, 37, 283-299.

Fleming R., Baum A., Gisriel M.M. and Gatchel R.J. (1982) Mediating influences of social support at Three Mile Island. Journal of Human Stress, 8, 14-22.

Flin R., Davies G.M. and Stevenson Y. (1987) Children as witnesses: Psychological aspects of the English and Scottish system. Medicine and Law, 6, 275-291.

Forbes D.D.S. (1988) A two-year-old's memory observed. The Psychologist, 1, 27-31.

Forward S. and Buck C. (1981) Betrayal of Innocence: Incest and its Devastation. Harmondsworth: Penguin.

Freud S. (1953) The Complete Psychological Works of Sigmund Freud. (Standard edition, Vol. 7) London: Hogarth Press (originally published 1905).

Froming W.J., Walker G.R. and Lopyan K.J. (1982) Public and private self-awareness: When personal attitudes conflict with societal expectations. Journal of Experimental Social Psychology, 18, 476-487.

Gibling F. and Davies G. (1988) Reinstatement of context following exposure to post-event information. British Journal of Psychology, 79, 129-141.

Giles H. and Powesland P.F. (1979) Speech Style and Social Evaluation. European Monographs in Social Psychology, 7. London: Academic Press.

Goodman G.S. (1984a) The child witness: An introduction. Journal of Social Issues, 40 (2), 1-7.

Goodman G.S. (1984b) Children's testimony in historical perspective. Journal of Social Issues, 40 (2), 9-31.

Goodman G.S. (1984c) The child witness: Conclusions and future directions for research and legal practice. Journal of Social Issues, 40 (2), 157-175.

Goodman G.S., Aman C. and Hirschman J. (1987) Child sexual and physical abuse. In Ceci S.J., Toglia M.P. and Ross D.F. (eds.) (1987) Children's Eyewitness Memory. London: Springer-Verlag.

Goodman G.S., Golding J.M. and Haith M.M. (1984) Jurors' reactions to child witnesses. Journal of Social Issues, 40 (2), 139-156.

Goodman G.S., Golding J.M. and Helgeson V.S., Haith M.M. and Michelli J. (1987) When a child takes the stand. Law and Human Behavior, 11, 27-40.

Goodman G.S., Jones D.P.H., Pyle E.A., Prado-Estrada L., Port L.K., England P., Mason R. and Rudy L. (1988) The emotional effects of criminal court testimony on child sexual assault victims: A preliminary report. In Davies G.M. and Drinkwater J. (eds.) The Child Witness: Do Courts Abuse Children? Issues in Criminological and Legal Psychology, Number 13. Leicester: British Psychological Society, Division of Criminological and Legal Psychology.

Goodman G.S. and Michelli J.A. (1981) Would you believe a child witness? Psychology Today, November, 82-95.

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

Goodwin J., Sahd D. and Rada R.T. (1982) False accusations and false denials of incest: Clinical myths and clinical realities. In Goodwin J. (ed.) Sexual Abuse: Incest Victims and Their Families. Bristol: John Wright.

Green A.H. (1986) True and false allegations of sexual abuse in child custody reports. Journal of the American Academy of Child Psychiatry, 25, 440-456.

Grieve R. and Stanley S. (1984) Less obscure? Pragmatics and 3-4-year-old children's semantics. British Journal of Developmental Psychology, 2, 95-103.

Gross A.M., Stern R.M., Levin R.B., Dale J. and Wojnilower D.A. (1983) The effect of mother-child separation on the behavior of children experiencing a diagnostic medical procedure. Journal of Consulting and Clinical Psychology, 51, 783-785.

Guttentag R.E. (1984) The mental effort requirement of cumulative rehearsal: A developmental study. Journal of Experimental Child Psychology, 37, 92-106.

Hammersley R. and Read J.D. (1986) What is integration? Remembering a story and remembering false implications about the story. British Journal of Psychology, 329-341.

Harari H. and McDavid J.W. (1969) Situational influence on moral justice: A study on "finking". Journal of Personality and Social Psychology, 11, 240-244.

Hedderman C. (1987) Children's Evidence: The Need For Corroboration. Research and Planning Unit, paper 41. London: Home Office

Hobfoll S.E. and London P. (1986) The relationship of self-concept and social support to emotional distress among women during the war. Journal of Social and Clinical Psychology, 4, 189-203.

