The question of the status of children's evidence has provoked intense public debate. At present, in most Australian jurisdictions the evidence of a child is not admitted unless and until the judge is satisfied that it is appropriate to do so (for example s. 23 Evidence Act 1958 (Vic)).

In Victorian courts, the judge must first determine whether the child (if under fourteen years) understands the nature of the oath. If the answer is yes, then the child's evidence is admitted in the same fashion as an adult's. If the answer is no, the judge must then assess whether the child is intelligent enough to understand and respond to questions. If this answer is no, the evidence is excluded. If the answer is yes, the evidence is admitted but it must be corroborated.

With the increasing concern about the incidence of sexual abuse of children (where the child is often the sole witness as well as the victim), and about domestic violence (where a child is likely to be a principal witness) the status accorded children's evidence in our judicial system is coming under closer scrutiny. The status of children's evidence is of critical significance in our criminal justice system. Exclusion of children's evidence may mean, in cases where the only witness is a child or children, that an offender will not be prosecuted because there is little or no other evidence which can be led against the accused. This means that many criminal acts can be committed with impunity and that children are victims of repeated criminal acts. If, however, a child's evidence is inherently unreliable or a jury is unable to assess reliability of the evidence accurately then the admission of such evidence may well prejudice the outcome of the trial for the accused.

In this paper, research findings relevant to the reliability and credibility of children's evidence are examined. With respect to reliability of evidence two apparently contradictory conclusions have been drawn from recall and person recognition studies: adult's evidence is more reliable than children's; and children's evidence about certain types of events may be reliable. As to credibility, findings from studies suggest that no simple rule about age and credibility can be formulated. It depends on the subject matter of the material and the manner in which the evidence in question is presented.
Memory as a Function of Age

The literature abounds with studies which have investigated recall as a function of age. Typically, in many studies, lists of items, for example words, numbers, pictures or sentences, are presented to people of different ages to view or listen. Some time later, recall by these people is tested either by free recall or by cued recall. In a free recall test, the people who saw or heard the list of items are simply asked to recall as many of the list items as possible. In the cued recall task, at the time of testing a cue or clue for some or all the items is provided. The conclusion to be drawn from these studies is clear and unequivocal - recall steadily improves from three years of age to twelve years of age and sometimes beyond twelve.

However, recall of more realistic material by different age groups has recently been investigated. In these studies, people of different ages have been exposed to staged events or have viewed a brief segment of a videotape. The findings of these studies suggest that the relationship between recall and age is not a simple matter. Feben (1985) showed her subjects a three-minute videotape on firefighting and then tested the subjects' recall of details of the tape. Feben found that young children's recall of specific features of objects depicted in the tape, for example the colour of the fireman's buttons, did not differ greatly from that of adults, but the accuracy of their recall of the theme and the sequence of events was significantly lower.

Goodman and Reed (1986) attempted to examine recall by children and adults of their interaction with an unfamiliar adult. Six-year-olds and adults achieved a similar level of performance on their recall of events elicited by objective questions. However adults recalled much more information, both correct and incorrect, than children. Saywitz (1987) requested her subjects to listen to a description of a crime on audiotape and then gave subjects three different types of memory tests: free recall, recognition, and a number of questions about content that the subjects might not have considered pertinent to the crime for example, asking for a description of clothing or details of the weather. There were two findings of relevance. Firstly, eight and nine-year-olds embellished the story more than older subjects. Secondly, when directed to specific objects and events, for example clothing, young children were accurate in their recall of the features of these objects and events. This latter finding is consistent with the findings of Feben (1985) described above.

A number of quite ingenious studies have recently been reported which have examined the young child's age ability to recall events perceived under stress. These studies have tested the young child's ability to recall and recognise events occurring and persons present at the time the child visited the dentist (Peters 1987), or was receiving a vaccination or venipuncture (Goodman, Hepps & Reed 1986). These studies found that the stress experienced by children did not appear to result in impairment in recall of central events, but in recall of peripheral events. Unfortunately, none of these studies included groups of older children and adults which would enable an assessment of the effects of stress on recall as a function of age.

