



WITNESSING AN ACCIDENT: Using Expert Psychological Testimony to Educate Juries about the Malleability of Human Memory

Appropriate attribution of blame and responsibility an accident, such as a traffic accident or workplace injury, sometimes requires obtaining and analyzing eyewitness accounts. The eyewitness who views an accident presumably creates a memory trace of the events that led up to the accident and the accident itself. By interviewing the eyewitness, an investigator may obtain and document the eyewitness account for use in subsequent investigation, dispute resolution or litigation.

Eyewitness accounts, however, are subject to the limitations of human perception and memory. Even an honest, well-meaning eyewitnesses with no stake in the dispute resolution outcome may confidently convey inaccurate details of an accident and firmly believe in the

accuracy of his or her account. The sincere, highly confident, but inaccurate eyewitness might be very influential to the fact-finder. Psychological research shows that it is difficult to tell when a confident eyewitness is accurate or inaccurate. Confident eyewitnesses provide compelling and believable testimony. When faced with a confident eyewitness who might be inaccurate, it behooves the attorney to gain a solid understanding of the factors that may have contributed to eyewitness error.

Scientific research on eyewitness memory and social influence can assist the attorney with identifying the factors that could increase or decrease the risk of error in eyewitness testimony. While the science offers no specific test of the accuracy of a given eyewitness,

the science does provide a framework for understanding the cognitive and social factors that give rise to memory errors. An eyewitness expert can be helpful in educating the attorney, judge, or jury about those factors so that all parties can make a more informed assessment of the accuracy of an eyewitness.

Who are Eyewitness Experts?

Eyewitness experts are typically cognitive or social psychologists whose primary occupations are in university teaching and research. Cognitive and social psychology are two of the five pillars of psychology (the others being biological, clinical, developmental psychology), and both subfields of psychology have been the topic of scholarship and teaching for decades. Eyewitness

scientists present their research at scientific conferences (e.g., the American Psychology-Law Society conference) and publish their research in well-respected, peer-reviewed journals (e.g., *Law and Human Behavior*, *Applied Cognitive Psychology*). They teach psychology courses, supervise research theses, provide university and professional service, and have comprehensive CVs that reflect their education, employment history, and records of notable accomplishments, such as research grants, publications, and professional presentations. Some eyewitness scientists regularly take cases as eyewitness experts.

What is Eyewitness Science?

Eyewitness science refers to a body of scientific literature on eyewitness memory. The research literature addresses such questions as How accurate is eyewitness memory? What cognitive and social influence factors increase the risk of error in eyewitness memory? What techniques and procedures can be used to improve the accuracy of eyewitness memory? How accurate are eyewitnesses' own assessments of their memories? How accurate are third parties' (e.g., jurors) assessments of eyewitness testimony? How is eyewitness confidence related to accuracy? What factors lead to the inflation of eyewitness confidence? Some of the earliest scientific research on eyewitness can be traced to the early 1900s and scientists such as Alfred Binet, William

Stern and Hugo Munsterberg. Eyewitness science began to proliferate, however, in the 1970s with the seminal research of Drs. Elizabeth Loftus, Ray Bull, and Gary Wells. Eyewitness science grows out of cognitive psychological research on human memory and social psychological research on social influence. A search on google scholar or in scholarly databases would yield hundreds of books, book chapters, and peer-reviewed articles on the psychology of eyewitness testimony. Scientific research on eyewitness testimony is taught in general psychology courses and is the subject of master's theses and doctoral dissertations. There are observable signs of the acceptance of eyewitness science in law enforcement and in the courts. Many police departments have revised their procedures for photo arrays and lineups in light of scientific research on eyewitness identification errors. Several state supreme courts (Massachusetts, New Jersey, and Oregon) cited eyewitness science in recent decisions.

What Eyewitness Research is Relevant to Witnessing Accidents?

