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Witness Interviewing

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In order to bring the perpetrators of crime to justice, investigators need to interview witnesses to find out what has occurred. Witness testimony helps provide the necessary leads in the early stages of an investigation and is also used in court to help in coming to decisions as to guilt or innocence. When witnesses are interviewed it is important that they are interviewed in a way that is likely to produce the most accurate and detailed accounts of what happened. In this chapter the contribution of psychology to furthering our understanding of witness interviewing is examined. Important concepts of memory will be explored using key empirical, applied and field studies, to show the conditions under which witness memory can be maximised as well as the conditions in which witness memory is most likely to be unreliable. The practical implications of psychological research for the area of witness interviewing are explained. The chapter concludes with an overview of the Cognitive Interview technique. This procedure is based on many of the principles discussed in this chapter, and is currently taught to all police officers in the England, Wales and Northern Ireland.

Introduction

When investigating crime, police investigators strive to answer two primary questions, namely what has occurred and who is responsible (Milne & Bull, 2006). When attempting to answer these questions, and in order to bring the perpetrators of crime to justice, investigators require information about what has happened. Such information is generally provided by witnesses (who can also be victims). Not only do witnesses generally provide the central leads (Kebbell & Milne, 1998), but the information they supply often directs the entire investigatory process from the very outset (Milne & Bull, 2001; Milne & Shaw, 1999). For example, in the initial stages, witnesses report what has occurred and frequently provide a description of the perpetrator. Further, they often signal additional lines of enquiry and even indicate other potential sources of information. As an investigation progresses, witnesses can be asked to identify perpetrators, objects or places, and in the final stages of bringing an offender to justice, witness evidence is central to most court cases (Kebbell & Milne, 1998; Zander & Henderson, 1993). Certainly, when presented at a court of law, witness testimony is extremely powerful, with jurors relying heavily on witness accounts when coming to decisions as to guilt or innocence (e.g. Cutler *et al.*, 1990).

Witness information is generally gathered by way of an interview (a conversation with a purpose) during which a police officer asks a witness to explain what they can remember about a previously experienced event, the primary objective being to obtain a full and accurate account from each witness. Remembering a crime event, such as a robbery or an assault, is essentially a (re)constructive process. It is generally accepted that witnesses do not store the literal input stimulus of an experienced event but, instead, store a series of coded representations (Bower, 1967). Therefore, remembering is not simply a case of rewinding and playing back a video-recording of what has been experienced but involves the reactivation and

construction of the appropriate coded representations prior to vocalisation. Consequently, the manner in which a witness's memory is accessed and (re)constructed can be a significant determinant, not only of the amount of information they recall, but also the accuracy of that information. The types of questions asked, the manner in which they are asked, and the structure of the retrieval process (in this case the interview) have all been found to impact upon witness memorial performance in terms of both the *quantity* (amount) and the *quality* (accuracy) of the information recalled (e.g. see Loftus, 1975, 1979; Milne & Bull, 2001; Tulving, 1991).

Owing to the importance of witness interviewing to the criminal justice system, and because the reliability of witness evidence can be directly called into question in legal contexts, psychologists have long sought to clarify the conditions under which witness memory is likely to be most accurate in an effort to inform the legal system as to how justice is best served. Consequently, there now exists a large body of psychological research that has informed the current approach to witness interviewing, not only in the UK but worldwide. In this chapter, laboratory, applied and field research will be reviewed, showing how the basic concepts of memory inform our understanding of witness interviewing. Throughout this chapter attention will be drawn to important developmental differences that must be considered when evaluating the reliability of witness testimony, and as such, the interviewing of adults and children will sometimes be considered separately. We will conclude by describing the development and application of the Cognitive Interview procedure which is taught to police officers in the UK (excluding Scotland). The Cognitive Interview incorporates many of the psychological principles that will be discussed in this chapter and provides an excellent example of how psychological research can be successfully translated into best practice in the real world.

Encoding, Storage and Retrieval

When witnesses are interviewed concerning what they can remember about a past event, irrespective of its complexity, the cognitive processes underlying memory can be divided into a three-stage process of *encoding*, *storage* and *retrieval* (Melton, 1963). Employing an analogy between human memory and computer processor (Atkinson & Shiffrin, 1971; Bower, 2000; Brown & Craik, 2000), information is described as moving through the three stages sequentially. Encoding involves the initial uptake of information in our environment by our sensory systems (Atkinson & Shiffrin, 1971). The newly acquired 'raw' information is then briefly retained in the appropriate sensory store, where, if attended to, it initially proceeds to short-term memory, which has a limited capacity and a brief duration. From here the information progresses to long-term memory, which is believed to have a virtually unlimited capacity and is further subdivided into a number of memory systems, each of which is concerned with specific types of information (Tulving, 1972). Information that has been encoded and stored can then be retrieved, thus bringing about the conscious recollection of past events and experiences (e.g. Atkinson & Shiffrin, 1968, 1971). The ability to recall specific past events and experiences is referred to by different scholars as episodic memory, autobiographical memory, event memory and witness memory. These terms are largely interchangeable and we refer to witness memory in the current chapter.

This three-stage conceptualisation of memory also provides some indication as to how interdependent each of the memorial processes are. From an information processing perspective, attention is vital for the successful encoding of memory. Encoding is a necessary prerequisite for storage, and retrieval is, in turn, dependent upon the preceding encoding and storage processes (Tulving, 1974). Thus, the efficacy of all three of the aforementioned cognitive processes is crucial for the accurate memories of events. However, despite the simplicity of the three-stage conception of memory, these processes are complex and multifaceted (Baddeley, 2001). Memory can fail at each and/or all of these stages (Brainerd *et al.*, 1990). For example, information can be forgotten, recovered, distorted and reinstated at each stage, thereby impacting on both the amount of information recalled about experienced events and the accuracy of that information.

