Report on Psychological Research into Eyewitness Testimony

Eyewitness testimony is the study of how accurately a person may recall significant events that they have witnessed taking place. In the scenario of an individual witnessing a crime it is highly important that the statement they give of information that they remember is accurate, as in a court their evidence will highly influence jurors. By studying eyewitness testimony psychologists have been able to see the causes of inaccurate reports made by witnesses; this research can show the court that so much weight shouldn't be placed on an eyewitness' account, and can help to prevent errors occurring so frequently in the justice system. The main areas that psychologists believe may affect the memory are reconstructive memory, leading questions in interviews, and effects from fear or anxiety.[1] Research into these areas allows psychologists to understand how the mind and memories of an eyewitness functions, and so to adjust current methods used within eyewitness testimony accordingly. This can help to improve the reliability of accounts given by eyewitnesses, using results of relevant investigations as a solid basis.

Reconstructive memory is the theory that memories may be distorted by an individual's prior knowledge or expectations surrounding an event.[2] Bartlett (1932) proposed this idea as memory involving active reconstruction and interpretation of events. Instead of merely recalling the actual facts that we witnessed or know to have happened, memory draws upon understanding and knowledge that we already have in our minds of previous similar events (commonly known as schemas).[3] The influence of a schema in eyewitness testimony may appear as the witness creates a 'memory' of what happened- in the incident a thief may have snatched a woman's handbag and run away, but due to the previous knowledge and experience stored by a schema that violence is often involved in these types of attacks, the witness may claim to have seen the attacker push the victim, although contact was never made.

A key study into the reconstructive memory and the influence of schemas was performed by Bartlett (1932). He used a folk story to test the effects of unfamiliarity on the participants' recall. Participants, who were all English, were told a traditional North American folk tale known as "The War of the Ghosts". The story used words and ideas that the English participants would not be familiar with, as they would not normally feature in conventional Western stories that they may have previously heard. Bartlett allowed for a 2o hour period to elapse before asking the participants to recall the story; this amount of time would allow any effects of schemas and reconstructive memory to take place. After the initial recall, participants were asked to repeat the story a number more times.

Bartlett found that participants changed the original story in many ways. The language and narrative techniques they used were typical of their cultural and literacy background. More importantly; rationalizations, omissions, changes of passage order, alterations in the importance of sections, and distortions of characters' emotions were made. Each time the story was retold, participants would make further adjustments to the text, making it increasingly become a more traditional English story.

This shows how the participants used schemas and reconstructive memory to take the original story and unconsciously rewrite it in their minds to make it more coherent

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[1] "Instant Revision, AS Psychology", Meldrum, Collins 2004

[2] "Psychology for AS-Level", Cardwell Clark Meldrum, Collins 2003

[3] "Instant Revision, AS Psychology", Meldrum, Collins 2004

and easily remembered for them. Ideas that they hadn't previously experienced were either lost or reformed to fit with their preset expectations.[4]
This experiment is important in explaining the theory of reconstructive memory, and it also shows the unreliability of eyewitness testimony. If an unfamiliar story can be changed unconsciously to such a degree after being heard only once, it suggests that after experiencing an unfamiliar event, such as an attack or theft, the memory could ultimately do the same. This would mean that details an eyewitness has provided cannot be entirely trusted due to the nature of the human memory and the concept of reconstructive memory.

Gauld and Stephenson (1967) criticised Bartlett's study as they found that if the participants were told that accurate recall was important then the numbers of errors made were significantly reduced. However, in the case of eyewitness testimony the effect may not be the same. The witness usually understands the importance of accuracy in the information they are giving and is often reminded of this fact, yet real life cases and laboratory studies have shown that recall is still not entirely accurate.
It has also been said that due to the nature of Bartlett's experiment the results may not be consistent. He used a story that he considered to be meaningless to people living in England, although this assumption may be correct there was no way of measuring how meaningless it was to each individual. Due to this people may have been able to relate, or not to relate to the story, across a spectrum; this may have altered the results without explanation- people who understood a certain part of the story better than others were more likely to remember it.