Hollin C.R. and Clifford B. (1983) Eyewitness testimony: The effects of discussion on recall accuracy and agreement. Journal of Applied Social Psychology, 13, 234-244.

Hosch H.H. and Cooper D.S. (1982) Victimization as a determinant of eyewitness accuracy. Journal of Applied Psychology, 67, 649-652.

Hosch H.H., Leippe M.R., Marchioni P.M and Cooper D.S (1984) Victimization, self-monitoring, and eyewitness identification. Journal of Applied Psychology, 69, 280-288.

Hovland C.I. and Weiss W. (1951) The influence of source credibility on communication effectiveness. Public Opinion Quarterly, 15, 635-650.

Hughes M. and Grieve R. (1980) On asking children bizarre questions. First Language, 1, 149-60.

Istomina Z.M. (1975) The development of voluntary memory in children. Soviet Psychology, 13, 5-64.

Johnson M.K. and Foley M.A. (1984) Differentiating fact from fantasy: The reliability of children's memory. Journal of Social Issues, 40 (2), 33-50.

Johnson S.L. (1985) Black innocence and the white jury. Michigan Law Review, 83, 1611-1708.

Jones D.P.H. (1987) The evidence of a three-year-old child. Criminal Law Review, 677-681.

Jones D.P.H. and Krugman R.D. (1986) Case report: Can a three year old child bear witness to her sexual assault and attempted murder? Child Abuse and Neglect, 10, 253-258.

Kail R. (1979) The Development of Memory in Children. San Francisco: W.H. Freeman and Co.

Kallio K.D. and Cutler B.L. (1987) Does lexical marking affect eyewitness recall? The Journal of Psychology, 12, 249-258.

Kassin S.K. (1984) Eyewitness identification: Victims versus bystanders. Journal of Applied Social Psychology, 14, 519-529.

Keeney T.J., Cannizo S.R. and Flavell J.H. (1967) Spontaneous and induced verbal rehearsal in a recall task. Child Development, 38, 953-966.

King M.A. and Yuille J.C. (1986) An investigation of the eyewitness abilities of children. Unpublished manuscript, University of British Columbia.

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

Kobasigawa A. (1974) Utilization of retrieval cues by children in recall. Child Development, 45, 127-134.

Kobasigawa A. and Middleton D.B. (1972) Free recall of categorized items by children at three grade levels. Child Development, 43, 1067-1072.

Kohnken G. and Brockmann C. (1987) Unspecific postevent information, attribution of responsibility, and eyewitness performance. Applied Cognitive Psychology, 1, 197-207.

Kruger A.C. and Tomasello M. (1986) Transactive discussions with peers and adults. Developmental Psychology, 22, 681-685.

Kuehn L.L. (1974) Looking down a gun barrel: Person perception and violent crime. Perceptual and Motor Skills, 39, 1159-1164.

Kwock M.S. and Winer G.A. (1986) Overcoming leading questions: Effects of psychosocial task variables. Journal of Educational Psychology, 78, 289-293.

Labov W. (1969) The logic of non-standard English. Originally published in Georgetown Monographs on Language and Linguistics. Excerpts reprinted in Williams F. (ed.) (1970) Language and Poverty. Chicago: Markham.

Lakoff R. (1975) Language and Woman's Place. New York: Harper & Row.

Lange G. (1973) The development of conceptual and rote recall skills among school-age children. Journal of Experimental Child Psychology, 15, 394-407.

Lange G. (1978) Organization-related processes in children's recall. In Ornstein P.A. (ed.) Memory Development in Children. New Jersey: Lawrence Erlbaum.

Lefcourt H.M. (1985) Intimacy, social support, and locus of control as moderators of stress. In I.G. Sarason and B.R. Sarason (eds.) Social Support: Theory, Research and Applications. Dordrecht: Martinus Nijhoff.

Lefcourt H.M., Martin R.A. and Saleh W.E. (1984) Locus of control and social support: Interactive moderators of stress. Journal of Personality and Social Psychology, 47, 378-389.

Leippe M.R. and Romanczyk A. (1987) Children on the witness stand: A communication/persuasion analysis of jurors' reactions to child witnesses. In Ceci S.J., Toglia M.P. and Ross D.F. (eds.) (1987) Children's Eyewitness Memory. London: Springer-Verlag.