Forgetting

Witnesses rarely remember as much information about an experienced event as police investigators would like. It is not at all unusual for a witness to say to an interviewer 'I don't know, can't remember. I am sure I saw him but I have forgotten what he looked like'. Forgetting has long been of interest to psychologists and it was empirical research conducted by Ebbinghaus (1964/1885) that first indicated that the rate of forgetting (also sometimes referred to as decay) is not uniform and that

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memories are not forgotten gradually at a constant rate, little by little, over time. Ebbinghaus memorised lists of nonsense syllables (for example 'gar' and 'hep'), of varying lengths, and measured the number of times that it took to learn them. When he was able to learn the lists completely he then tested himself at varying delays to see how long it took to re-learn the word list. The results of numerous highly controlled studies of this type indicated that forgetting from memory is negatively exponential in nature. That is, forgetting is at its most rapid soon after the lists of nonsense syllables have been successfully encoded and then tapers off (or flattens) as time passes. Since then researchers have also examined whether there are developmental differences in how quickly memories are forgotten. When children of different ages are required to learn lists of words until they can recall them without error, later recall tests clearly show that younger children forget more quickly than older children (Brainerd *et al.*, 1990).

Given that much of the early research was conducted in highly controlled experiments it is no surprise that memory researchers have also examined forgetting in applied settings that are more typical of everyday recall. Typically, such research involves participants trying to recall events depicted in video presentations, live presentations, or interactive events. Researchers then return at various delays to test how much information is accurately recalled, using various structured interview procedures and recall techniques specifically designed for use in experiments. For example, Jones and Pipe (2002) interviewed 5- and 6-year-old children concerning what they could remember about a school-based pirate show either immediately afterwards, or after a delay of one day, one week, one month, and six months. These delays allowed the rapid forgetting at short recall delays to be measured and, thus, to be compared to recall performance at the comparatively longer delay of six months. The results did not reveal any significant decreases in recall performance, employing conventional statistical tests, until the six-month delay interviews. However, when a forgetting function was calculated of the type proposed by Ebbinghaus (1964/1885) and fitted to these data, it was clear that the largest decreases in recall were occurring soon after the event and that the rate of forgetting decreased (flattened out) at the longer delays.

Although the results of applied research do confirm the basic prediction of Ebbinghaus, that over time the greatest decreases in what is remembered about an event occur soon after the event in question (Jones & Pipe, 2002; Pipe *et al.*, 2004), sometimes applied studies do not show the effects of forgetting, and it is important to be aware that alternative explanations are sometimes needed, especially when attempting to understand witness memory. Gee and Pipe (1995) studied both 6- and 9-year-old children and followed their memory across a 10-week period. They found evidence that the 9-year-old children forgot stored information across the 10-week delay, but that the 6-year-old children did not. The reason for this inconsistency with the findings of controlled experiments using lists of words (e.g. Brainerd *et al.*, 1990) may be due to the amount of information that was initially encoded. Younger children may have actually encoded fewer details about the event in the first instance so that they had less to forget over time, thereby making their rate of forgetting appear less dramatic. The older children encoded much more of what had happened and, thus, had more to forget. Consequently their forgetting appeared to be more rapid.

Another instance where the findings of applied studies provide findings that are seemingly inconsistent to those of controlled experiments of forgetting is illustrated by Fivush *et al.* (2004). They interviewed children shortly after they had experienced Hurricane Andrew, which struck the coast of Florida in 1992. Six years later, the same children were interviewed again about what they could remember and it was found that they now reported twice as much as they had done originally. In this case the most likely reason for the increase in the amount recalled (the opposite of forgetting) could be attributed to the fact that during the intervening six years between interviews the children experienced many reminders of the hurricane, for example anniversaries, conversations with friends, and a protracted clean-up operation. They may have developed their stories accordingly and added details that they learned after the event to what they had previously recalled. Moreover, across the six-year delay, the children obviously underwent significant developmental changes in their abilities to recall, communicate, and elaborate their ideas, which may have also contributed to the increase in recall.

Field studies of real interviews have also examined whether witnesses recall progressively fewer details as the time between witnessing a crime and recalling it increases (Lamb *et al.*, 2008). Van Koppen and Lochun (1997) researched archival data from police records to investigate both the quantity of the information recalled about robbery suspects and the accuracy of that information. Not surprisingly, the most complete descriptions were associated with a short delay between the crime event and providing a description. Lamb

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et al. (2000) examined interviews with 4- to 12-year-old children after delays of three days, one month, up to three months, and between 5 and 14 months. These data clearly show evidence of a change in the rate of forgetting, there having been a 7 per cent drop in recall between the shortest delays of up to a month and a further 9 per cent drop in recall up to 14 months.

