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Eyewitness Testimony

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Subject: Eyewitness Testimony

The Eyewitness
Imperfect Interface
Between Stimuli and Story

James R. Reich, Jr.

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The eyewitness is a link between an event that has taken place and the reporting of that event. In a real sense the memory of an individual is put to the test when a detailed account of what took place is desired. Eyewitnesses provide the support needed in our current legal system. Without their testimony many cases could not proceed and due process would become meaningless. Eyewitnesses' accounts are also the thread with which the fabric of a seemingly paranormal or other anomalous event is woven by the people who investigate or disseminate such claims. It is important, then, to have some understanding of how memory works and what might affect the recall of that memory after it has been recorded.

The study of how people recall events was initiated at the turn of this century by the Harvard psychologist Hugo Munsterberg (1863-1916). In his work he found that people tend to remember events as slightly different from how they actually happened. One of his experiments, conducted during a scientific meeting, involved an incident in which a clown from a passing carnival rushed into the room followed by a man with a revolver. There was an argument followed by a skirmish and several shots, after which both individuals left. The stunned audience was asked by the group leader, the only one there who had prior knowledge of the experiment, to write down all they could remember about what had just happened. Analysis of the information gathered showed that only one individual out of the forty present was able to recall the event with any accuracy. More than half of those present could manage no better than a 60-percent recollection.

Recent research includes work on leading questions. Richard J. Harris (1973) asked questions using quantitative adjective or adverb pairs, such as "old/new" and "tall/short." The subjects in his study were divided into two groups. Each group was instructed to make as accurate a guess as possible in answer to a series of questions. For instance, one group was asked the question: "How tall was the basketball player?" while the second group was asked "How short was the basketball player?" Harris found that the group that was asked "how tall" estimated the height at about 79 inches, while those who were asked "how short" estimated the height at 69 inches. A full 10-inches - practically one

foot - difference!

Using the same pattern in a different question, subjects were asked about the height of an office building. The answers of those who were asked "How high was the office building" averaged a height of 26 stories, while those who were asked "How low was the office building" averaged only 13 stories - exactly one-half that of the first group.

Other researchers have continued probing the leading-question phenomenon. Elizabeth Loftus asked individuals questions about their headaches and the products they used to treat them. The first set of questions asked were (1) "In terms of the total number of products, how many other products have you tried? One? Two? Three?" or (2) "In terms of the total number of products, how many other products have you tried? One? Five? Ten?" The responses to question 1 averaged 3.3 different products, while the responses to question 2 averaged 5.2 different products. The second key question asked was (1) "Do you get headaches frequently, and, if so, how often?" or (2) "Do you get headaches occasionally, and, if so, how often?" The "frequently" group reported an average of 2.2 headaches a week, while the responses of the "occasionally" group averaged 0.7 headaches a week.

Loftus (1974) investigated the possible effects that leading questions may have on memory. The key to her research centered around an initial presupposition. For example, the question "How fast was the car going when it ran the stop sign?" presupposes that there was a stop sign. In reality, the stop sign may or may not have been there. If it was there, Loftus suggests, then answering the question may strengthen or enhance the experience by making more available certain key memory representations corresponding to the stop sign. On the other hand, if the stop sign was not there, Loftus speculated, then it may be treated as new information that could surface at a later time, when the stop sign could be remembered as actually having been there.

Several experiments were conducted to see if this actually is the case. In the first experiment two groups viewed a film of an auto accident, after which they were to answer a ten-item questionnaire. The film showed a car that, after failing to stop at a stop sign, made a right turn. In order to avoid an accident the driver of a car in the oncoming traffic hit the brakes, causing a five-car bumper-to-bumper collision. A diagram was provided labeling the car that ran the stop sign as car A and the cars involved in the collision as B through F. Two key questions were asked. For one group the first question was "How fast was car A going when it ran the stop sign?" The first question for the other group was "How fast was car A going when it turned right?" the second question, asked of both groups, was "Did you see a stop sign for car A?" The results showed that 55 percent of those who were first asked the "stop sign" question answered that they did see the stop sign, while only 35 percent of those answering the "turned right" question answered in the affirmative.

Loftus developed two hypotheses to explain this effect. First, when subjects are asked the initial "stop sign" question, this reinforces their memory of the stop sign and they respond at a later time with this reinforced representation. Loftus's second explanation, called the construction hypothesis, suggests that subjects use the presupposition in the initial "stop sign" question to reconstruct in their memories the existence of the stop sign. The importance of the construction hypothesis is that any type of information can subsequently be introduced into a person's memory using questions containing presuppositions, whether the presuppositions are true or false.

Loftus's second experiment was set up to determine whether the construction hypothesis could be supported. In this experiment subjects viewed a 3-minute videotape excerpt showing a disruption in a classroom by eight demonstrators. After the video was shown, a questionnaire with 20 questions was distributed. The subjects were divided into two groups. Nineteen of the questions were similar. The one key question that differed was either (1) "Was the leader of the 4 demonstrators who entered the classroom a male?" or (2) "Was the leader of the 12 demonstrators who entered the classroom a male?" After a week the subjects were asked a new set of 20 questions with the key question for all being "How many demonstrators did you see entering the classroom?" Those who had answered the question counting the number of demonstrators as 12 thought they remembered an average of 8.5 in the video. While the group who had answered the question referring to 4 demonstrators recalled an average of 6.40. This experiment demonstrated that false numerical data can have an effect on an individual's memory. Loftus next wanted to find out if the same results could be seen when the false presupposition concerned something that didn't exist.