Liben L.S. (1982) The developmental study of children's memory. In Field T.M., Huston A., Quay H.C., Troll L. and Finley G. (eds.) Review of Human Development. New York: John Wiley and Sons.

Light P. (1983) Social interaction and cognitive development: A review of post-Piagetian research. In Meadows S. (ed.) Developing Thinking. London: Methuen.

Light P.H., Buckingham N. and Robbins A.H. (1979) The conservation task as an interactional setting. British Journal of Educational Psychology, 49, 304-310.

Light P. and Glachan M. (1985) Facilitation of individual problem solving through peer interaction. Educational Psychology 5, 217-225.

Lind E.A. and O'Barr W.M. (1979) The social significance of speech in the courtroom. In Giles H. and St. Clair R.N. (eds.) Language and Social Psychology. Oxford: Basil Blackwell.

Lindberg M. (1980) Is knowledge base development a necessary and sufficient condition for memory development? Journal of Experimental Child Psychology, 30, 401-410.

Lindner K.C., Sarason I.G. and Sarason B.R. (1986) Assessed life stress and experimentally provided social support. In Spielberger C.D. and Sarason I.G. (eds.) Stress and Anxiety. Vol. 11. Washington: Hemisphere.

List J.A. (1986) Age and schematic differences in the reliability of eyewitness testimony. Developmental Psychology, 22, 50-57.

Lloyd P. and Donaldson M. (1976) On a method of eliciting true/false judgements from young children. Journal of Child Language, 3, 411-416.

Loftus E.F. (1979a) Eyewitness Testimony. Cambridge, Mass: Harvard University Press.

Loftus E.F. (1979b) The malleability of human memory. American Scientist, 67, 312-320.

Loftus E.F. and Davies G.M. (1984) Distortions in the memory of children. Journal of Social Issues, 40 (2), 51-67.

Loftus E.F. and Goodman J. (1985) Questioning witnesses. In Kassin S.M. and Wrightsman L.S. (ed.) The Psychology of Evidence and Trial Procedure. London: Sage.

Loftus E.F., Loftus G.R. and Messo J. (1987) Some facts about "weapon focus". Law and Human Behavior, 11, 55-62.

Loftus E.F., Miller D.G. and Burns H.J. (1978) Semantic integrations of verbal information into a visual memory. Journal of Experimental Psychology: Human Learning and Memory, 4, 19-31.

Loftus E.F. and Monahan J. (1980) Trial by data: Psychological research as legal evidence. American Psychologist, 35, 270-283.

Loftus E.F. and Palmer J.C. (1974) Reconstruction of automobile destruction. Journal of Verbal Learning and Verbal Behaviour, 13, 585-589.

Loftus E.F. and Zanni G. (1975) Eyewitness testimony: The influence of the wording of a question. Bulletin of the Psychonomic Society, 5, 86-88

Lomov B.F. (1978) Psychological processes and communication. Soviet Psychology, 17, 3-32.

MacDonald J.M. (1971) Rape: Offenders and Their Victims. Illinois: Charles Thomas.

Macfarlane K. and Krebs S. (1986) Techniques for interviewing and evidence gathering. In MacFarlane K., Waterman J., Conerly S., Damon L., Durfee M. and Long S. (eds.) Sexual Abuse of Young Children. London: Holt, Rinehart and Winston.

Malpass R.S. and Devine P.G. (1981) Realism and eyewitness identification research. Law and Human Behaviour, 4, 347-358.

Maratsos M.P. (1973) Nonegocentric communication abilities in preschool children. Child Development, 44, 697-700.

Marin B.V., Holmes D.L., Guth M. and Kovac P. (1979) The potential of children as witnesses. Law and Human Behaviour, 3, 295-306.

Markman E.M. (1977) Realizing that you don't understand. Child Development, 48, 986-992.

McCarty D.G. (1929) Psychology for the Lawyer. New York: Prentice-Hall.

McCloskey M. and Egeth H.E. (1983) What can a psychologist tell a jury? American Psychologist, 38, 550-563.

McCloskey M. and Zaragoza M. (1985) Misleading postevent information and memory for events: Arguments and evidence against memory impairment hypotheses. Journal of Experimental Psychology: General, 114, 1-16.