These basic findings of research on forgetting suggest that, in theory, the best time to conduct a witness interview is as soon as possible after a witness has experienced the event in question, as over time critical evidence may well be forgotten. Furthermore, this is especially important for younger children because research has indicated that they are likely to forget more quickly. However, in the 'real world' of witness interviewing it is often neither appropriate nor practicable to interview a witness immediately. Sometimes it can often be hours, weeks or even months, post experiencing a crime, that a witness comes forward and makes themselves known to police: they may be intimidated, frightened, or in many cases are unaware that they have actually witnessed a crime until it has been publicised. Equally, even when a police investigator is in a position whereby he/she can conduct a witness interview quickly, the quality of witness memorial performance can also be affected by many other important incidental factors which must be taken into consideration. Witnesses are often stressed and anxious as a result of their experiences, and this may affect their ability to communicate. In laboratory studies, stress has been found to reduce the quantity of information recalled by mock witnesses (e.g. Yuille & Cutshall, 1986; Yuille *et al.*, 1994), although the information that was recalled was found to be mostly accurate. Witness interviewers often find themselves in a 'trade off' situation whereby both immediacy and witness anxiety/stress levels have to be considered. It may be that an interview conducted immediately post an event, with a stressed/anxious witness, may elicit less (albeit accurate) information than one conducted some time later when a witness is more composed. Therefore, although interviewing witnesses immediately after a crime is desirable, from an information processing perspective, it may not always be in the best interests of an investigation.

Reminiscence

Other studies have been conducted that show that sometimes memory is *recovered* (the opposite of forgetting), a phenomenon known as *reminiscence*. Ballard (1913) first investigated the reminiscence effect in 12-year-old boys. They were asked to memorise a poem in a short space of time and then to recall it. Only one of the 19 boys was able to recall all the lines of poetry when they were first asked. Two days later a second test was administered and it was unexpectedly found that eight of the boys were now able to recall all the lines of poetry. On average, the number of lines of poetry recalled increased from 27.6 to 30.6 in the second test, clear evidence of reminiscence of previously unrecalled information. More recently, Erdelyi and Becker (1974) asked participants to remember sets of pictures and lists of words and then asked them to write down what they could remember three times in a row with a seven-minute break separating each memory test. The results showed that progressively more new correct details were recalled from the first to third tests, clearly demonstrating the reminiscence effect. Subsequent experiments showed that the reminiscence effect was stronger when the participants thought about what it was they were trying to remember between memory tests, thus, suggesting that reminiscence may be facilitated by actively trying to retrieve memories. There have been many more highly controlled laboratory experiments also showing the reminiscence effect (for reviews see Erdelyi, 1996; Payne, 1987).

Applied witness-interviewing studies have examined whether it would also be possible for witnesses to reminisce meaningful information, and whether there would be any advantage to re-interviewing witnesses to find out more information about a crime (Bluck *et al.*, 1999; Bornstien *et al.*, 1998; Dunning & Stern, 1992; Gilbert & Fisher, 2006; La Rooy *et al.*, 2005; Scrivner & Safer, 1988; Turtle & Yuille, 1994). A typical applied study of the reminiscence effect surrounded the events of the O.J. Simpson trial verdict which was televised live across the USA and watched by millions of viewers (Bluck *et al.*, 1999). Eight months after the verdict announcement, adult participants were interviewed concerning what they could remember about the details of the trial verdict, three times in a row within the space of an hour. They found that the amount recalled by the participants actually increased between the first and the third interviews, demonstrating the reminiscence of new information. Importantly, from a witness-interviewing perspective, there was no increase in errors suggesting advantages of repeated interviewing.

Research by Gilbert and Fisher (2006) directly examined the accuracy of the newly reminisced information and found that the recall of new information can be

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facilitated by changing retrieval cues between recall tests. Adults were asked to watch a three-minute eyewitness video of a bank robbery in progress, after which they were asked to write down everything that they could remember. Two days later they returned to recall what they could remember from the video clip using different recall cues. For example, if they had originally recalled the clip in chronological order they were asked to recall what happened in reverse order in the follow-up test, and vice versa. The results showed that the greatest amount of reminiscence occurred when the retrieval cues were different in the second test. However, what was most striking was that the accuracy of the reminiscence was 87 per cent.

Similarly, high accuracy of reminiscence has also been observed in studies with children. La Rooy *et al.* (2005) had 5- and 6-year-olds engage in a 15-minute interaction with a friendly pirate who led them through a sequence of hands-on pirate activities. Immediately after the interaction with the pirate the children were interviewed about what they could remember and 24 hours later they were asked again to recall everything they could remember. As with Gilbert and Fisher (2006), the second interview contained new details and a very similar accuracy rate of 92 per cent was found for the newly reminisced details. However, a series of further experiments that explored whether such results could be achieved with children after a long delay, as in the case of Bluck *et al.* (1999), did not reveal comparable results for children (La Rooy *et al.*, 2005, 2007). Hence, it would appear that for children the most reliable reminiscence effects occur when they are asked about what happened shortly after the event in question, whereas the benefits of repeated interviews are still evident even after long delays for adults.

Very few studies have examined reminiscence in real witness interviews. Hershkowitz and Terner (2007) examined the details reported by children in forensic interviews. After an initial interview the children were re-interviewed after a 30-minute 'rest'. Most of the details reported were provided in the initial interview, but the repeated interview was still a useful means of obtaining more information. Fourteen per cent of the details, which were central to the allegations in question, were only provided in the second interview, adding further clarity to the allegations that had been made.. Collectively, the findings discussed above suggest that witnesses can provide more information about crimes when they are re-interviewed.