Further investigation was done into schemas in 1981 by Brewer and Treyens whose aim it was to find the effects of schemas on visual memory. Their experiment involved showing 30 participants a room one by one, each person stayed in the room for 35 seconds. The room they entered appeared like an office, containing 61 items- some that one would expect in an office (e.g. a desk, a calendar or a typewriter), some that were more unusual (e.g. a pair of pliers, a skull and a brick). In recall tests it was found that participants were easily able to remember the standard office items, however were less successful at naming the random items.
This was due to the schema expectancy- the regular items had high schema expectancy for an office and so were remembered accurately. The positions of items recalled were also adjusted to fit the participant's schema, such as the notepad being said to be placed on the desk when it was in fact on the seat.
Brewer and Treyens found that the participants automatically used schemas in order to remember the items in the room. They assumed due to their schemas that the room was an office, and so when asked to recall the items in the room, used knowledge from their schema of standard office items. This led to the random items being forgotten and other objects that didn't exist being created.
Once again this shows how eyewitness testimony may be affected. The schema a witness has of an event may affect the accuracy of their recall when retelling the event. There is no guarantee of accuracy in their statement, but witnesses are still used as one of the most reliable sources of information in court cases.

Schemas are not the only influence over a person's memory when trying to recall an event; they may become entwined with false or misleading information presented by others. Loftus (1993) demonstrated this in an experiment known as

[4] "Psychology for AS-Level", Cardwell Clark Meldrum, Collins 2003

'Lost in the Mall'. The aim of the investigation was to show how the human mind can be manipulated initially by others, and then continually by schemas to form false memories of happenings that never occurred.
Loftus used five participants in the pre-test experiment, selecting university students to be the experimenters. Over the Thanksgiving holidays they would imprint false memories on a younger sibling (the participant) and then record the results.
One of the children, named Chris, was convinced over the vacation by his older brother, Jim, that he had been lost in a mall at the age of five. Just two days after being told of this false event for the first time, Chris was able to recall the "memory" in great detail. He was reported by Jim to have said, "*That day I was so scared I would never see my family again. I knew that I was in trouble.*"
The next day he was also able to recall conversations with his mother from after the mall scenario, claiming, "*I remember mom telling me never to do that again.*"
The memory appeared to be stronger after a few weeks had passed and Chris was invited to the laboratory. He was able to recall specific pieces of information in great detail, fully believing that the situation had actually occurred, "*I was with you guys for a second and I think I went over to look at the toy store, the Kay Bee toy and uh, we got lost, and I was looking around and I thought, 'uh oh, I'm in trouble now'. You know. And then I...I thought I was never going to see my family again. I was really scared you know. And then this old man, he was wearing blue flannel, came up to me…he was kind of old. He was kind of bald on top...he had a ring of gray hair. He had glasses."*[5]
This pre-test experiment shows how an initial idea (being lost in the mall) was moulded by a general schema into a 'false memory' that the participant could recall in much greater detail than the original suggestion. The details that had not been provided by the experimenter were filled in by the participant's mind to create a coherent version of the story, much more elaborate than the previous account and heavily based on the participant's own schema. Their understanding of a situation in which someone may become lost in the mall, and how the problem may have been solved developed the rest of the story and replaced any uncertain gaps. They knew from the experimenter that the event occurred and that they were safely returned to their family, but the idea of their rescuer, why they were lost and how they came to be lost was entirely fabricated by the mind.

In the actual experiment twenty-four participants were selected. Each individual was presented with four paragraphs- three of them told of separate real events that happened when the participant was younger (written by the family) and the fourth was a false account of being lost in the mall.
Having read the four stories the participant was asked to write down any recollections they had, giving as much detail as possible, and simply to rely "I don't remember this" if they had no memories.
The results showed no statistically significant figures, however the detail of the false memories was intriguing. Just like Chris had in the pre-test, memories had been confabulated so much it was clear the participants believed in the hoax, due to the unconscious workings of their schemas. So although the data was not quantitative (in that it did not represent the results well numerically), the qualitative detail provided much evidence of the use of schemas that Loftus had hoped for.[6]