McDevitt T.M. and Carroll M. (1988) Are you trying to trick me? Some social influences on children's responses to problematic messages. Merrill-Palmer Quarterly, 34, 131-145.

McGarrigle J. and Donaldson M. (1975) Conservation accidents. Cognition, 3, 341-350.

McGarrigle J., Grieve R. and Hughes M. (1978) Interpreting inclusion: A contribution to the study of the child's cognitive and linguistic development. Journal of Experimental Child Psychology, 25, 1528-50.

Melamed B.G. and Siegel L.J. (1984) Children's reactions to medical stressors: An ecological approach to the study of anxiety. Originally published in Tuma A.H. and Musor J. (eds.) Anxiety and the Anxiety Disorders. 1984. Lawrence Erlbaum. Reprinted in Hetherington E.M. and Parke R.D. (eds.) (1988) Contemporary Readings in Child Psychology. Third Edition. New York: McGraw-Hill.

Menig-Peterson C.L. (1975) The modification of communicative behaviour in preschool-aged children as a function of the listener's perspective. Child Development, 46, 1015-1018.

Metropolitan Police and Bexley Social Services (1987) Child Sexual Abuse Joint Investigative Programme Bexley Experiment Final Report. London: HMSO.

Miller G.R. and Burgoon (1982) Factors affecting assessments of witness credibility. In Kerr N.L. and Bray R.M. (eds.) The Psychology of the Courtroom. London: Academic Press.

Moely B.E., Olson F.A., Halwes T.G. and Flavell J.H. (1969) Production deficiency in young children's clustered recall. Developmental Psychology, 1, 26-34.

Moston S. (1985) An Experimental Study of the Suggestibility of Children in an Eyewitness Memory Task. Unpublished M.Sc. thesis, University of Manchester.

Moston S. (1987) The suggestibility of children in interview studies. First Language, 7, 67-78.

Mugny G., Perret-Clermont A.N. and Doise W. (1981) Interpersonal coordinations and sociological differences in the construction of the intellect. In Stephenson G.M. and Davis J.M. (eds.) Progress in Applied Social Psychology. 1. Chichester: John Wiley & Sons.

Murray D.M. and Wells G.L. (1982) Does knowledge that a crime was staged affect eyewitness performance? Journal of Applied Social Psychology, 12, 42-53.

Murray K. (1988) Research Paper on Evidence from Children: Alternatives to In-Court Testimony in Criminal Proceedings in the United States of America. Edinburgh: Scottish Law Commission.

National Society for the Prevention of Cruelty to Children (1986) Child Sexual Abuse - Dramatic New Figures, New Guidance. NSPCC Press Release, 21 March.

Neilson I., Dockrell J. and McKechnie J. (1983) Does repetition of the question influence children's performance in conservation tasks. British Journal of Developmental Psychology, 1, 163-174.

Neisser U. (1979) The control of information pickup in selective looking. In Pick. A.D. (ed.) Perception and Its Development: A Tribute to Eleanor Gibson. New Jersey: Lawrence Erlbaum.

Neisser U. (1981) John Dean's memory: A case study. In Neisser U. (ed.) (1982) Memory Observed: Remembering in Natural Contexts. San Francisco: W.H. Freeman and Co.

Nelson K. and Ross G. (1980) The generalities and specifics of long-term memory in infants and young children. New Directions for Child Development, 10, 87-102.

Nelson-LeGall S. (1981) Help-seeking: An understudied problem skill in children. Developmental Review, 1, 224-246.

Nelson-LeGall S.A. and Gumerman R.A. (1984) Children's perceptions of helpers and helper motivation. Journal of Applied Developmental Psychology, 5, 1-12.

Newcombe and Arnkoff (1979) Effects of speech style and sex of speaker on person perception. Journal of Personality and Social Psychology, 37, 1293-1303.

Nisbett R.E. and DeCamp Wilson T. (1977) Telling more than we can know: Verbal reports on mental processes. Psychological Review, 84, 231-259.

Northman J. (1978) Developmental changes in preferences for help. Journal of Clinical Child Psychology, Summer, 129-132.