Witness interviewers, therefore, need to be aware that recall of events and experiences is not always complete and exhaustive. Interviewers should take particular care to probe memory fully on the one hand, but also know that it may be useful to return and re-interview witnesses at a later date to see if they can remember more information about a crime. Indeed, the social context of being re-questioned about something may encourage a witness to work harder to retrieve more information and not simply repeat what they may have already told the interviewer (Bluck *et al.*, 1999). However, the research on reminiscence does not dovetail well with the legal and forensic process of interviewing witnesses in terms of creating a strong legal case. The criminal justice system generally values information, offered early in an investigation, more highly than information offered later. For example, consider the situation whereby, when initially questioned by the police, a witness is unable to remember exactly what has occurred, or is unable to describe a perpetrator, but sometime later says, 'oh yes now I remember where I was that night, I remember what he was wearing. . .' Such testimony is often viewed with scepticism by legal experts, it being assumed that a witness who changes their initial story may be doing so to fit with facts learned about the case sometime later, for example from media sources, conversations with friends, or even other witnesses. Adding new details can also raise doubts as to the overall reliability of a witness's memory and whether *all* their evidence should, thus, be considered less valuable. Research has, however, indicated that outright scepticism as to the validity of the information obtained from multiple witness interviews is unjustified. What remains is for researchers to further investigate the conditions under which witness memorial performance, across multiple interviews, is likely to be accurate (La Rooy *et al.*, 2008).

Encoding Specificity

The principle of encoding specificity (Thomson & Tulving, 1970; Tulving & Thomson, 1973) provides an indication as to how witness memorial performance might be enhanced during an interview by providing a theoretical framework for understanding the importance of contextual information and how it can affect memory. The encoding specificity principle was initially illustrated in a series of word association experiments. For example, participants were presented with pairs of common words whereby the first word acted as a cue to a second target word. The cues were either strongly associated to the target word e.g. *white – BLACK* (black

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being the target word) or weakly associated, e.g. *train – BLACK*. When participants' recall of the target word was tested, recall was greatest when the cues presented at recall were the same as those when they were first presented, irrespective of whether they were strongly or weakly associated with the target word. The results of this series of experiments were such that Tulving and Thomson (1973) concluded that remembering was the result of an interaction between both the encoding and retrieval environments. A retrieval cue will be effective only if the information in that cue was encoded in the original memory trace. Memory is, thus, improved when information present at encoding is then presented at retrieval because it facilitates conscious recall of aspects of the original event.

This was further illustrated by Godden and Baddeley (1975) who demonstrated just how powerful *physical* reinstatement of context can be. Scuba divers learnt word lists either underwater or on land. Later the divers were asked to recall the word lists, either in the same or a different learning environment (some of the participants who learned the word lists on land were tested on land, while others who learned word lists on land were asked to recall the word lists underwater). The basic finding was that divers who learnt the word lists underwater recalled more words (approximately 50 per cent) underwater than they did on land – recall of the word lists was enhanced when the encoding and retrieval environment were the same. The encoding context, however, need not necessarily always be part of the external environment, and an internal subjective state, such as mood, at the time of encoding may also act as a powerful retrieval cue (Eich *et al.*, 1994; Schacter, 1996).

From an applied perspective these findings suggest that returning a witness to the scene of a crime may be a useful means of obtaining more information about what happened. In applied research Wilkinson (1988) asked 3- and 4-year-old children to participate in a number of activities during a walk in a park. The following day the children were asked to recall everything that they could remember either in a quiet room, or in the park that they had visited the day before. The results showed the effects of context reinstatement, with children retrieving more about what happened when they were interviewed in the park. At longer delays, Pipe and Wilson (1994) interviewed children about a visit to a 'magician' that had occurred either 10 days or 10 weeks earlier. The interviews occurred in either the same or a different room from that in which they had seen the magic show. As expected, the results showed that the children who were interviewed in context, with all the original items from the magic show present, recalled the most information. Moreover, one group that was exposed to an incorrect context reinstatement, where items that were not originally present had been added, did not differ in their recall compared to children who received the true context reinstatement. La Rooy *et al.* (2007) also examined the effects of inaccurate context reinstatement in 5-and 6-year-old children after a delay of six months. As with Wilson and Pipe (1989), children who were interviewed with context reinstatement recalled more information than those interviewed without context reinstatement, irrespective of whether the context reinstatement contained incorrect items. However, the results also showed that children interviewed in the true context, which matched exactly what they had seen six months earlier, were more accurate in their recall.

That said, returning to a crime scene is generally viewed as inappropriate in many real-life cases. Owing to the passage of time, the crime scene may have changed and, thus, will be of limited value in terms of being a useful retrieval cue. Moreover, returning to the scene may prove so upsetting that a witness's memorial performance may suffer as a result of increased levels of anxiety and stress. Therefore, given that it may not be possible or appropriate to use 'physical' context reinstatement, researchers have investigated whether 'mental' context reinstatement would be sufficient to improve the amount of correct information recalled by witnesses. That is, would asking witnesses to clearly imagine the environment in which they saw the crime, before they are questioned about what they remember, be as effective at improving recall as returning to the scene?

Milne and Bull (2002) investigated this possibility. Adult participants viewed a video-taped mock crime event and were interviewed two days later employing a number of interview procedures, one of which incorporated the mental context reinstatement. Results revealed that the interview procedure that comprised mental context reinstatement instructions elicited the greatest number of correct details. Further, there was no associated increase in the number of errors reported by witnesses when this technique was used. More recently, Dando *et al.* (2009a) have also found that an interview procedure which incorporates the mental context reinstatement combined with an instruction for witnesses to 'report everything' elicits more correct information from mock witnesses compared to a similarly structured

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procedure that excludes mental context reinstatement. However, it is, nonetheless, important to be aware that mentally reinstating the context of a crime may also be anxiety inducing, and as such, may limit memorial performance rather than having the desired effect.

