

# Factors Affecting the Accuracy of Witness Memory

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## ABSTRACT

Witness testimony and its accuracy play a very important role in the process of judicial decision. Therefore, it is particularly important for scholars and law enforcement personnel to study the internal and external factors that can affect the accuracy of testimony and witness memory. It is also necessary to take certain measures to ensure the accuracy of testimony. Since the 20th century, many experiments have been verifying whether the witness's own factors and external influence will affect the accuracy of testimony and the credibility of witness identity. This article will analyze the internal and external factors affecting the accuracy of witness memory, and put forward feasible solutions. Based on previous research conclusions, this article explains whether congenital factors such as the age and gender of witnesses are related to the accuracy of testimony. At the same time, it also analyzes some external factors involved in the judicial process that may interfere with the interrogation process, such as the relationship between question types and accuracy, the misleading of repeated questions to witnesses. These experiments demonstrate that the accuracy of children's testimony is lower than that of adults, and the accuracy of women in adults is relatively higher than that of men. They also explain the misunderstanding that people should not adopt the testimony of drunken witnesses. At the same time, they also prove the advantages of open questions in maintaining the accuracy of testimony.

**Keywords:** *eyewitness, testimony, memory accuracy, memory, gender, external factors, internal factors*

## 1. INTRODUCTION

In the process of criminal proceedings, we often need to rely on the testimony of witnesses to help people obtain the truth, so the accuracy of witness testimony becomes particularly important. The witness needs to reconstruct the scene through his own memory, and then describe his memory through language. However, according to the age, gender, living habits and even the degree of influence of external factors, these factors may lead to certain fluctuations in the accuracy of witness memory. This article integrates the previous research conclusions. Most of the research methods are to make the subjects watch a video of an event, and then regulate the living habits of the subjects who have watched it, such as controlling drug intake and drinking alcoholic beverages. Different ways are used to ask the subjects of different ages and genders about their memory of this event, and different testimonies have been obtained, then compare their testimony and answers with the events to find out whether the accuracy rate changes according to the previous variables. These studies will help judicial personnel judge the credibility of witness testimony according to those influential variables, so as

to ensure that the judicial process can be carried out more smoothly.

## 2. THE SUBJECT FACTORS OF WITNESSES AFFECT THE ACCURACY OF TESTIMONY

### 2.1 age and gender impact of witnesses

In terms of age factor, many countries and regions believe that age factor is related to the accuracy of testimony provided by witnesses. The accuracy of testimony given by too young children will certainly be lower than that of an ordinary adult. Therefore, most countries once doubted or denied the witness identity of children. People are more willing to believe the testimony and relevant identification made by adults than their testimony.[2]

It is not unreasonable to doubt the accuracy of the testimony provided by child witnesses. Children spend much less time in the world than many adults and do not accumulate a lot of social experience like adults. Therefore, their ability to judge many events is not as

good as adults [1]. Moreover, most children's language ability is not as good as that of adults. Even if they remember some of the events, their language ability cannot guarantee that they can express them accurately. Moreover, more importantly, in Ceci and Bruck's article [5], the article mentioned that children have a sense of trust in adults. They believe that the adults in front of them are honest and their own partners. They will provide adults with the information they think is required, but they will judge whether the information they provide caters to the wishes of adults according to the reactions of adults, while catering to the wishes of adults and trying to please adults, the information provided by children often deviates from the original facts of the event.

Children are more likely to be misled when asked questions than adults. Research shows that when answering selective questions and misleading questions, children's testimony memory accuracy is lower than that of normal adults. Even if the questioner does not put forward new information in the question, the accuracy of children's answer is still low. Moreover, compared with the event process described by adults, the coherence in the event process described by children is lower than that of adults, because their language ability is lower than that of adults. It may also affect children's understanding of the meaning of the problem because the questions raised contain complex sentence patterns or grammar.[2] In CL Hardy's experiment [6], the research conclusion shows that although the questions are difficult to understand, child witnesses will still answer the questions with a positive attitude, and are willing to show that they have fully understood the questions, so as to believe in their inaccurate answers. This behavior will further affect the accuracy of testimony.

Gender is also a standard of many studies as research elements. Many studies are studying whether gender will give people congenital advantages, which can help them better remember the occurrence process of events, so as to have higher memory accuracy. Shapiro and Penrod's research has proved that women's performance in face memory and recognition is significantly better than men. [12] As a conclusion, they believe that women are more eager to be efficient and abide by the research rules than men, In Hassan and Rahman's study [3], they found that women are more sensitive to the spatial movement of objects, such as the exchange or position movement of objects. However, women are more susceptible to emotional infection than men when dealing with emotional events, and men are more inclined to deal with emotional content more rationally. However, women perform better than men when recalling emotional content, and people's relevant memory will be strengthened every time they recall emotional content. And women pay more attention to

details in life, such as people's clothes, people's jewelry and so on, which men pay little attention to [3].

In Areh's experiment [4] on gender and the accuracy of memory testimony, members of different groups watched a video of a man robbing a woman and were asked to describe the content of the video a week later. The final results show that all female participants describe more details than male participants, and in the details, they describe, the number of wrong details is also less than male participants, while men show higher self-confidence in the accuracy of self-perception. Similarly, men show higher self-perception accuracy in event memory. Another conclusion of the experiment is that in the process of giving testimony, men often show unreasonable greater self-confidence, which makes them look more reliable, leading to criminal investigators and judges drawing wrong conclusions. Although women are not as confident as men in the process, it does not mean that their testimony is not misleading. Misleading still exists, but the overall accuracy of the information is higher than that of men.