Olson D.R. and Torrance N.G. (1983) Literacy and cognitive development: A conceptual transformation in the early school years. In Meadows S. (ed.) Developing Thinking. London: Methuen.

Orne M.T. (1962) On the social psychology of the psychological experiment. American Psychologist, 17, 776-783.

Ornstein P.A. and Corsale K. (1979) Organizational factors in children's memory. In Puff C.R. (ed.) Memory Organization and Structure. London: Academic Press.

Ornstein P.A. and Naus M.J. (1985) Effects of the knowledge base on children's memory strategies. Advances in Child Development and Behavior, 19, 113-148.

Ornstein P.A., Naus M.J. and Stone (1977) Rehearsal training and developmental differences in memory. Developmental Psychology, 13, 15-24.

Paris S.G., Newman R.S. and Jacobs J.E. (1985) Social contexts and functions of children's remembering. In Brainerd C.J. and Pressley M. (eds.) The Cognitive Side of Memory Development. New York: Springer-Verlag.

Paris S.G. and Upton L.R. (1976) Children's memory for inferential relationships in prose. Child Development, 47, 660-668.

Parker J.F., Haverfield E. and Baker-Thomas S. (1986) Eyewitness testimony of children. Journal of Applied Social Psychology, 16, 287-302.

Parker J.Y. (1982) The rights of child witnesses: Is the court a protector or perpetrator? New England Law Review 17, 643-717.

Pear T. and Wyatt S. (1914) The testimony of normal and mentally defective children. British Journal of Psychology, 3, 388-419.

Peters D.P. (1987) The impact of naturally occuring stress on children's memory. In Ceci S.J., Toglia M.P. and Ross D.F. (eds.) (1987) Children's Eyewitness Memory. London: Springer-Verlag.

Piaget J. (1932) The Moral Judgment of the Child. London: Routledge and Kegan Paul.

Piaget J. and Inhelder B. (1973) Memory and Intelligence. London: Routledge and Kegan Paul.

Porter R. (ed.) (1984) Child Sexual Abuse within the Family. London: Ciba Foundation.

Pratt M.W, Scribner S. and Cole M. (1977) Children as teachers: Developmental studies of instructional communication. Child Development, 48, 1481.

Pynoos R.S. and Eth S. (1984) The child as witness to homicide. Journal of Social Issues, 40 (2), 87-108.

Read J.D., Barnsley R.H., Ankers K. and Whishaw I.Q. (1978) Variations in severity of verbs and eyewitnesses' testimony: an alternative interpretation. Perceptual and Motor Skills, 46, 795-800.

Richman C.L., Nida S. and Pittman L. (1976) Effects of meaningfulness on child free-recall learning. Developmental Psychology, 12, 460-465.

Rogoff B. (1986) Adult assistance of children's learning. In Raphael T.E. (ed.) The Contexts of School-Based Literacy. New York: Random House.

Rogoff B. (1987) The joint socialization of development by young children and adults. In Lewis M. and Feinman S. (eds.) Social Influences and Behavior. New York: Plenum Press.

Rogoff B. and and Gardner W.P. (1984) Guidance in cognitive development: An examination of mother-child instruction. In Rogoff B. and Lave J. (eds.) Everyday Cognition: Its Development in Social Context. Cambridge, Mass.: Harvard University Press.

Rose S.A. and Blank M. (1974) The potency of context in children's cognition: An illustration through conservation. Child Development, 45, 499-502.

Ross D.F., Miller B.S., Ceci S.J. and Moran P.B. (1987) Mock jurors' reactions to child witnesses. Proceedings and Abstracts of the Annual Meeting of the Eastern Psychological Association, 58, 45.

Ross D.F., Miller B.S. and Moran P.B. (1987) The child in the eyes of the jury: Assessing mock jurors' reactions to child witnesses. In Ceci S.J., Toglia M.P. and Ross D.F. (eds.) (1987) Children's Eyewitness Memory. London: Springer-Verlag.

Rouke F.L. (1957) Psychological research on problems of testimony. Journal of Social Issues, 13, 50-59.

Russel D. (1983) The incidence and prevalence of intrafamilial and extrafamilial sexual abuse of female children. Child Abuse and Neglect, 7, 133-146.

Sanders G.S. and Warnick D.H. (1982) Evaluating identification evidence from multiple eyewitnesses. Journal of Applied Social Psychology, 12, 182-192.