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[5] "Opening Skinner's Box", Lauren Slater, Bloomsbury Publishing 2005
Chris' quotes- "The Reality of Repressed Memories", Loftus, American Psychologist 48 1993
[6] "Opening Skinner's Box", Lauren Slater, Bloomsbury Publishing 2005

Although it may be argued that the Lost in the Mall experiment wasn't ethical as the participants didn't know they were involved in an investigation, and so had no ability to withdraw if they wished, Loftus has given psychology a key insight into how the human mind works. Information from this experiment can be used to judge the reliability of an eyewitness account. Just like with the participants, the eyewitness may have "filled in the blanks" in their mind to make the crime they witnessed into a coherent story. This may result in people who weren't involved in reality being linked to the crime in a memory, or acts of violence occurring that never really happened.

Eyewitness testimony is the research that studies the accuracy of memory after an incident or significant event has taken place. The area is interested in the way schemas and reconstructive memory work, and how the mind unconsciously fills in blanks over details that we are unsure of.

Evidence has also shown how witnesses may be affected by information they receive after the crime. Memory distortion may be caused by interrogation (either through a police interview, or from talking to friends), reading information about the case independently, or by generally being involved in the ongoing investigation (and so being influenced by fragmented details being suggested or otherwise brought up).[7]

This section of psychology is considered to be so important due to the amount of weight an eyewitness' account can have in the court setting. Baddeley (1997) found that 74% of suspects were convicted across 300 separate cases where eyewitnesses had identified them, providing the only evidence against them.

If reconstructive memory can be better understood, then eyewitness testimony wouldn't be seen as one of the most reliable resources of evidence, but instead would be treated with caution, as it should in many cases.

Loftus has conducted much research into misleading post-event information, thought to be one of the key causes of memory distortion. The experiments were carried out in laboratories so that real-life situations could safely be mimicked to receive the most reliable results possible.

Loftus (1975) showed a film clip of a car accident to 150 participants. These participants were split into two groups to show the effects on the independent variable (in this investigation it was the question asked by the experimenters). One group was asked a question which was consistent with the film they had seen ("How fast was the white sports car going when it passed the 'Stop' sign?"). Whilst the second group were asked a misleading question involving a false piece of information ("How fast was the white sports car going when it passed the barn when travelling along the country road?").

After one week had passed, all the participants returned to the laboratory to be asked ten more questions. The final, and key, question was "Did you see a barn?".

Although there was no barn in the film clip, the first group answered with a 2.7% total 'yes', as did 17.3% of the second group.[8]

This showed how the second group was more likely to recall a barn being in the film as they had originally been suggested the idea a week previous. Over this time the

[7] http://encarta.msn.com/encyclopedia_761578303_5/Memory_(psychology).html

[8] "Psychology for AS-Level", Cardwell Clark Meldrum, Collins 2003

memory of the barn had become imprinted in their accurate memory, until they believed they actually saw the barn in the incident.
The first group, who had not been asked the misleading question, showed a much lower rate of inaccurate recall. This is because the barn had not been suggested to them before, and so had not become imprinted on their memories.

