TREATING MEMORY AS A CRIME SCENE:
THE ROLE OF PSYCHOLOGICAL RESEARCH IN IMPROVING THE QUALITY OF INFORMATION FROM EYEWITNESSES

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Summary
Treating eyewitness memory like a crime scene provides police with the opportunity to preserve a more complete and reliable account from the witness. This article examines how the use of scientifically validated interview methods by police may result in higher quality information for investigations and hence more effective case outcomes.

A young woman makes a complaint to police that the previous night a male acquaintance raped her after a party. An investigation commences to establish what, if any, offending has occurred and decide whether there is sufficient evidence to charge the alleged offender (Kebbell & Wagstaff, 1997).

Initial actions focus on preserving any physical evidence. A specially trained doctor conducts a thorough forensic medical examination of the complainant. Cordonning and containing the bedroom where the alleged rape occurred and conducting a detailed scene examination are priorities. Crime scene examiners lay down stepping plates and wear gloves, masks and sometimes forensic suits to prevent the accidental contamination of the scene from DNA, fibres or other physical particles. Whatever the demand on resources, precautions are taken to ensure that the most complete, accurate and...
detailed evidence is gathered from these sources in a manner that can withstand the scrutiny of the courts. Immediate response is vital as delay may result in the loss or contamination of evidence.

The type of professional response described above is justified as evidence from a scene examination is often an important source of information for an investigation. However, police officers also believe that eyewitnesses are a critical source of information for investigations, although they rarely provide enough reliable details (Kebbell & Milne, 1998). Psychological research suggests that, like a physical crime scene, an eyewitness’s memory for an event is open to contamination and may decay over time (Fisher & Geiselman, 1992; Milne & Bull, 1999; Read & Connolly, 2007). Similar precautions should therefore be taken to examine a witness’s memory so the most complete, accurate and detailed information is obtained and preserved. This article describes three steps based on psychological science that are cornerstones to optimising and preserving witness recall. How following these steps may result in higher quality information from the witness to the benefit of investigations as a whole is also discussed.

Step 1: Reduce the Risk of Deterioration to the Memory Crime Scene

As a general rule the effects of forgetting mean that the closer the interview is conducted to the event the more complete the information recalled (Ebbinghaus, 1913; Read & Connolly, 2007; Rubin & Wenzel, 1996). Research suggests that forgetting occurs rapidly at first and then evens out over time (Ebbinghaus, 1913). Coarse details are less likely forgotten than fine grain details (Begg & Wickelgren, 1974; Goldsmith, Koriat & Pansky, 2005; Kintsch, Welsch, Schmalhofer & Zimny, 1990). This is important because investigations often rely heavily on finer grain details that could be lost from memory as time passes, such as a description of the perpetrator or conversations that took place between the witness and the perpetrator.

In addition, unlike popular perception that memory is like a video recording, research suggests memory retrieval is a constructive and reconstructive process. The greater the time passed since the crime event, the greater the opportunity for memory distortions (Ryan, Hoscheidt & Nadel, 2008; Suddendorf & Corballis, 2008; Tulving, 1972). Discussions between the witness and other people may cause source errors where the witness unwittingly integrates the information provided by these sources into their account (French, Garry & Kazuo, 2008; Gabbert, Memon & Allen, 2003; Loftus & Banaji, 1989; Loftus & Palmer, 1974). Friends and family, other witnesses, the communications operator, the initial attending officer, the doctor conducting the medical examination, counsellors, the media and the interviewing officer are all potential sources of contamination. The witness’s memory may also take on a closer script narrative and become more like her expectancies of what would happen (Greenberg, Westcott, & Bailey, 1998; List, 1986; Tuckey & Brewer, 2003). For example, the witness may later assume that the perpetrator is male when in fact she did not actually know the gender of the perpetrator. The types
of contamination just discussed may mislead the investigation and undermine the credibility of the witness to the detriment of effective case outcomes. Interviewing sooner is not always better though, intoxication, trauma and tiredness can all negatively affect memory retrieval so it is advisable to interview when these factors are no longer or less present (Fisher & Geiselman, 1992).

**Step 2: Use Scientifically Validated Methods to Examine the Memory Crime Scene**

Scientifically validated interview methods can increase the amount and accuracy of information recalled (Milne & Bull, 1999). Leading or suggestive questions that imply the desired answer are one source of memory distortions previously described and should be avoided (e.g., “Was he carrying a firearm?”). Open questions that encourage unrestricted narrative responses are considered most desirable by investigative interviewing researchers as they allow the witness to control the flow of information potentially generating more detailed and comprehensive memory recall (e.g., “Tell me everything that happened.”). Closed questions may be required to increase clarity of the account and explore ambiguous responses, but are unlikely to provide such rich information and may result in decreased accuracy (e.g., “What height was he?”).