An eyewitness who views an accident forms memory traces for the events leading up to the accident and the accident itself. The eyewitness expert can draw upon a large body of psychological research to help the attorney and jury understand the factors that

may increase the risk of error in eyewitness testimony. The quality, accuracy, and level of detail of that memory trace depends upon the conditions under which the event was witnessed and the psychological state of the eyewitness at the time of the incident. Conditions may refer to physical properties such as viewing time, distance, lighting, and obstructions. The psychological state of the eyewitness may refer to such matters as to the eyewitness's level of distraction and engagement at the time of the investigation, the level of shock, stress, or fear experienced by the eyewitness, and the eyewitness's schemas and expectations about how accidents unfold.

Once the eyewitness encodes the details of an accident, the memory trace becomes stored in short-term and transferred to long-term memory. Once in long-term memory, the trace begins to decay with the passage of time. The decay is not linear, but rather follows the shape of the "forgetting curve," meaning faster decay early on, and slower decay as time passes. Time is not the only factor that influences the memory trace once in storage, however. Decay can be slowed through periodic rehearsal (e.g., through multiple attempts at recall or multiple interviews). The eyewitness may update his or her memory with information learned after the accident. When this happens, the eyewitness might not accurately track what information was actually witnessed and what information

was learned later, thus giving the appearance of having a more detailed and perhaps more accurate memory trace than the trace originally encoded at the time of the accident. Sometimes misleading information after the accident and incorporates the misleading information into his or her memory. In scientific research we call this the "misinformation effect." Once again, the eyewitness may be unable to distinguish the information actually encoded at the time of the accident from the misleading information acquired subsequently.

At some point, as part of an investigation or in preparation for dispute resolution, the eyewitness may be asked to recall the accident or the events leading up to it. The eyewitness might be asked to produce these details on multiple occasions. The amount and accuracy of the information recalled by the eyewitness may depend on the conditions under which the eyewitness is interviewed. These conditions refer to the setting and the extent to which it facilitates or inhibits concentration. The conditions refer to the eyewitness's psychological state, such as the eyewitness' degree of distraction or stress. The amount and accuracy of the information recalled by the eyewitness also depends on the nature of the interview. An interview might be well-organized and scripted yet fail to conform to the eyewitness' mental representation of the event and therefore inhibit

recall. Closed-ended or short-answer questions tend to produce less information than open-ended questions. Repeated attempts at recall typically increase the amount of information that eyewitnesses recall. An eyewitness who is regularly interrupted by an interviewer typically adapts by giving shorter – and therefore less informative – answers. And interviewers who convey information may contaminate an eyewitness' memory, sometimes with inaccurate details.

How Do I Work with an Eyewitness Expert?

An eyewitness expert is most effective when engaged early in an investigation of the accident so that the expert can help determine what information to gather from the accident scene and the eyewitness. The expert should be provided with all police reports pertaining to the eyewitness, all eyewitness interviews and transcripts of any hearings that have occurred. It is important for the expert to learn any information about the accident to which the eyewitness was exposed after the accident and which may have become incorporated into the eyewitness's memory. Thus, the expert should be provided with any print or online articles or correspondence perused by the eyewitness after the accident. The expert will need to be in a position to evaluate the nature of the interviews that led to the eyewitness accounts

in the form of recordings (ideally) or transcripts. In short, the expert file should include any information pertaining to the conditions under which the accident occurred, details learned by the eyewitness after the accident, and records of all interviews that produced the eyewitness accounts. Eyewitness experts do not typically give opinions about the accuracy of a specific eyewitness. Such an opinion would likely be considered to invade the province of the jury. The expert's opinions typically pertain to the factors that may have increased the risk of error in eyewitness testimony, for example, the relevant encoding, storage, and retrieval factors, and their effects on memory as known in the psychological science. The expert may also offer opinions about the relation between eyewitness confidence and accuracy and the factors that can influence (and sometimes inflate) eyewitness confidence. The expert can convey these opinions orally, in a written report, and in deposition or trial testimony. The goal of the expert testimony is to educate the fact-finder about the science of eyewitness memory so that the fact-finder can make a more informed evaluation of the eyewitness testimony.

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