Loftus (1978) carried out a second similar experiment; with the aim to see if participants would inaccurately recall an event if fed misleading questions, compared to those who had not been otherwise influenced. The procedure this time involved the participants once again being split into two separate groups. Both groups were shown a set of slides leading up to a car accident, however for one group there was a difference in one of the slides. Whilst one group saw a red car stopping at a 'Yield' sign at a junction, the other group saw the car stopping at a 'Stop' sign at the junction. Having seen all the slides, every participant was given twenty questions. Each of the two groups was divided again to create four groups- (i.e. 1A, 1B, 2A, 2B). Within these twenty questions there was one critical question- the first half of the groups (1A, 2A) were asked "Did another car pass the red one while it was stopped at the 'Stop' sign?" and the second half of the groups (1B, 2B) were asked "Did another car pass the red one while it was stopped at the 'Yield' sign?". So overall one half of the participants were given misleading questions (having 'Yield' suggested having been presented with the 'Stop' slide), and the other half of the participants were given a question consistent with what they had actually seen (having 'Yield' be suggested having been presented with the 'Yield' slide).
Twenty minutes later the participants were involved in a recollection test. They were required to view fifteen pairs of slides, and to pick from each pair the one they had seen in the original presentation. These fifteen slides included the critical slide, whether the car stopped at a 'Yield' sign or a 'Stop' sign.
Loftus found that 75% of the participants who were given questions consistent with the slides they had seen in the initial presentation were able to correctly pick the slide that corresponded to their group. Of those who were given misleading questions, only 41% could accurately pick the slide that corresponded to their group.
These findings allowed Loftus to conclude that the misleading question was the cause of correct information being replaced in the memory by false information. It was also claimed that over time the effect of misleading questions becomes more pronounced. This research is supported by other studies, and so the evidence provided is considered to be reliable. Loftus and Loftus (1980) found that accuracy did not increase amongst those who were misled, even when money was offered for picking the correct slide- they truly believed in the false memory and couldn't be swayed; there was no uncertainty over what they remembered.
However it can also be said that although the majority of misled participants chose the incorrect slide, some where still able to accurately remember the original slides and so pick correctly.
This effect is applicable in the circumstance of being shown static slides, however it is questionable what effects would be observed in a real life situation.[9]

Another factor considered to be significant in altering memory is leading questions. Loftus proposed the theory that language used to question witnesses may

[9] "Psychology for AS-Level", Cardwell Clark Meldrum, Collins 2003

have an impact on their recollection. This was demonstrated by Loftus and Palmer (1974).

There were forty-five participants involved in the investigation, all of which were shown seven 5-30 second long clips of traffic accidents. After each clip they were asked to write an account of the incident and answer specific questions. The critical question was involving the speed of the vehicles "About how fast were the cars going when they *insert verb* each other?". There were five groups of participants used to demonstrate the independent variable (for this experiment the independent variable was the verb used within the critical question). For each group one of the following verbs was entered into the question: smashed, collided, bumped, hit or contacted. The results showed a positive correlation with the implied intensity of the crash and the average estimate of the vehicles' speed. So for the 'smashed' group the average speed was estimated to be 40.8 mph, whilst for the 'contacted' group the average speed was estimated to be 31.8 mph.

A week later the participants were asked if they had seen any broken glass. Results showed that their answer depended on the intensity of the crash originally implied during the first stage of the experiment. Although there was no broken glass in the film footage, those from the 'smashed' condition replied 32% 'yes', and those from the 'hit' condition replied only 14% 'yes'.[10]

Psychologists have argued that Loftus' research is too artificial and does not truly represent how a person or witness would react in a real-life situation. Contrary to popular belief, Loftus also claimed that the effect of post-event information was because a new memory replaced the old one, but since 1991 she has agreed with the view of many other psychologists that the false memory merely obscures the correct old memory.[11]

The effects of fear and anxiety may arise in the subject area of eyewitness testimony. Freud proposed the theory that individuals may unconsciously chose to forget an event that they have found particularly anxiety provoking or disturbing in order to prevent psychological damage- he called this 'repression'. However due to ethical and practical difficulties it is hard to prove this theory or provide an evidence towards the idea. As an anxiety provoking situation cannot be induced, only participants who are willing and who have already experienced a suitably traumatic event can be studied. The suggestion of repression featuring in eyewitness testimony is still significant though, as eyewitnesses are often trying to recall a particularly frightening event.

Loftus (1979) used the 'weapon focus' study to investigate the ability of an individual recall information after an emotionally arousing situation. Participants waited outside a laboratory to take part in an investigation, but as they were waiting a staged man exited the room carrying either a pen or a blood-covered paper knife. After this event participants were required to identify the man from a set of fifty photographs. There was a considerable difference between the two sets of results- those who witnessed the man carrying a pen were 49% accurate in recognising his photograph, whilst those who witnessed the man carrying a knife were only 33% accurate.

