

# Factors that affect the accuracy of eyewitness testimonies



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Eyewitness testimony is the usually verbal recount of an individual who has experienced an event, typically of a crime. Eyewitness testimony relies heavily on the capability of the individual's to accurately recount the event. In a trial, the jury is most often persuaded due to the statement(s) of the witnesses. Also, in cases where little material evidence can be collected, eyewitnesses are the focal base for reaching a verdict. It has been argued that because testimonies are largely based on fallible memory which can be influenced by a variety of factors, it should not be depended upon. The contention of this essay is to identify and evaluate the extent of accuracy of this claim by identifying and evaluating factors that affect memory and by reviewing experiments and case studies to reach a conclusion on this matter. Memory and thus eye-witness reliability has become an issue of importance due to the high percentage of errors in identifying and prosecuting accused individuals. Thus, the reliability of eyewitness testimonies and impact on trials should be reviewed.

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Memory is defined as a “ kind of repository in which facts (information) may be retained over some period of time” (Loftus, 1979). According to the Atkinson and Shiffrin model of memory storage (1971), memory is made up of three different types of information stores, each with different duration, capacity and function. The first is Sensory Memory. This type of store lasts for the split second when individuals collect information from their sensory systems and preserves information in its original sensory form. The sense organs are limited in their ability to store information about the world in an unprocessed way for more than a second. Thus, information is filtered through or selected by attention for further memory processing into the next type of memory store. This process of experiencing and filtering information is called acquisition. The next memory store is Short-term memory allows individuals to retain information long enough to be used and lasts approximately between 15 to 30 seconds. Miller (1956) proposed that Short-term Memory had a capacity of about 7 chunks of information. If certain actions are carried out, the information will be transferred to the last type of memory store, Long-term Memory. Long-term Memory provides retention of information which can last between minutes to a lifetime and has a limitless capacity. The process of information deposited in the short-term and long-term memory store is called retention. Information is constantly being transferred between these stores. When witnesses are asked to give account of what they witnessed, information is taken from the long-term memory store and this process is called acquisition.

Events during these three processes may affect the quality of the eyewitness testimony. Information may not have been perceived in the first place during

the acquisition process, information may be forgotten or interfered during the retention process or information may be inaccessible during questioning at during the retrieval process.

## **Events during the Three Processes**

During the acquisition process, there are a number of factors that can affect an eyewitness' report of an event. This can be divided into event factors and witness factors. This section of the essay will evaluate the effect of these factors on the reliability of eyewitness testimony.

Exposure time to the event or object of focus is an event factor. Laughery et al (1971) tested subjects on their recall based on the exposure time to a picture, showed one at a time of different positions of a human face. Two Caucasian male target faces were used, one with fair-colored hair and complexion with glasses and another with a darker-colored hair and complexion without glasses. The independent variable is the time the subjects viewed the pictures, which ranged from ten seconds to thirty-two seconds. The subjects were then asked, approximately eight minutes after exposure to identify the target within a series of 150 slides of human faces. The dependent variable is the accuracy of the subjects' recall. Fifty-eight of the subjects who viewed the pictures for thirty-two seconds correctly identified the target but only forty-seven percent of the subjects who viewed the pictures for ten seconds correctly identified the target. This shows that the more time a witness has to view the target, the more accurate their recall will be. This research is significant as it is very scientific and precisely tested a specific variable that affects memory and recall. Although this is so, it was also conducted in an artificial environment and thus, has low

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ecological validity. The research may also contain cultural and gender bias as it only tested for Caucasian males as the target. Thus, its application to targets of different cultures or gender is questionable.

Estimating factors such as time, speed or distance is often asked of eyewitnesses. This involves perceiving the event and accurately inferring information from it. Marshall (1966)'s experiment tested subjects' estimation of time. Four hundred and ninety-one subjects watched a forty-two second film and a week after they had given their written and oral reports of the event, they were questioned as to the duration of the event. On average, subjects gave an estimate of about ninety seconds. The results show that witnesses can inaccurately estimate certain factors of an event. Although the results are significant, the study was conducted in a controlled environment which gives it little ecological validity. To further assess the accuracy of this study, an additional study that can be considered is Buckhout et al. (1975 and 1977)'s study on the effects of eyewitness testimony in a real situation by staging an attack where a student attacked a professor in front of 141 witnesses. The attack lasted for thirty-four seconds but when interviewed later on, the average estimate of the duration of the event was eighty-one seconds, almost twice the actual time. This study supports Marshall's study which shows that there is a tendency for witnesses to overestimate the duration in an event. This is significant in most cases, especially for cases of self-defense where the time between the attack and the retaliation is very significant in the categorization of the action.

Another event factor is the violence of the event. A research done by Clifford and Scott (1978) investigated the ability of eyewitnesses to perceive violent  
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and non-violent events. Forty-eight subjects with equal number of men and women watched either one of two tapes. In the non-violent version, the characters were involved in a verbal exchange and weak restraining movements. In the violent version, one of the characters physically assaults another character. In an effort to be even, the start and end of the tapes were manipulated to be identical. It was found that regardless of gender, the level of recall is significantly lower for those who viewed the more violent tape. It is inferred that this is due to the greater amount of stress that is produced in response to the violent event. This shows that eyewitness testimony of a violent event should be considered with the possibility of a higher rate of inaccuracy. Though the results are significant due to the high reliability of the scientific method used, it also lacks ecological validity as it was conducted in an artificial environment where witnesses do not actually experience the event.