In sum, according to the theory of encoding specificity, context reinstatement may be a means of enhancing witness recall. Indeed, the beneficial effect of mentally reinstating the psychological and physical context within which an event was encoded is generally well established in eyewitness memory research with both children and adults (e.g. Clifford & Gwyer, 1999; Geiselman *et al.*, 1984; La Rooy *et al.*, 2007; Memon & Bruce, 1985; Milne & Bull, 2002; Smith, 1988). However, while the increases in participants' memorial performance in the aforementioned experiments (believed to be attributed to context reinstatement) are often technically 'statistically significant', it is important to be aware that improvements in the amount of information recalled is, in real terms, very modest; typically, the benefits of context reinstatement lead to the recall of only a few extra details. Although context reinstatement does not lead to complete recall, any interview procedure that increases the amount and quality of the information recalled by a witness has merit. Indeed, recent research has indicated that mentally reinstating the context, within a witness interview procedure, does improve the accuracy of the information recalled compared to a procedure that excludes the technique altogether (e.g. Dando *et al.*, in press, 2009b; Milne & Bull, 2002). Moreover, in real-life investigations even one single extra detail elicited from a witness may prove vital in terms of its forensic/investigative importance.

Suggestibility and False Memory

It is essential to consider *false memory* and *suggestibility* in relation to witness interviewing. Numerous real-world cases have demonstrated that witness recollection in interviews can be entirely false, and the tragic consequences include false imprisonment for serious crimes (e.g. see Savage & Milne, 2006). What is striking from the perspective of a witness interviewer is that it is almost impossible to distinguish false memories, seemingly confidently and clearly held by an interviewee, from true memories. What is possible, however, is an understanding of the conditions in which false memories can be created and, therefore, the conditions in which the veracity of witness statements could be justifiability questioned. Moreover, false memory and suggestibility research also provides clear insights into to what interviewers should *not* be doing when they are interviewing witnesses.

False memories can be created because memory is (re)constructive. Bartlett (1932) asked English university students to read a North American folktale called 'The War of the Ghosts'. When the participants were asked to recall the story, Bartlett found that not only was information forgotten, but also that there were frequent distortions to the story. The participants' recollections became shorter, more concise, simplified, disordered, and they rationalised parts of the story that were ambiguous by adding completely false details consistent with their own cultural and individual perspectives. For example, a 'canoe' in the story was remembered as a 'boat'. The very reconstructive nature of memory as demonstrated by Bartlett (1932) means that it is vulnerable to distortion. Subsequent research has shown that there are numerous ways in which memory can be distorted and this has highlighted many areas of concern.

False memories are also comparatively easy to create. Wade *et al.* (2002) obtained four childhood photos of their adult participants. One of the four photos was digitally re-edited, such that the photo of the participant was pasted into a photo of a hot-air balloon. The participants discussed the photos a number of times for two weeks, at which point half were claiming to have remembered 'something' about taking a ride in a hot air balloon in their childhood. Garry and Wade (2005) used this basic procedure to compare whether images of false events were more, or less, powerful at creating false memories than simply talking about false events. Eighty per cent of participants reading a false narrative about a childhood trip in a hot air balloon came to remember 'something' about the ride by the third discussion session. The reason that the narrative was actually a more powerful means of creating false memory than the photo was that it left greater scope for participants to build up their own individual mental picture, thus making the false memory seem more real and unique. These demonstrations of how easily false memory can be created are a sober reminder of the fallibility of memory and it is easy to see how people could be 'talked into' recovering memories of events that didn't happen. There are many historical cases where people have 'recovered' memories of physical and sexual abuse in therapy sessions when they have been specifically asked to 'dig up' hidden memories that have ended with miscarriages of justice. The lesson is that what is

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reported in witness interviews may sometimes seem plausible, but it is not until the circumstances in which the memory came to light are known that investigators can judge whether what has been reported is likely to be true or not.

The paradigm that has been most commonly used for demonstrating that people can have false memories has been the Deese–Roediger–McDermott paradigm (DRM; Pezdek & Lam, 2007). This paradigm involves participants studying lists of words that they will later be required to recall or recognise. The words in the lists come from same category, for example they could all be items of furniture (e.g. table, couch, seat, stool etc.). An obvious member of the category is deliberately not included in the list (e.g. chair) and is called the false memory 'target word'. When the participant recalls what they remember from the lists they typically recall the false target word that wasn't presented in the original list. This is taken as evidence of false memory (Roediger *et al.*, 2001).

What is interesting about the DRM paradigm is that it provides counterintuitive results when the question of developmental differences between children and adults is considered. Typically, children are viewed within the legal system as being less reliable witnesses than adults because they are prone to memory errors and false memory owing to their less well-developed cognitive abilities. As we get older we expect to be less susceptible to false memory, and as such, the witness evidence of children is more heavily scrutinised compared to that of adults. However, when Brainerd *et al.* (2002) involved 5- and 11-year-old children and adults in a typical study using the DRM paradigm they found that the 5-year-old children were the least likely to make the critical word recall error. The likelihood of making the false memory error actually increased with age, with adults showing the greatest susceptibility to false memory. The explanation of these findings is put down to a lack of understanding of 'gist' by younger children. When they encode the word lists they do not recognise as quickly as adults that the words are all coming from the same category, whereas adults are very quick to pick up the gist. When recalling the words, adults depend on their knowledge of gist to help them recall more correct responses. However, this strategy also results in them falsely recalling the false target word. By contrast, because children are not relying so heavily on category or gist information as a cue to recall, they concentrate on trying to recall the list 'verbatim' and consequently make fewer false memory errors.