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[10] www.holah.karoo.net/loftusstudy.htm

[11] "Instant Revision, AS Psychology", Meldrum, Collins 2004

From this Loftus was able to conclude that the anxiety that came from seeing the man carrying a weapon reduced the amount the witness focused on, and so they paid less attention to the man's identity as they were distracted by the blood-stained knife. There have been many concerns over the ethics of this experiment, as participants could have been psychologically damaged by the experience and were not able to withdraw from the experiment as they were unaware that it had already begun when they were still waiting outside the laboratory.
Although other studies support Loftus' conclusion, those investigations only caused mild upset to the participants, and so cannot be compared on the same scale as Loftus' experiment.
Contradictory to Loftus' research, Christianson and Hubinette (1993) discovered that the victims of real crimes were able to recall the incident more accurately than the bystanders who acted as eyewitnesses. This suggests that although the victim was more likely to be traumatised by the event and find it more anxiety provoking, they were able to remember the details more precisely.[12]

In separate investigations into the effect of stress on a witnesses memory studies have been used to prove the Yerkes-Dodson Law, which suggests that when stress is very low, recall is poor. Recall improves when the level of stress is moderate, but once the stress reaches a certain threshold the accuracy of recall returns to poor. Peters (1988) attempted to show this during a nurse's clinic. The subject would enter the room, where the nurse and a researcher were waiting. The nurse would then administer an injection and the subject would be allowed to leave. Later on the participant was asked to identify both the research and the nurse who had been present. Results show that the participants were significantly more able to recognise the research and correctly identify them than they were the nurse. This is because the nurse was associated with the high level of stress caused by receiving an injection, whilst the researcher did not have this link.
Yuille and Cutshall (1986) contradicted these finding with their own experiment into how levels of stress affected the recall of witnesses at an armed robbery. Between four and five months after the robbery had taken place the witnesses were interviewed by psychologists. During the interviewing process they were asked two misleading questions (which according to Loftus (1978) ought to have caused inaccurate recall). However, Yuille and Cutshall found that the questions did not affect the recall of the witnesses; very few of the facts were remembered inaccurately or were reconstructed by the post-event suggestion. From this study it was concluded that there was no clear relationship between the levels of stress experienced by witnesses and the accuracy of recall in later interviews.[13]

It is difficult to accurately research the response and reliability of witnesses because the test conditions must be in a laboratory (a real event cannot be induced for the sake of a psychological investigation due to ethics and practicality). This means that the response of the participants is never going to be the same as that of a real witness. Knowing that they are taking part in an investigation into psychological theories may lead to less accurate recall, or results that do no show a true representation of a real-life situation.
This was shown through Foster *et al*'s (1994) study, where two groups of participants were shown footage of a bank robbery. Whilst one group were informed that the

[12] "Instant Revision, AS Psychology", Meldrum, Collins 2004
[13] Sheet handout "Eyewitness testimony: Factors affecting recall"

robbery was real, the other group assumed it was merely a simulation. The group who believed the robbery to be real (and were led to believe that the responses they gave would be used as evidence in a court trial) were able to identify the robber more accurately than the second group. This shows that it is important for a person to know the consequences of their identification for correct recall, meaning that real witnesses are more likely to perform better in recall tests than participants of a psychological investigation.[14]

The difference between recall in laboratories and in an actual witness-situation was shown by the comparison of results collected by Peters (1988) in laboratory research, and results collect by Yuille and Cutshall (1986) in a study following an armed robbery.

These examples show the unreliability of the research carried out in a laboratory in comparison to the reaction of witnesses in a real-life situation, and how the difference of atmosphere and expectation (knowing it's a laboratory experiment and so their results have no direct effect on another individual, or knowing their evidence may lead to conviction) can change the conclusion achieved.

When psychologists evaluated the standard procedure of interviewing witnesses in Britain they found that little training is used to perfect technique and so to maximise accuracy and amount of details given. It was found that interviewing officers were often counterproductive during the interview, doing things such as interrupting the witness whilst they were recalling information.[15]

Other methods sometimes used include hypnosis. It was widely believed that hypnosis may help witnesses to relive the experience of the incident and so produce better recall performance; however studies carried out have offered opposing evidence. Orne *et al* (1984) found that testimonies made under hypnosis were unreliable and could not be accepted as fact without reasonable evidence to back up the claims made. Putnam's (1979) research agreed with this argument, as people under hypnosis become more susceptible to ideas and suggestions that could be made by the interviewer. Therefore the use of leading questions or misleading information, as argued by Loftus (1974), (1975), would have a greater effect. Putnam's results showed that the participants under hypnosis were more likely to make errors during the interview than those who were not hypnotised.[16]

By taking into account the variables that may affect the accuracy of witness recall, Geiselman *et al* (1985) designed a technique to maximise the amount of correct information obtained during a police interview. This method was to challenge the standard interviewing process found throughout police units, and the idea that approaches such as hypnosis should be relied on instead.