In this experiment subjects viewed a short videotape of an automobile accident and then answered ten questions based on the accident. The subjects were divided into two groups. One group was asked the key question "How fast was the white sports car going when it passed the barn while traveling along the country road?" and the other group had the question "How fast was the white sports car going while traveling along the country road?" In fact, there was no barn in the video. One week later the subjects returned and answered ten questions about the accident, the key question for everyone being "Did you see a barn!" Of those subjects earlier exposed to the false presupposition that there was a barn 17.3 percent responded that they had seen a barn. Only 2.7 percent of those who did not have the presupposition in the original question responded that they had seen a barn.

To explain this, Loftus described a theory of memory for complex visual experiences. In this theory there are two main processes. The first deals with the acquisition of data, and the second delves into the retrieval of that data. The acquisition can further be divided into two components. The first is the acquisition of the original experience. Clearly not everything that happens to us can be stored in our memory. The mind separates what is and is not to be stored by the amount of attention we give a particular object. If we go for a walk across a field, chances are we will let our minds wander a bit. Soon we find that we have covered a lot of ground. Immediately we wonder how we got where we are. Since we haven't focused our attention on the walk, nothing is remembered. The same kind of thing can happen when we are reading. How many times have you read a paragraph only to discover you have no idea what you have read? In order to acquire a particular memory we must concentrate on what it is we want to store. Once our attention is focused, the mind transforms the information into some form or representation that can be stored in the brain. This newly acquired information is not carved in granite by any means. It is subject to future alterations by a mixing of the actual event with subsequent or even prior information. This illustrates the second component of the acquisition process, the acquisition of additional information. It is at this step where leading questions enter into the picture and are able to distort the true representation stored in memory.

The retrieval process will come into play at any time after the initial experience. Each time the event is brought into conscious thought there is a possibility of altering the original memory. The farther removed from the event, the greater the chance of an imperfect or distorted recollection.

Recently, researchers have added to the understanding of why leading questions affect those who encounter them. Smith and Ellsworth (1987) indicate that the uncertainty surrounding the memory of an event is an important antecedent for the effectiveness of being misled. A clear memory is less susceptible to being fooled by leading questions. Memories of tangential details are more prone to alteration when leading questions are used than are more important details.

Smith and Ellsworth also found that subjects accept leading questions more readily from those they think are more knowledgeable about the event or situation than they themselves are. For example, if a person witnesses some type of crime and the crime is severe enough, say an armed robbery, he or she will experience a lot of stress. Stress usually lessens the witnesses' ability to perceive the event (Clifford and Scott 1978; Loftus 1980). Later, when the police are trying to find out what has happened, they may ask questions that a witness feels he should know the answers to even if he doesn't: "About what time was it when the robbery took place?" "What type of clothing was the perpetrator wearing?" "Was he tall? Short? Fat? Thin?"

If the witness is at all hesitant, the officer may probe with more specific questions, and the witness may be intimidated to answer using the clues that the officer is unintentionally giving.

Officer: "Did it happen in the morning?"
Witness: "I'm not sure, but I believe so - yes, it did take place in the morning."
Officer: "Was he wearing a red long sleeved shirt?"
Witness: "Yes, it was long sleeved. I don't remember the color."
And so on.

When one is interviewing a witness to an event, it is best to present oneself as being as much in the dark about it as the witness.

Another area of investigation concerning eyewitness testimony is the apparent relationship between the accuracy of a witness's testimony and his or her overall confidence. Studies have indicated that nearly 40

percent of defense attorneys agree that there is a positive correlation between the accuracy and confidence of the witness. Although it was found in one study (Kassin 1985) that accurate responses were made somewhat more quickly than inaccurate responses, confident responses were made much more quickly than unsure replies. In other words, the less time it takes to reply, the greater the amount of confidence that can be attributed to the witness. But is this a valid assumption? Further experiments (Smith, Kassin, and Ellsworth 1989) have shown that there is little to suggest that confidence is a good predictor of accuracy, and relying on such a correlation may actually be misleading.

For serious investigations into seemingly paranormal or other anomalous events, it would appear that the investigator should follow a few simple guidelines. First, he or she should determine how many other investigators have already had contact with the individual in question. If the number is high, there is a good chance that the original memory of the event has evolved into something a little different. This would only be natural and should actually be expected in most cases. The second guideline is that investigators should interact with witnesses in such a way that they are not intimidating. They should not be guilty of "tampering with the evidence," the "evidence" being the memory of the reporting individual. Lastly, the investigator should not be influenced by the apparent speed or lack of speed with which the individual replies to a question. A quick reply does not necessarily assure that it is an accurate or truthful answer, nor does a hesitant response mean it is an inaccurate answer. It's up to the investigator to use good judgment when conducting an interview. This may result in shedding new light on many paranormal claims.

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Thanks, take care.
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