Memory can be conceptualised as comprising three stages: encoding or perception; storage or retention; and retrieval (Melton 1963). Failure to recall an event or recognise a person accurately may reflect a breakdown in any one of the three stages. An event cannot be remembered if it was not perceived, events cannot be recalled or persons recognised even if they were perceived but they were not retained in memory, and finally events of persons stored in memory may not be recalled or recognised because of retrieval difficulties.

Given that children's recall and recognition are inferior to the recall and recognition of adults the question arises as to how much of this inferiority can be attributed to each of the different stages of memory. The answer to this has great significance in relation to the questioning of children as witnesses. If the inferiority of children's recall and recognition is entirely attributable to encoding, then the only matter that needs to be considered is the manner in which courts should receive children's evidence. If, on the other hand, some or all the relative deficiency of children's recall and recognition can be traced to retention and retrieval, then appropriate techniques which minimise the deficiencies can be implemented.
Retention Interval

Although the precise function of the relationship between recall and recognition and retention interval depends on a number of factors, the general function of the relationship is clear: as the retention interval increases, recall and recognition declines. Findings from studies designed to examine the interaction of age and retention interval on recall and recognition are equivocal. Saywitz (1987) found that a five-day delay had little impact on level of recall and recognition and that the performance of eight-year-olds did not differ from that of one-year-olds. Goodman, Aman, and Hirschman (1987) found a similar absence of effects of age, retention interval, and their interaction in the performance of three and five-year-olds who were tested after a retention interval of three to seven days. However, other researchers have found a different effect of retention interval for different age groups. Thomson (in preparation) found that the decline in recognition was greater for children than adults when retention interval increased from a few minutes to one week. Despite the fact that there are contradictory findings the tentative conclusion can be drawn that children's memory performance is more likely to suffer than that of adults as retention interval increases.

Retrieval

By far the most frequently found errors in free recall studies are errors of omission. Findings for studies which have examined the incidence of errors of omission suggest that young children make more errors of omission than adults. Saywitz (1987) found that eight-year-olds omitted significantly more information in their recall of an audiotape of a story than eleven and fourteen-year-olds. A similar pattern of results has been obtained in traditional list recall studies, where age differences in recall were largely attributable to more errors of omission by the young. However, Saywitz found that the provision of relevant non-suggestive cues, successfully elicited accurate information from the children. An example of the successful elicitation of previously unrecalled information would be the provision of the cue 'clothing'. This cue elicits accurate information not previously volunteered.

The importance of the appropriate retrieval cue or clues has been emphasised by Tulving and Thomson (1973). They have proposed that cues are effective as retrieval cues, only if the cues provided have been encoded as part of the information to be retrieved. This formulation has been called the encoding specificity principle. The relevance of this principle to the recall of young children is that cues or questions posed by adults may be singularly inappropriate as the child has conceptualised the event or object very differently from the way an adult would. Further, the meanings the child gives to certain words and sentences may be different from that given by adults (Chomsky 1969). Indeed, failure to recognise differences in conceptual and linguistic systems may result in a child being unable to recall information available in their memory or, even worse, to give irrelevant and inappropriate information.

Suggestibility is another source of error which has been examined extensively in recall and recognition studies. Typically, these studies have three phases. In the first phase, subjects watch a series of slides or a videotape or listen to an audiotape. In the second phase, subjects are asked questions about the content of the slides, videotape or audiotape. Some of the questions asked in this phase are misleading, that is, the questions contain misleading information. In phase three, a further recall or recognition test is given, the object of this test is to determine whether recall of the information presented in the slides, videotape or audiotape has been distorted by the misleading information embedded in the questions asked in the second phase (Loftus, Miller & Burns 1978). Both recall, and to a lesser extent, recognition, have been found to be affected by the misleading questions (Bowers & Bekerian 1984; Ceci, Ross & Toglia 1987; Christiaansen & Ochalek 1983; Loftus, Miller & Burns 1978; Zaragoza 1987).

Whether a child's memory is more susceptible to misleading information than an adult's memory is currently the subject of fierce debate. In their review of the published findings,
Loftus and Davies (1984) concluded that there is no simple relationship between age and susceptibility to misleading information. The relationship depends on other factors, such as type of information to be remembered and the length of the retention interval. More recent studies, (Ceci, Ross & Toglia 1987; Saywitz 1987; and Zaragoza 1987) have done little to resolve the issue.