An event factor that is linked to the witness factor, stress, is weapon focus. Easterbrook (1959) found that under high stress, individuals tend to concentrate more on a few features of their environment and less attention to other features. Weapon focus is where a crime victim is faced with an assailant who is brandishing a weapon.

During an event, stress is a witness factor that should be taken into account. This refers to the level of stress or fear that a witness experiences that may influence their perception during the acquisition process of the event. A simulated case study done by Berkun (1962) placed army recruits in a stressful situation. They were isolated with the exception of a telephone link.

Then, they were told that they were in danger to induce anxiety and were <https://assignbuster.com/factors-that-affect-the-accuracy-of-eyewitness-testimonies/>

required to repair a broken radio by following a series of complicated instructions. It was found that the high level of anxiety impaired performance of the subjects. As this case study was conducted during a period of different ethical standards than today, there are ethical implications to be considered. Nevertheless, the results of this case study significantly supports the Yerkes-Dodson law (1908) which states that emotional arousal facilitates learning and performance up to a point after which there is a decrement. This can be applied to eyewitnesses who experience stress. Their senses may be stimulated but after a point, their acquisition process will be negatively affected. Although this is so, this case study has only looked at male soldiers, thus when applied to the general population, it lacks ecological validity.

Eye-witnesses are being tested on their retention of information from their Long-term Memory. Because retained information and thus, memory is being transferred between memory stores, it is possible that it can be influenced, enhanced or even distorted. Numerous researches have been carried out to investigate the accuracy of this or the extent of influence that may occur.

Loftus and Palmer (1974) carried out an experiment to investigate the effect of leading questions on the accuracy of participants in recalling a car crash. 45 participants were separated into 7 groups and each group watched a video of traffic accidents. The videos lasted from 5 to 30 seconds. After watching the video, participants had to give an account of what they had just seen. The independent variable is the question "About how fast were the cars going when they hit each other?". The word 'hit' is replaced with the words 'smashed', 'contacted', 'bumped' and 'collided' for different groups.

The participants answer as to the estimate of the cars' speed is the <https://assignbuster.com/factors-that-affect-the-accuracy-of-eyewitness-testimonies/>

dependent variable. Loftus and Palmer found that the mean estimate of speed for more aggressive words such as 'smashed' is higher than less aggressive words such as 'contacted'. The results are highly significant,  $p < 0.005$  according to analysis by variance of the data. This indicates that there is an influence of the wording used on the speed estimates. This experiment supports the idea that eye-witness testimony can indeed be flawed or manipulated by recollections under questioning such as an account of an incident from an eye-witness by a police officer. However, criticism of this experiment is directed at its ecological validity. As the experiment was conducted in a controlled laboratory environment and the car crash was only viewed, not experienced, the application of the results of the experiment is questionable when applied to real-life situations.

Contending the results of this experiment is Yuille and Cutshall (1986) case study of a real life event. 13 participants were interviewed using Loftus and Palmer's (1974) technique in their recall four to five months after witnessing an attempted robbery in daylight where one individual was killed and another, seriously wounded. It was found that there was a very high level of similarity between the accounts given by the witnesses, the accounts did not alter in response to leading questions and that the witnesses were able to recall the event in detail. Additionally, accounts of those who were more distressed had a higher accuracy level. These results are different to Loftus and Palmer (1974). The eye witnesses did not alter their accounts greatly in response to leading questions. As this is a case study, it holds high ecological validity unlike laboratory experiments. Although this may be true, Yuille and Cutshall's case study was of an event that was relatively traumatic event



and was viewed in ideal conditions. Most incidents do not mirror this setting. Also, it was an investigation of only one case study. Hence, the application of these findings is debatable when applied to general eye witness testimonies.

Loftus and Zanni (1974) conducted a modification of the original Loftus and Palmer research to investigate the effect of post event information on memory.

## **Defining memory**

## **Theories/Models of Memory**

## **Consolidation Theory**

## **Ecological Validity**

## **Forms of Eyewitness Testimony**

There are multiple ways in which eyewitness testimonies can be given. This essay aims to assess mainly, photo spreads, recounts under questioning, line-ups and photo-based line-ups and. Each form has its own advantages or disadvantages in the evaluation of its facilitation or hindrance to the accuracy of testimonies.

Line-ups + Photo based line-ups

Witness expected to choose one

Choosing of suspect by previous photo(s) shown

Line-up size

Characteristics of line-up individuals

Photo spreads

Only based on facial appearance

Biasness of photo quality

Multiple-recognition test

Recounts under questioning

Type of fact

Investigator's influence

## **Memory**

Acquisition:-

Age

Gender

Weapon focus + Violence of event

Stress

Exposure time

Retention:-

Interaction with other witness(es)

Media coverage of event

Time interval

Retrieval:-

Method of questioning

Question wording

Confidence

Loftus 2002: Washington sniper -> white van.

Frederic Vartlett: remembering 1932