## **2.2. Drinking**

Many people believe that regular drinking can lead to memory loss. There will be anxiety and depression. Malnutrition in drinkers can lead to brain edema, accompanied by symptoms including memory loss, insanity, hallucinations, loss of muscle coordination and inability to form new memories. Therefore, if the witness has the habit of drinking, it is bound to have a certain impact on the accuracy of his testimony. However, in an experiment organized by David La Rooy [7], the results were different from this hypothesis. Participants were required to abstain from alcohol and related drugs a week before the experiment. Before the experiment, they filled in a questionnaire, drank the same number of drinks, including alcoholic drinks, and then watched a video about armed robbery. After watching it, the organizer organized the participants to do a ten-minute crossword puzzle task as a distraction task, and then they were asked to write down as much content and details of the robbery video as they liked. If they stop writing for one minute, they will be asked to recall more details and write them down in two minutes. A breath test is required at the interval between each two links. Participants will be asked to recall the details of the event again after 24 hours. The final experimental results show that no matter whether the participants cite alcoholic beverages or not, there is little difference in the accuracy of the details described and the number of errors. The researchers believe that the memory of at least some types of events observed under the influence of alcohol is flexible, and even the alcohol content in blood is relatively high. Moreover, the results even suggest that repeated questioning of a drunk witness can get more effective information than the initial interview,

so the information provided by the drunk witness should not be directly denied.

### **3. INFLUENCE OF EXTERNAL FACTORS ON THE ACCURACY OF WITNESS TESTIMONY**

#### ***3.1 impact of different types of questions***

According to various studies, the questions of questioning witnesses are generally divided into open questions, guided questions and specific finger questions [1]. Various studies have proved that the types of these questions will have a certain impact on the number or accuracy of witness testimony.

In an experiment conducted by Peterson in 1996 [8], they found many injured people. Their relatives did not know the process of their injury, but only knew the process from the caregiver. The researchers first interviewed the injured people and asked some open-ended questions, such as "where did you get hurt?" "What were you doing before the injury?" "And so on, including some judgment questions and directional questions, such as "is the wound very painful?" "Is the wound bleeding "or" falling ""Wait. The results show that these subjects can provide more central details when answering open free recall questions, and the accuracy of these central details is relatively high and there are fewer errors. Directional questions and judgment questions lead to less useful information, which is also the main source of wrong information. They believe that when people answer judgment questions and directional questions, they will have a certain bias against the question itself, which will mislead the information of their testimony and reduce the accuracy of their answers. From the results of this experiment, the advantages of open problem are more obvious than other problem types.

In an experiment of Loftus [9], the research results put forward the relevant views that directional questions will affect the answers. The participants watched a short video of a traffic accident caused by the driver's failure to stop in time in front of the stop sign, and then were divided into two groups and made different questionnaires. The first question in one group was to ask the speed of the car when it saw the stop sign, and the other group was to ask the turning speed of the car after it didn't stop in time. The last common question in the two questionnaires was whether the participants saw a stop sign. The experimental results show that more than half of the group asked "the speed when the car sees the stop sign" answered "yes", while only 35% of the other group answered "yes". The researchers believe that it may be because the stop sign was mentioned in one group of questions, so the members of this group chose to strengthen the memory of the stop sign when answering the questionnaire, so that they still remember

this detail clearly when writing the last question. Another view is that when the stop sign is mentioned, even if the team members do not remember the details of the stop sign, they will still be guided by the information points in the question, reconstruct their memory in the brain, and finally write their own answers after memory reconstruction. It can be seen that the information mentioned in the directivity question will indeed make some changes in the witness's memory.

#### ***3.2 repeated questions***

For witnesses, repeated questioning often makes witnesses tend to change their answers. It seems that for witnesses, repeated questioning implies that their previous answers are likely to be wrong, especially children [10] in an experiment by Rose and Blank [11], they showed the children two lines of numbers and asked whether there were the same numbers or whether there were more numbers in one line. Most of the children would answer "yes" after counting them, so they organized people to change the numbers from two lines to one line and ask the same question again, some children changed the answer to "no". Even if there were children who answered "yes", they changed their answer to "no" after the researchers repeated it several times. But Rose and Blank found that if children were asked to answer only once after the number moved, they were less likely to make such a mistake. It can be seen that repeated questioning does have the risk of misleading witnesses and allowing them to change their testimony.

### **4. CONCLUSION**

Many studies have shown that whether the age and gender of the witness have an impact on their ability and accuracy of testimony, whether the witness drinks before being questioned may also cause certain elastic fluctuations, which sometimes constitute certain advantages for specific groups. Although some people may question the identity of the witness for reasons such as age or living habits, it is certainly wrong to question the ability of the witness according to the stereotype formed in their own life. External factors cannot be ignored. Interviewers or interrogators in court should also carefully choose the type of questions to ask, strike a balance between how to obtain more information and the accuracy of information, and use the answers obtained from as many open questions as possible, while the answers to guiding questions should be considered and verified carefully. At the same time, we should also get information in the number of inquiries as few as possible, so as to avoid the witness changing his answer because he thinks his testimony is wrong. I believe that with the results and conclusions of those studies, the judicial process can become smoother.

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