Despite these intriguing findings, applied studies of false memory and suggestibility involving children do show powerful effects of suggestibility. Leichtman and Ceci (1995) organised a day-care visit by a stranger called 'Sam Stone' who entered children's classrooms, greeted the teacher, and then told the children that a story they were being read was one of his favourites. Before the children were interviewed about what they could remember about the brief encounter, the researchers stereotyped Sam Stone by returning to the children's classrooms a number of times to read stories that depicted him as a very clumsy person. Some of the children were also interviewed in a highly suggestive manner about Sam Stone's visit and were asked questions implying that he had ripped a book and soiled a teddy bear. To maximise the suggestion, in two of the interviews children were actually shown a ripped book and a soiled teddy bear as evidence of Sam Stone's clumsy misdeeds. In a final interview children were asked to tell about what had happened during the day-care visit and were directly asked whether they saw the book getting ripped and the teddy bear being soiled. Almost half of the 3- and 4-year-olds who had received the stereotype and were then interviewed in a highly suggestive manner made false claims about Sam Stone. When they were asked direct questions 72 per cent of children agreed that Sam Stone had some part in ripping the book and soiling the teddy. This clearly shows that children can create false memories and report false information about events that did not happen. However, it is interesting to note that when these children were confronted about Sam Stone's misdeeds 'you didn't really see him … [rip book/soil teddy] … did you?' the agreements that the false event had actually taken place dropped to 21 per cent, further suggesting how easily led they are.

While false memory and suggestibility clearly involve distortions of memory, social factors may also play a role in encouraging false reports. Jones and Pipe (2002) asked children who had visited a 'friendly pirate' misleading questions about what happened, for example 'was the pirate wearing red and white trousers?' when the pirate's trousers were actually blue and white. They found that children could answer the misleading questions correctly only 60 per cent of the time. Because the children were questioned about what happened immediately after the event in question, the incorrect responses couldn't be entirely attributed to a failing of memory. Children very likely acquiesced (agreed) and simply went along with what the interviewer suggested happened, perhaps not

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willing to disagree with an adult they perceive as a more knowledgeable interlocutor.

When evaluating the accuracy of information reported by witnesses in interviews it is, therefore, important to be aware that there is always a possibility that a witness may be recollecting a false memory. While not all individuals are equally likely to be susceptible to suggestibility and the effects of post-event information (Eisen *et al.*, 2002), witnesses may generally be more susceptible to post-event information generated by a police officer than when generated by a member of the public (Dodd & Bradshaw, 1980). As both a 'credible' and 'knowledgeable' source, when combined with the situational demands of the interview process, witnesses may be particularly susceptible to cues given by the officer during the interview (be they correct or incorrect). This may be even more pronounced when memory of the original event is poor (Schooler & Loftus, 1993) as is often the case with eyewitnesses due to less than optimal perception and encoding environments.

Interviewers should, therefore, approach interviews with an open mind and seek corroborating evidence to support witnesses' claims whenever possible. It is also vital that interviewers consider the types of questions they ask and pay particular attention to the wording of questions. Police officers often interview several witnesses of the same crime; thus, as their knowledge of the event in question increases they should ensure that event information (learned from prior interviews) is not subsumed into any subsequent questioning. This is especially important when interviewing children. That said, professionals, throughout the criminal justice system, are now aware of the effects of asking leading questions to a far greater extent than has previously been the case. Research conducted by suggestibility researchers has informed and guided those whose job it is to collect witness information.

Witness Interviewing in the UK

The problems associated with witness memorial performance, discussed above, provide an indication as to just how difficult it can be to elicit a detailed and accurate account when interviewing a witness. Conducting such an interview is a complex skill, a process of conversational exchange (Shepherd, 1991) in which both the witnesses and interviewers play an integral role. However, the onus is on the interviewer to optimise witness memorial performance in terms of both the amount and accuracy of information reported about a crime (Koriat & Goldsmith, 1994). It should be clear from the preceding discussion that the two primary problems encountered by police officers during an interview, which negatively impact both the quantity and quality of witness recall, are errors of omission (forgetting) and errors of commission (false memories). Owing to the importance placed on witness testimony by the criminal justice system, it is clear that incomplete, erroneous and distorted witness information can have serious ramifications.

In the early 1990s, following well-publicised criticisms of police interviewing techniques (e.g. Baldwin, 1992), the Home Office in conjunction with the Association of Chief Police Officers developed and introduced the PEACE investigative interview model. The PEACE model (a mnemonic for the stages of an investigative interview; *Planning and preparation*, *Engage and explain*, *Account*, *Closure* and *Evaluation*) was designed to equip interviewers with the skills necessary to conduct ethical and effective investigative interviews in any situation. Introduced across England and Wales in 1992, PEACE not only standardised investigative interview training for the first time, but also introduced the notion that interviewing was an investigatory process whereby the officers' role was to gather evidence and obtain information (NCF, 1996). Prior to this, the prevailing approach for obtaining information about crimes was to focus on suspect interviews during which police investigators generally aimed to obtain a confession and to confirm what was 'believed' to have happened rather than searching for the truth by interviewing all those involved (Baldwin, 1992).

With respect to witness interviewing, PEACE advocates that the Cognitive Interview procedure should be employed when conducting such interviews. The Cognitive Interview is a multidisciplinary interview technique that was initially developed in the early 1980s, in response to many requests by American investigators and other legal professionals for clear guidelines as to how witness memory could be improved. The Cognitive Interview is one of the most well-researched and widely acknowledged interview procedures for enhancing information obtained in witness interviews and has been described by those in the field as 'one of the most exciting developments in psychology in the last ten years' (Memon, 2000, p.343). Devised as a practical forensic tool, the Cognitive Interview is concerned exclusively with the retrieval of information from memory, specifically with how the retrieval (remembering)

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process might be optimised during an interview situation.

