

Loftus and Palmer

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Saul McLeod, published 2010, updated 2014

Psychologist Elizabeth Loftus has been particularly concerned with how subsequent information can affect an eyewitness's account of an event.

Her main focus has been on the influence of (mis)leading information in terms of both visual imagery and wording of questions in relation to eyewitness testimony.

Loftus' findings seem to indicate that memory for an event that has been witnessed is highly flexible. If someone is exposed to new information during the interval between witnessing the event and recalling it, this new information may have marked effects on what they recall. The original memory can be modified, changed or supplemented.

The fact the eyewitness testimony can be unreliable and influenced by leading questions is illustrated by the classic psychology study by **Loftus and Palmer** (1974) *Reconstruction of Automobile Destruction* described below.

Loftus and Palmer (1974) Study

Aim: To test their hypothesis that the language used in eyewitness testimony can alter memory.

Thus, they aimed to show that leading questions could distort eyewitness testimony accounts and so have a confabulating effect, as the account would become distorted by cues provided in the question.

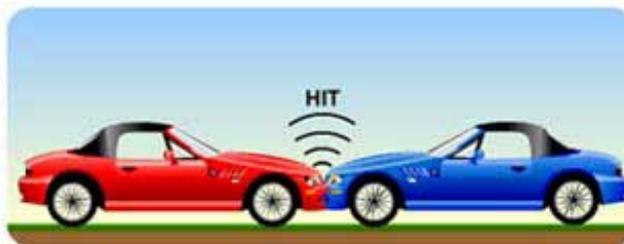
To test this Loftus and Palmer (1974) asked people to estimate the speed of motor vehicles using different forms of questions. Estimating vehicle speed is something people are generally poor at and so they may be more open to suggestion.

Experiment One

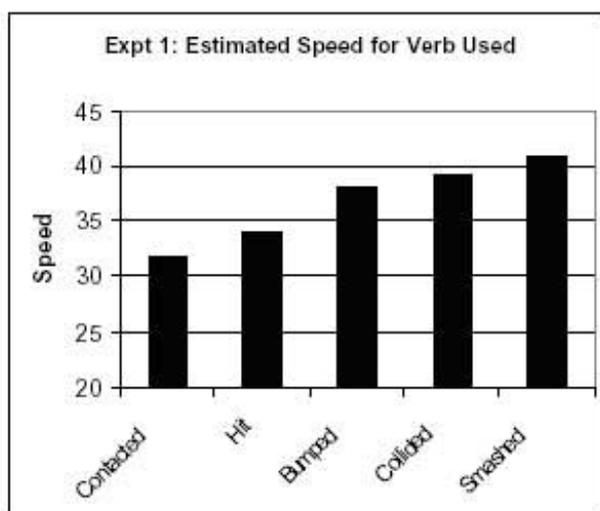
Procedure: Forty-five American students formed an opportunity sample. This was a laboratory experiment with five conditions, only one of which was experienced by each participant (an independent measures experimental design).

7 films of traffic accidents, ranging in duration from 5 to 30 seconds, were presented in a random order to each group.

After watching the film participants were asked to describe what had happened as if they were eyewitnesses. They were then asked specific questions, including the question "About how fast were the cars going when they (smashed / collided / bumped / hit / contacted) each other?"



Thus, the IV was the wording of the question and the DV was the speed reported by the participants.



Findings: The estimated speed was affected by the verb used. The verb implied information about the speed, which systematically affected the participants' memory of the accident.

Participants who were asked the "smashed" question thought the cars were going faster than those who were asked the "hit" question. The participants in the "smashed" condition reported the highest speed estimate (40.8 mph),

followed by "collided" (39.3 mph), "bumped" (38.1 mph), "hit" (34 mph), and "contacted" (31.8 mph) in descending order.

Conclusion: The results show that the verb conveyed an impression of the speed the car was travelling and this altered the participants' perceptions. In other words, eyewitness testimony might be biased by the way questions are asked after a crime is committed. Loftus and Palmer offer two possible explanations for this result:

1. **Response-bias factors:** The misleading information provided may have simply influenced the answer a person gave (a 'response-bias') but didn't actually lead to a false memory of the event. For example, the different speed estimates occur because because the critical word (e.g. 'smash' or 'hit') influences or biases a person's response.

2. **The memory representation is altered:** The critical verb changes a person's perception of the accident - some critical words would lead someone to have a perception of the accident being more serious. This perception is then stored in a person's memory of the event.

If the second explanation is true we would expect participants to remember other details that are not true. Loftus and Palmer tested this in their second experiment.

Experiment Two

Procedure: 150 students were shown a one minute film which featured a car driving through the countryside followed by four seconds of a multiple traffic accident.

Afterwards the students were questioned about the film. The independent variable was the type of question asked. It was manipulated by asking 50 students 'how fast were the car going when they hit each other?', another 50 'how fast were the car going when they smashed each other?', and the remaining 50 participants were not asked a question at all (i.e. the control group).

One week later the dependent variable was measured - without seeing the film again they answered ten questions, one of which was a critical one randomly placed in the list: "Did you see any broken glass? Yes or no?" There was no broken glass on the original film.

Findings: Participants who were asked how fast the cars were going when they smashed were more likely to report seeing broken glass.

Response	Smashed	Hit	Control
Saw broken glass	16	7	6
Didn't see broken glass	34	43	44

Conclusion: This research suggests that memory is easily distorted by questioning technique and information acquired after the event can merge with original memory causing inaccurate recall or reconstructive memory.

The results from experiment two suggest that this effect is not just due to a response-bias because leading questions actually altered the memory a participant had for the event.

The addition of false details to a memory of an event is referred to as confabulation. This has important implications for the questions used in police interviews of eyewitnesses.

Critical Evaluation

One limitation of the research is that it lacked mundane realism / ecological validity. Participants viewed video clips rather than being present at a real life accident. As the video clip does not have the same emotional impact as witnessing a real-life accident the participants would be less likely to pay attention and less motivated to be accurate in their judgements.

A study conducted by Yuille and Cutshall (1986) conflicts the findings of this study. They found that misleading information did not alter the memory of people who had witnessed a real armed robbery. This implies that misleading information may have a greater influence in the lab rather and that Loftus and Palmer's study may have lacked ecological validity.

A further problem with the study was the use of students as participants. Students are not representative of the general population in a number of ways. Importantly they may be less experienced drivers and therefore less confident in their ability to estimate speeds. This may have influenced them to be more swayed by the verb in the question.

A strength of the study is it's easy to replicate (i.e. copy). This is because the method was a laboratory experiment which followed a standardised procedure.

References

Loftus, E. F., & Palmer, J. C. (1974). Reconstruction of auto-mobile destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Verbal Behavior*, 13, 585-589.

Yuille, J. C., & Cutshall, J. L. (1986). A case study of eyewitness memory of a crime. *Journal of Applied Psychology*, 71(2), 291.

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Independent Learning Tasks

Draw a table showing the results of experiment one and draw a bar chart to show the results of experiment two.

Read the original article of the study.

Conduct your own study repeating one of the experiments by Loftus and Palmer.

Use photographs (or video clips) of car accidents and write a set of questions, one of which will be the critical question.

Test one group of participants using the 'smashed' condition and the other group with the 'hit' condition.

Calculate the mean, median and mode speed estimates for both the 'smashed' and 'hit' conditions. Illustrate your results in either a table or graph.