The technique is based on four key instructions that must be followed through the interviewing process: 1) Recreate the original context of the incident, 2) report every detail, 3) recall the incident in a different order, and 4) change perspectives.

Context dependent retrieval is the basis of the first instruction- recreating the original context. It is the idea that the learning environment in which an individual encodes a memory in may affect recall.

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[14] "Psychology for AS-Level", Cardwell Clark Meldrum, Collins 2003

[15] Sheet handout "Eyewitness testimony: Factors affecting recall"

[16] Sheet handout "Eyewitness testimony: Factors affecting recall"

Smith (1970) investigated this claim by giving participants a list of eighty words to memorize whilst sitting in a distinctive basement room. The next day some of the participants were tested for recall in the same basement room, and the rest were tested in a room that had been furbished completely different bearing no resemblance to the previous setting.
The average recall for those who remained in the basement room was eighteen items, whilst those in the separate room only scored an average of twelve items.
Some participants from the group placed in a different room had been asked to imagine the basement room before completing the test. The average result from this group was seventeen.[17]
These results show that the place in which each person was tested affected their results. It seems from these findings that those who remained in the same environment in which they had first been asked to learn the words were able to recall more of the words accurately the next day. This suggests a link between the place of encoding and the ability to recall depending on the place of recall. However, it is thought the environmental differences must be substantial before any change can be noted.
In the cognitive interview, by asking the witness to recall the image of the setting, to think of details such as the weather, lighting or distinctive smells present at the event, and feelings at the time of the incident, the technique is using context dependent recall to try and aid more precise recall.
This may help witnesses to remember information they had forgotten, or made clear details they were unsure of.
Remembering feelings experienced at the time is also important as emotion is believed to play an important factor in recall. The internal psychological state of a person can act as a retrieval cue in a similar way to external contexts (such as the atmosphere or setting of a scene). For example, is a person is happy when a memory is encoded they will find it much easier to remember the memory if they are in a happy mood at the time of recall.
This was shown by Ucros (1989) who found that mood dependence was more pronounced in adults than children, and the dependence is more obvious in real life than in laboratory situations. The mood dependence is also stronger when the mood is positive than when the mood is negative.[18]

Witnesses are required to report every detail they can remember from the time of the crime, even if it does not seem related. Details that may not seem important to a witness may be relevant to the police or another witness as it may help to find evidence or support existing evidence.
Total recall may also help the individual or another person retrieve other aspects of the memory to add to their account of the event. The extra details given may act as psychological clues in memory retrieval.
Retrieval failure may occur when there are inadequate cues to the memory trace, and so there is no prompt to aid recall. This was shown through Tulving and Psotka's (1971) investigation, where it was demonstrated that in many cases forgetting during free recall was cue dependent- it was caused by a lack of appropriate cues.[19]
By using witnesses to supply any information they can remember, more cues are created both for themselves and for other witnesses. This can help to prompt accurate recall, and details that may otherwise have been forgotten.

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[17] "Psychology for AS-Level", Cardwell Clark Meldrum, Collins 2003
[18] "Instant Revision, AS Psychology", Meldrum, Collins 2004
[19] "Instant Revision, AS Psychology", Meldrum, Collins 2004

Similarly retelling the events in different orders may also provide other cues to memory strands. Going back through the memory and concentrating on the separate sections in various orders would require semantic processing. As the memory was most likely to have been encoded semantically, this would mean that semantic links would have been made during the encoding process. Revisiting the memory semantically may cause semantic links made with the original memory to resurface, allowing for memory retrieval to occur.