Sandler I., Wolchik S. and Braver S. (1985) Social support and children of divorce. In Sarason I.G. and Sarason B.R. (eds.) Social Support: Theory, Research and Applications. Dordrecht: Martinus Nijhoff.

Sarason I.G. (1981) Test anxiety, stress and social support. Journal of Personality, 49, 101-114.

Sarason I.G. and Sarason B.R. (1986) Experimentally provided social support. Journal of Personality and Social Psychology, 50, 1222-1225

Schachter S. (1959) The Psychology of Affiliation. Stanford: Stanford University Press.

Schmidt C.R. and Schmidt S.R. (1986) The use of themes as retrieval cues in children's memory for stories. Journal of Experimental Child Psychology, 42, 237-255.

Schneider W. and Brun H. (1987) The role of context in young children's memory performance: Istomina revisited. British Journal of Developmental Psychology, 5, 333-341.

Scottish Law Commission (1988) The Evidence of Children and Other Potentially Vulnerable Witnesses. Scottish Law Commission. Discussion Paper No. 75. Edinburgh: Scottish Law Commission.

Sheingold K. and Tenney Y.J. (1982) Memory for a salient childhood event. In Neisser U. (ed.) Memory Observed: Remembering in Natural Contexts. San Francisco: W.H. Freeman and Co.

Shephard R.N. (1967) Recognition memory for words, sentences and pictures. Journal of Verbal Learning and Verbal Behavior, 6, 156-163.

Smith V.L. and Ellsworth P.C. (1987) The social psychology of eyewitness accuracy: Misleading questions and communicator expertise. Journal of Applied Psychology, 72, 294-300.

Sodian B., Schneider W. and Perlmutter M. (1986) Recall, clustering, and metamemory in young children. Journal of Experimental Child Psychology, 41, 395-410.

Sommerville S.C., Wellman H.M. and Cultice J.C. (1983) Young children's deliberate reminding. Journal of Genetic Psychology, 143, 87-96.

Spencer J.R. (1987a) Child witnesses, video-technology and the law of evidence. The Criminal Law Review, 76-83.

Spencer J.R. (1987b) Child witnesses, corroboration and expert evidence. The Criminal Law Review, 239-251.

Stein N.L. and Glenn C.G. (1979) An analysis of story comprehension in elementary school children. In Freedle R.O. (ed.) New Directions in Discourse Processing. 2. New Jersey: Ablex.

Stephenson G.M., Abrams D., Wagner W. and Wade. G. (1986) Partners in recall: Collaborative order in the recall of a police interrogation. British Journal of Social Psychology, 25, 341-343.

Stephenson G.M., Brandstatter H. and Wagner W. (1983) An experimental study of social performance and delay on the testimonial validity of story recall. European Journal of Social Psychology, 13, 175-191.

Stern W. (1910) Abstracts of lectures on the psychology of testimony and on the study of individuality. American Journal of Psychology, 21, 270-282.

Strohner H. and Nelson K.E. (1974) The young child's development of sentence comprehension: Influence of event probability, nonverbal context, syntactic form, and strategies. Child Development, 45, 567-576.

Summit R.C. (1983) The child sexual abuse accomodation syndrome. Child Abuse and Neglect, 7, 177-193.

Terr L.C. (1981) Psychic trauma in children. American Journal of Psychiatry, 138, 14-19.

Thoits P.A. (1986) Social support as coping assistance. Journal of Consulting and Clinical Psychology, 54, 416-423.

Todd C.M. and Perlmutter M. (1980) Reality recalled by preschool children. New Directions for Child Development, 10, 69-86.

Trankell A. (1958) Was Lars sexually assaulted? A study in the reliability of witnesses and experts. Journal of Abnormal and Social Psychology, 56, 385-395.

Treadway M. and McCloskey M. (1987) Cite unseen: Distortions in the Allport and Postman rumor study in the eyewitness testimony literature. Law and Human Behavior, 11, 19-25.

Turtle J.W. and Wells G.L (1987) Setting the stage for psychological research on the child eyewitness. In Ceci S.J., Toglia M.P. and Ross D.F. (eds.) Children's Eyewitness Memory. London: Springer-Verlag.