Initially presented in 1984 (Geiselman *et al.*, 1984), the procedure evolved over several ensuing years with a number of refinements and enhancements being made (Fisher *et al.*, 1989). This development process is well documented and falls into two fairly distinct phases, with the initial procedure being referred to as the original Cognitive Interview and the latter as the Enhanced Cognitive Interview. In its current enhanced form (see Fisher & Geiselman, 1992) the procedure comprises four retrieval components, generally referred to as the 'cognitive' components, namely (i) *mental context reinstatement*, (ii) *report everything*, (iii) *recall in a variety of temporal orders*, and (iv) *change perspective*.

The *mental context reinstatement* technique emanates from the principle of encoding specificity. It is one of the principal components of the Cognitive Interview whereby the interviewer encourages the witness to mentally reinstate both the psychological and physical environment that existed at the time of the event in question (for example their thoughts, emotions and smells) in order that they might act as retrieval cues for that event. The mental context reinstatement procedure comprises a series of 'mini' instructions in that the witness is encouraged to re-create the context one step at a time. For example, an interviewer will ask a witness to:

> Reinstate in your mind the context surrounding the incident. Think about what the room looked like … where you were sitting … how you were feeling at the time, and think about your reactions to the incident. (Geiselman *et al.*, 1984, p.76)

The *report everything* instruction aims to lower witnesses' subjective criterion for reporting information by instructing them not to edit any details about the event of interest because even those details they believe to be insignificant or irrelevant may actually be important. Hence, the interviewer should take time to explain to witnesses just how important it is that they explain absolutely everything they remember.

The assumption here is that even partial or apparently insignificant features of an event can act as retrieval cues by 'triggering' the recall of associated information, thus increasing the total amount reported. By obtaining as much information as possible the first time a witness is questioned the need for repeated interviews is reduced, thereby avoiding associated problems discussed. Interestingly, the *report everything* instruction is also viewed as a useful method for increasing the overall amount of information collected from several witnesses to the same crime, because lots of small apparently insignificant pieces of information collected from several witness accounts can become important clues when aggregated together.

The *recall in a variety of temporal orders* component is viewed as an additional method of accessing information that may have been previously irretrievable. The theoretical rationale here is that the retrieval of information from memory can be influenced by gist-related (schemata) information (see Schank & Abelson, 1977) that acts as an organising structure for knowledge that 'fills in' aspects of an event according to previous experience/knowledge. New information is, therefore, understood in terms of old information, and gist- or script-guided retrieval can result in limited retrieval due to the filtering of recalled information that does not fit the usual script, and/or the filling in of 'gaps in memory' with script information when a witness's memory for an event is incomplete. Encouraging a witness to recall details of an event from the end, or even the middle is, therefore, aimed at limiting script-consistent recall by interfering with forward-only recall.

Finally, the *change perspective* retrieval method aims to access information that may have been irretrievable using the previous three techniques (Bower, 1967). Witnesses have a tendency to report events from their own psychological perspective. Asking a witness to try to adopt the perspective of another person, who may have been involved in the event, may help 'jog' witnesses' memory, thereby increasing the amount of information recalled (Fisher & Geiselman, 1992).

In addition to the aforementioned components, the importance of the social and communication aspects of the investigative interview situation is also considered. Thus, the Enhanced Cognitive Interview also includes several techniques that aim to ensure that the four cognitive components are implemented to best effect. It is recommended that, before the cognitive components described above are used, interviewers take time to establish rapport with the interviewee, so reducing their anxiety about the interview process by commencing the interview with innocuous and easily answered questions.

Furthermore, several straightforward interviewer behaviours are included in the Enhanced Cognitive Interview, which aim to further encourage *focused retrieval*. First, the interviewer should explain/convey to the interviewee that it is their effort that will affect the

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outcome of the interview, and that ultimately the success of the interview will depend on the interviewee's mental effort. Second, the interviewer should encourage the interviewee both to concentrate and to actively participate by allowing the interviewee to do the majority of the talking by using open-ended questions, wherever possible, and the strategic use of pauses. Finally, *witness-compatible questioning* advocates that interviewers should tailor their questioning according to the witness's pattern of recall rather than the interviewer adhering to a rigid sequencing of requests for information that imposes a 'police report' style of organisation on the retrieval process which, in turn, may limit witness recall. To that end, witness-compatible questioning dictates that the interviewer should actively listen to each interviewee's account of what they have experienced and ask questions in the same order as they have initially recounted the event (see Fisher & Geiselman, 1992; Memon & Bull, 2000; Milne & Bull, 1999 for a more comprehensive description of the Enhanced Cognitive Interview).

All police officers (police recruits and expert interviewers alike) in England, Wales, and Northern Ireland are now taught to employ many of the Enhanced Cognitive Interview components when interviewing witnesses. Currently, the Enhanced Cognitive Interview procedure is taught to police officers using a building-block approach within a tiered interview training framework ranging from Tier 1 to Tier 5 (see Griffiths & Milne, 2005 for an introduction to the tiered approach to interview training in the UK). All police officers commence their police career as a Tier 1 interviewer. They are taught a basic Cognitive Interview procedure (comprising a limited number of techniques) that is commensurate, not only with their limited experience and training, but also with the types of witness interviews they conduct (i.e. with the witnesses of less serious crime). Should their duties and interviewing competency warrant it, officers are then able to undertake further training and can progress through the tiers, ultimately becoming a Tier 5 interview adviser, the most well-trained and skilled interview strategists.