This idea is supported by Tulving and Osler's (1968) research, where participants were given lists of words, each of which was weakly associated with a paired cue word (e.g. 'city' paired with 'dirty'). The participants were tested for free recall of the first words of the list, or they were tested for cued recall (where they were prompted by the second word).

Tulving and Osler found that the cued recall consistently produced more accurate results than the free recall. However, in order to disprove the argument that a semantically associated word might have prompted the original word Tulving and Osler gave some of the participants weakly, semantically associated prompts that were not the original cue word. Results showed that these words did not facilitate recall.

From these findings they were able to conclude that the specific retrieval cues given at the time of encoding helped to facilitate recall.[20]

This effect would be the same in the cognitive interview. If the witness could be encouraged to make semantic links whilst rearranging the memory in their mind, they may come across a cue encoded at the same time as the memory, which would then lead them to memory retrieval.

Changing perspectives may also lead to processing memories semantically, which in turn would bring up semantic cues to the memory of the event. As with remembering the event in a different order this could lead to better recall or memory retrieval if details have been forgotten.

Geiselman (1988) compared the traditional police interview technique with the cognitive interview to investigate the differences in results produced by each. Eighty-nine students were shown police training videos of violent crimes taking place. After forty-eight hours all the students were interviewed by American Law Enforcement offices (detectives, members of the CIA and private investigators). The interviewer had either been trained to use the standard police interview technique, or Geiselman's cognitive interview technique.

All of the interviews were taped and analysed for the accuracy of recall by the participants. The results were separated into three categories: 1) correct items, 2) incorrect items- details remember incorrectly, 3) confabulated items- details described that had not occurred in the video footage.

The cognitive interview produced far more correct items than the standard interview, with an average of 41.15 items compared to 29.4. However the results for incorrect items and confabulated items were similar across the two techniques.[21]

This suggests that although the amount of accurate recall was improved by the cognitive recall, it did not adjust the amount of unreliable information given. This would still mean that the weight placed on eyewitness testimony was unfair as the reliability of the witness was not dramatically improved.

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[20] "Psychology for AS-Level", Cardwell Clark Meldrum, Collins 2003

[21] "Psychology for AS-Level", Cardwell Clark Meldrum, Collins 2003

However from this investigation, it could be argued that the results were due to the artificiality of the experiment. The findings were gathered from interviewed students who had only watched video tapes and had not actually experienced a real crime.

The performance of participants in this experiment was compared to that of real life witnesses in Fisher *et al*'s (1989) study, where a group of Florida Detectives were trained to use the cognitive interview on genuine witnesses. Results from this study still showed that the information gained from the use of cognitive interview was 47%.[22] So although the inaccurate results cannot be accounted for, the increased accuracy of correct items appears to be reliable.

Later investigations carried out by Wagstaff (2002) show that the other key factors in improving the accuracy of eyewitness testimony are: the length of time between the event and recall, the psychological effect the event has on a witness, the familiarity of the people involved, good visibility of the incident, being in close proximity to the incident, and the length of time the even was witnessed for.[23]

The study of Eyewitness testimony is so important in psychology because of the consequences of accuracy in court situations. Unreliable accounts which may be caused by reconstructive memory or schemas can result in innocent people being charge of crimes they didn't commit. By investigating why the mind changes and reconstructs memories in the way it does, psychologists can improve techniques used within the justice system to maximise accuracy. Loftus' research into reconstructive memory, misleading post-event information, anxiety of witnesses and leading questions has highlighted errors in the standard police interview method.
Using the information gathered in this area, Geiselman was able to construct a better interviewing system- the cognitive interview. Although this did not decrease the amount of incorrect or confabulated answers given during the interviews, it did increase the correct items reported by witnesses by up to 47%.
This has helped somewhat with the reliability of eyewitness testimony, but still so much weight shouldn't be placed on an eyewitness' account during court, due to the level of inaccurate or confabulated information still present.

[22] "Psychology for AS-Level", Cardwell Clark Meldrum, Collins 2003
[23] "Instant Revision, AS Psychology", Meldrum, Collins 2004

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