**Children's Accuracy in Identification**

The importance of distinguishing identification of familiar persons from that of unfamiliar persons has been stressed by the courts ([R v. Turnbull][1976] 3 All ER 549; [R v. Burchell][1981] VR 611; [R v. E.J. Smith][1984] 1 NSW LR 462). The validity of the distinction has been supported by research findings of Thomson, Robertson, and Vogt (1982). In that study, context which included setting, clothing and activity of persons to be identified was manipulated. Thomson et al. found that changing the context at the time of the identification test impaired recognition of previously unfamiliar persons, but had no effect on the recognition of familiar persons.

In most studies investigating developmental trends in person recognition, unfamiliar persons or photos of unfamiliar persons have been used as the 'to be identified' material. With few exceptions these studies have found that identification improves steadily from five years of age to eleven or twelve years with some further improvement from twelve to seventeen years (Benton, Van Allen, Hamsher & Levin 1978; Blaney & Winograd 1978; Carr, Sullivan & Bock 1981; Chung & Thomson 1985; Diamond & Carey 1977; Ellis, Shepherd & Bruce 1973; Flin 1980; Goldstein & Chance 1964; Thomson 1984).

Findings of another study (Thomson 1984) provide some insights into the manner by which children identify unfamiliar people. In this experiment, witnesses saw a series of slides of people and then were tested to find how many of these people they recognised. In the test phase, one quarter of the slides depicted a person seen in the earlier slide series in the same context as that person had previously appeared, one quarter of the slides depicted a person seen in the earlier series of slides but in a different context, one quarter of the slides depicted a new person but this person was shown in a context previously seen in the earlier series of slides and one quarter of the slides depicted a new person in a context not previously seen in the earlier series of slides.

The performances indicated several things. Firstly, when context is reinstated performance increases marginally from five years of age to nineteen years of age. Secondly, changing the context drastically impairs the ability of five, seven and nine-year-olds to recognise someone previously seen. Likewise context has a striking effect on false identification of five, seven and nine-year-olds. Compared to false identification rate of eighteen year olds, the false recognition rate of five, seven and nine-year-olds is 38 per cent higher. In contrast, the false identification rate of five-year-olds for new persons in new contexts is, if anything marginally lower than the older age groups. All age groups are seduced by the context, but these context effects are significantly greater for children under eleven years of age (see Figure 1). Diamond and Carey (1977) have reported similar findings.
Yuille, Cutshell and King (reported in King & Yuille 1987) compared the performance of children aged nine, eleven and fourteen in an identification task when the face to be identified was absent from the photograph display. Yuille et al. found that the younger the child, the more likely someone from the display would be selected as the person previously seen (see also Goodman, Aman & Hirschman 1987).

There have been relatively few studies of identification of familiar persons as a function of age of the witness. One study by Diamond and Carey (1977) found no context effects in the recognition of five and six-year-olds when the persons to be identified were familiar persons. Unfortunately this finding is difficult to interpret as performance of all age groups was at ceiling. A more difficult task would have provided less ambiguous findings.

In contrast, there are two studies which have reported little or no difference in identification accuracy (Goodman & Reed 1986; Parker, Haversfield & Baker-Thomas 1986). In these studies children either viewed a live or videotaped incident. To conclude from these studies, as Hedderman (1987) has done, that age differences disappear when 'realistic analogues of witnessing' are employed is wide of the mark.

Firstly, the more recent study of Goodman, Aman and Hirschman (1987) which used a live incident found age differences led to both incorrect and false identification. Secondly, the conclusion to be drawn from studies, which used slides or photographs as the material to be recognised is not that children cannot recognise persons, rather, that children are more susceptible to things such as context.
Credibility of Children as Witnesses

There is little to be gained in leading evidence of children if members of the jury give little or no weight to that evidence. Yarmey and Jones (1983) asked a wide range of persons, including laypersons, university students, psychologists and lawyers to assess the reliability of the response of an eight-year-old to questions of a policeman or a lawyer. Yarmey and Jones found that most people viewed the responses as unreliable evidence.