Vernon D.T.A., Foley J.M. and Schulman J.L. (1967) Effect of mother-child separation and birth order on young children's responses to two potentially stressful experiences. Journal of Personality and Social Psychology, 5, 162-174.

Vygotsky L.S. (1978) Mind in Society: The Development of Higher Psychological Processes. Cambridge, Mass: Harvard University Press.

Warnick D.H. and Sanders G.S. (1980) Why do eyewitnesses make so many mistakes? Journal of Applied Social Psychology, 10, 362-367.

Weinberg H.I. and Baron R.S. (1982) The discredible eyewitness. Personality and Social Psychology Bulletin, 8, 60-67.

Weissberg J.A. and Paris S.G. (1986) Young children's remembering in different contexts: A reinterpretation of Istomina's study. Child Development, 57, 1123-1129.

Wellman H.M. and Somerville S.C. (1980) Quasi-naturalistic tasks in the study of cognition: The memory related skills of toddlers. New Directions for Child Development, 10, 33-48.

Wertsch J.V. (1979) From social interaction to higher psychological processes. Human Development, 22, 1-22.

Wertsch J.V., McNamee G.D., McLane J.B. and Budwig N.A. (1980) The adult-child dyad as a problem solving system. Child Development, 51, 1215-1221.

Whipple G.M. (1909) The observer as reporter: A survey of the psychology of testimony. Psychological Bulletin, 6, 153-170.

Whipple G.M. (1913) Review of "Les temoignes d'enfants dans un proces retentissant" by J. Varendonck. Journal of Criminal Law and Criminology, 4, 150-154.

Whitley B.E. (1987) The effects of discredited eyewitness testimony: A meta-analysis. Journal of Social Psychology, 127, 209-214.

Wicklund R.A. (1980) Group contact and self-focused attention. In Paulus P.B. (ed.) Psychology of Group Influence. New Jersey: Lawrence Erlbaum.

Wicklund R.A. and Duval S. (1971) Opinion change and performance facilitation as a result of objective self-awareness. Journal of Experimental Social Psychology, 7, 319-342.

Wilcox S. and Palermo D.S. (1982) Children's use of lexical and non-lexical information in responding to commands. Journal of Child Language, 9, 139-150.

Winer G.A., Hemphill J. and Craig R.K. (1988) The effect of misleading questions in promoting nonconservation responses in children and adults. Developmental Psychology, 24, 197-202.

Winer G.A., Rasnake L.K. and Smith D.A. (1987) Language versus logic: Responses to misleading classificatory questions. Journal of Psycholinguistic Research, 16, 311-327.

Winstead B.A. and Derlega V.J. (1985) Benefits of same-sex friendships in a stressful situation. British Journal of Social and Clinical Psychology, 3, 378-384.

Wortman C.B. and Lehman D.R. (1985) Reactions to victims of life crises: Support attempts that fail. In Sarason I.G. and Sarason B.R. (eds.) Social Support: Theory, Research and Applications. Dordrecht: Martinus Nijhoff.

Yarmey A.D. (1979) The Psychology of Eyewitness Testimony. London: The Free Press.

Yarmey A.D. and Tressillian Jones H.P. (1983) Is the psychology of eyewitness identification a matter of common sense? In Lloyd-Bostock S.M.A and Clifford B.R. (eds.) Evaluating Witness Evidence. Chichester: John Wiley & Sons Ltd.

Yuille J.C. (1987) The systematic assessment of children's testimony. Unpublished manuscript, University of British Columbia.

Yuille J.C. and Cutshall J.L. (1986) A case study of eyewitness memory of a crime. Journal of Applied Psychology, 71, 291-301.

Zajonc R.B. (1965) Social facilitation. Science, 149, 269-274.

Zanni G.R. and Offerman J.T. (1978) Eyewitness testimony: An exploration of question wording upon recall as a function of neuroticism. Perceptual and Motor Skill, 46, 163-166.

Zaragoza M.S., McCloskey M. and Jamis M. (1987) Misleading postevent information and recall of the original event: Further evidence against the memory impairment hypothesis. Journal of Experimental Psychology: Learning, Memory and Cognition, 13, 36-44.

Zimmerman C. and Bauer R.A. (1956) Effects of audience on what is remembered. Public Opinion Quarterly, 20, 238-248.