It can be seen that psychological research has, undoubtedly, not only informed the criminal justice system as to the problems associated with witness memory, but it also underpins the current approach to witness interviewing in the UK. Police officers are now being trained to apply interview procedures/protocols that take account of the complexities of the retrieval process in terms of guiding them how best to assist each witness to recall as much accurate information as possible during an interview, thereby maximising this important information gathering opportunity. As previously introduced, witnesses are a fundamental part of the criminal justice system and obtaining witness information is a complex skill and one which has, only relatively recently, begun to be afforded the status it deserves. Historically, witness interviewing was viewed as a low-status police activity, when compared to the interviewing of suspects, a situation that was borne of both a lack of training and knowledge.

Post the introduction of PEACE, witness interviewing has, without doubt, improved. However, that said, there are some well-documented problems associated with the application of the Cognitive Interview procedure in forensic settings. For example, police officers consistently report that they apply some of the individual Cognitive Interview components they are taught far more frequently than others, and that some of the techniques are not applied at all (e.g. Dando *et al.*, 2008; Kebbell *et al.*, 1999; Wright & Holliday, 2005). Field studies carried out in the early 1990s (George, 1991; Clifford & George, 1996) found that no officers applied the Cognitive Interview procedure in full. More recently, a national evaluation of investigative interviewing in England and Wales (Clarke & Milne, 2001) reviewed 75 'real life' witness interviews. No evidence, at all, was found of the Cognitive Interview procedure having been used in 83 per cent of these witness interviews, which is somewhat alarming.

Practical reasons as to why the Cognitive Interview is not implemented in many real-life witness interviews may be that it takes longer to conduct and police officers experience considerable time constraints while on duty. Furthermore, not only is the Cognitive Interview viewed by some police interviewers as time consuming, it is also viewed as inappropriate in some situations, especially when interviewing witnesses about less serious crime. Equally, it is acknowledged that the Cognitive Interview places extensive cognitive demands on the interviewer (e.g. Fisher *et al.*, 1987). Consequently, it may be that psychologists now need to concentrate on modifying the procedure with a view to increasing its forensic application, especially in time-critical and complex situations, while at the same time retaining the well-demonstrated Cognitive Interview superiority effect.

Equally, however, the type of training provided may also account, in part, for the apparently patchy application of the Cognitive Interview. Despite the introduction of the new tiered approach to training, police

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officers are initially taught how to interview witnesses during a one-week interview training course. This course combines the teaching of both suspect and witness interview techniques. Thus, the average amount of time spent teaching novice officers to apply the Cognitive Interview when interviewing witnesses is only two days! This timeframe does not allow police officers to become highly familiar with the Cognitive Interview or any of the principles of memory discussed in this chapter. Recent research shows that police officers agree that the training they are receiving is not sufficient to equip them with the skills necessary to confidently apply the Cognitive Interview procedure as it is taught (Dando *et al.*, 2008). Indeed, research has long indicated that Cognitive Interview training should be separate from suspect interview training (rather than combined as it is currently; e.g. Clifford & George, 1996), as this has been found to be more effective in terms of officers' application of the procedure in real witness interviews.

In summary, there has been a great deal of empirical, applied and field research that has informed and continues to inform the forensic community as to how witnesses should and should not be interviewed. These advances in our understanding have undoubtedly resulted in justice being better served. Increasing the quality of witness evidence in an investigation increases the chances of ensuring that the correct decisions are made as to guilt or innocence. A success story for the field of psychology has been seeing the development of the Cognitive Interview and its uptake into the system of police training in the UK. With an eye to the future, the new frontier for researchers of witness interviewing will, undoubtedly, be to improve training and interviewer skills, as well as further honing interview techniques/procedures towards the great variety of situations in which they are called into use.

Further Reading

Brainerd, C.J. & Reyna, V.F. (2005). *The science of false memory: An integrative approach*. Oxford: Oxford University Press.

Brainerd and Reyna compile the most comprehensive review of false memory theory, research and debate. This book begins by reviewing the history of false memory research before tackling theoretical explanations and associated research. Throughout the book there is detailed consideration of developmental differences important to understanding false memory. Applied research is also reviewed and issues to do with witness interviewing and suspect identification are explored. The book concludes by reviewing the interview protocols that have been developed in accordance with scientific principles that have become the 'gold standards' in the world of witness interviewing today.

Lamb, M.E., Hershkowitz, I., Orbach, Y. & Esplin, P.W. (2008). *Tell me what happened: Structured investigative interviews of child victims and witnesses*. Chichester: Wiley.

This book reviews the development of a purpose-designed interview protocol for interviewing children about sexual and physical abuse. Acknowledging that the greatest difficulty in applying the principles of memory and communication to witness interviewing is actually getting interviewers to follow scientific and government guidelines, Lamb and collaborators have developed a 'structured' interview protocol that leads the investigator through each stage of a forensic interview. Using the protocol has been proven to result in interviewers eliciting a larger number of relevant details from witnesses compared to interviewers who are not trained in the use of the protocol. The guidelines outlined in the book are based on analysis of 30,000 forensic interviews with children in Israel, Sweden, the UK and the USA. It is the largest research database of this type in the world. The protocol is consistent with the interviewing approach recommended by the Home Office in *Achieving Best Evidence*.

Milne, R. & Bull, R. (2001). *Investigative interviewing: Psychology and practice*. Chichester: John Wiley & Sons.

Milne and Bull provide a comprehensive, concise, and clearly written overview of investigative interviewing that introduces the reader to both the psychological theory and empirical research that underpin the current approach to conducting interviews with suspects, witnesses and victims. Further, they describe good investigative interview practice, explain how investigative interviewing has evolved and the practical problems faced by those tasked with conducting interviews in applied settings, and draw attention to the difficulties associated with interviewing children and other vulnerable people. Without doubt, this book is highly relevant for all those who have an interest in investigative interviewing, whether that be from an applied or a research perspective.

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