Subsequent studies have investigated the relative credibility of children as witnesses. The paradigm typically employed in these studies is to present transcripts of trials or videotapes of trials to subjects to read or to view and to determine the guilt of the defendant and the credibility of the witnesses. The age of the key witness is varied across subjects. Goodman, Goldman, Helgeson, Haith and Michelli (1987) found that the credibility assigned to the evidence when it was purported to be given by a six-year-old was less than that assigned when it was purported to be given by a ten-year-old which in turn was less than that assigned to a thirty-year-old. However, the adjudged guilt of the defendant was unaffected by the age of the key witness.

Lizzie Hone, an honours student at Monash University, provided subjects with transcripts of a constructed coronial inquiry. The subjects were required to assess the credibility of the witnesses, decide whether the driver of a vehicle which killed a pedestrian should stand trial, and to recall all the relevant evidence. The recall requirement was included on the basis that the evidence thought to be important would be recalled first, and evidence omitted was considered unimportant. For half the subjects, photos of the witnesses were supplied, for the other half no photos were provided. As yet the recall data have not been analysed. However, in contrast to Goodman et al. (1986) she found no difference in the credibility of evidence as a function of age, nor of frequency of committal. These findings are consistent with those of Ross, Miller and Moran (1987).

In a comprehensive investigation of the credibility of child witnesses, Leippi and Romanczk (1987) carried out a number of surveys and experiments. They surveyed members of a parent-teacher association and university students. The results of the survey indicated that children were perceived as being as capable or more capable than adults in recognising a face, but more susceptible to suggestions by adults and peers. Leippe and Romanczk subsequently examined the effect of age on guilty verdicts when the key eyewitness was six, ten or thirty years old. When the other evidence was strong or ambiguous the evidence of a thirty-year-old produced more convictions than that of six and ten-year-olds. When the other evidence was weak, age differences disappeared, but was only rated low in credibility.

Earlier studies have shown that jurors' perception of adult evidence depends on the confidence exuded by the witness (Lindsay, Wells & Rumpel 1981; Wells, Lindsay & Tousignant 1981), and the witness' capacity to recall trivial matters (Wells & Leippe 1981). Whether or not children's evidence is assessed in the same fashion has yet to be determined. Research into the credibility of the evidence of eyewitnesses has barely begun. Important issues as yet to be explored concern type of offence, witness as victim, sex of witness, and intellectual capacity of witness. It would be premature at this stage to draw any strong conclusions about the credibility of children as witnesses.

Implication of Research Findings for Judicial Procedures

The manner of dealing with potential deficiencies of children's evidence depends on the locus of the deficiency. If the deficiency concerns perception, then this deficiency must be addressed by the status accorded the evidence. The present laws of evidence are directed to this type of deficiency. Two approaches have been adopted: exclusion of the evidence unless the judge is satisfied that the child is a competent witness, or admittance of the child's
evidence and let the jury decide what weight to give that evidence. Both positions have
difficulties. The former approach assumes judges are more accurate in their assessment of
the reliability of children's evidence and a finding is made in the absence of the total
evidence. To the extent that the credibility attributed to a person giving evidence may be
based on irrelevant factors, the accused or the community may be seriously prejudiced.

The problems with respect to the child's deficiencies in retention and retrieval can be
addressed quite differently. Interviews can be electronically recorded shortly after an
offence has been committed. In a number of jurisdictions, including Australian ones,
interviews with the accused are being audio or videorecorded and these recordings are
being admitted by the courts. Recording the evidence of a child witness soon after the
offence has been committed will reduce the loss of memory information and also minimise
distortions of memory through repeated questions and discussions about the relevant events.
However, it must be acknowledged that such a procedure is fraught with difficulties.
Methods adopted in the investigatory phase are often incompatible with those acceptable in
the evidentiary phase. In the evidentiary phase, leading questions can have no place. Thus,
to a large extent, interviews of children which are electronically recorded must conform to
evidentiary rules. This means that considerable care must be exercised by the interviewer.

Provided the interview is conducted skilfully, the questions asked of the child are simple
and objective, then the reliability of this evidence should improve immeasurably. Of course,
the introduction of electronic recording of the evidence of a child witness does not
necessarily mean the child is not cross-examined in the courtroom.

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