Developed by psychologists Fisher and Geiselman in the 1980s, the cognitive interview (CI) is another proven method that may lead to even more information from the witness. A meta-analysis of research studies showed that the CI elicited an average of 41% more correct details when compared to the standard police interview and accuracy was equivalent (Köhnken, Milne, Memon & Bull, 1999). The CI uses a series of mnemonics or memory retrieval strategies, based on psychological science, that help aid a witness’s recall for events (Fisher & Geiselman, 1992). For example, asking the witness to mentally reinstate context is thought to aid recall by increasing the similarity between the environment where the event was encoded into memory and the recall environment. In practice this translates into helping memory retrieval by asking the witness to think back to where they were when they witnessed the crime and what they could see, hear and feel. The CI also incorporates social variables such as building rapport, explaining the interview process and active listening. Allowing the witness to control the interview by not interrupting them, and allowing them to remember what happened in his or her own time, order and pace is also likely to aid memory recall (for more information see Fisher & Geiselman, 1992; Milne & Bull, 1999). A thorough memory rehearsal through a CI may also help preserve the witness’s memory for testimony at trial or other recall attempts by reducing the likelihood of memory distortions (Geiselman, Fisher, Cohen, Holland & Surtes, 1986; Memon, Zaragiza, Clifford & Kidd, 2010) and the amount of information forgotten (Brock, Fisher & Cutler, 1999; McCauley & Fisher, 1995; see also Gabbert, Hope & Fisher, 2008).

**Step 3: Preserve the Memory of the Crime Scene**

Video recording the interview rather than creating a written record will preserve
a more transparent, reliable and complete record of the witness’s account. The
cognitive and linguistic demands of preparing a written statement make it prone
to bias and have led to criticism from attorneys (Heaton-Armstrong & Wolchover,
1992), linguists (Rock, 2001), psychologists and police officers (Milne & Shaw,
1999; Shepherd, 1999; Westera, Kebbell & Milne, 2011). Actual analyses of
investigators notes taken from the interview support the view that the statement
is an incomplete and unreliable record of interview (Köhnen, Thurer & Zoberbier,
For example, Rock (2001) found that when the audio-recording of an interview
was compared to the written statement resulting from it, information was lost
including contradictory information and the degree of the witness’s uncertainty
about central facts.

Video recording is preferable to audio recording as it also captures non-verbal
communication allowing the witness to use actions to describe what happened.
For example, it may be easier to physically demonstrate a strangle hold on camera
than to describe it in words. Other benefits include preserving the demeanour of
the witness and the ability to use this one record for other criminal justice purposes
such as intelligence gathering or cold case reviews (Westera ‘et al’, 2011).

Impact on Investigation Outcomes

Applying the three steps just described is likely to result in higher quality
information for the investigation and also improve the evidential sufficiency
of the witness’s account. This is important as strength of evidence in itself is a
predictor of successful case outcome (Devine ‘et al’, 2001). Furthermore, when
more investigative leads are generated the likelihood of corroboration with
other evidence may also increase. Strength of evidence is also a critical factor in
a suspect’s decision to confess, which in turn increases the likelihood of a guilty
plea (Gudjonsson & Petursson, 1991; Moston, Stephenson & Williamson, 1992).
For example, Kebbell, Hurren and Mazerolle (2006) found that when questioned
about their interview behaviours, convicted sex offenders perceived evidence
presenting strategies are more likely to facilitate confessions. Furthermore,
(Kebbell, Hurren & Roberts, 2006) found mock suspects were more likely to confess
if eyewitness evidence was accurate when compared to inaccurate. When there are
multiple victims, more information about the alleged offender’s modus operandi
may corroborate their accounts and could later be used as similar fact evidence.
Another benefit is if the witness is being deceitful, additional detail may generate
more provable facts and checkable lies that can be tested against other evidence.

Finally, many countries can now use this same video recorded police interview in
the place of direct examination by the prosecution in the courtroom (e.g., England,
Wales, Northern Ireland, Norway, New Zealand, and the Northern Territory of
Australia). The use of this mode of evidence provides the opportunity for jurors,
like investigators, to benefit of the more reliable and complete preserved memory
crime scene.
Conclusion
Treating eyewitness memory like a crime scene provides police with the opportunity to preserve a more complete and accurate account from the witness to the betterment of investigative outcomes. To maximize the forensic quality of eyewitness evidence investigators should: 1) Reduce the risk of deterioration to the memory crime scene; 2) Use scientifically validated methods to examine the memory crime scene; and, 3) Preserve the memory crime scene.

References