Can Leading Questions Result in Reconstructions of Memory?

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Abstract: *This research paper examines reconstructive memory, and its susceptibility to leading questions. An experiment was conducted where half of the participants were asked a neutral question, and the other half were asked a leading question in response to watching the same clip. The findings provided evidence for the latter question resulting in reconstructions of memory.*

Keywords: Reconstructive memory, leading questions, experiment, memory reconstruction, research findings

1. Introduction

Reconstructive memory, as defined by Oxford, is the 'active process whereby various strategies are used during the process of memory retrieval to rebuild information from memory'. The theory was first proposed by Frederic Bartlett in 1932 and suggests that memories are not exact replicas of past experiences, but instead undergo reconstructions and altercations during the retrieval process.

Memories are reconstructed to align with our schemas. Schemas are mental frameworks formed from an individual's prior experiences or knowledge. They help us organise, process, and store information about the environment (Structural Learning, 2023), and help us predict what to expect based on what has happened in the past. Consequently, when we recall an event, our schemas provide a 'blueprint' for what is supposed to happen. Therefore, we fill in gaps in our memories, or add/remove certain details to make them in line with our schemas.

A study conducted by Loftus and Palmer in 1974 provided evidence for the theory of reconstructive memory by demonstrating how post - event information, in the form of leading questions, can activate our schemas and therefore influence the accuracy of our memories - this is known as the misinformation effect.

Therefore, the hypothesis is that leading questions do result in reconstructions of memory.

2. Method

30 participants (17 male, 13 female) were chosen for the experiment using a convenience sampling technique. All participants were above 18 years of age and gave consent before participation. Through random allocation, half of the participants were placed in the experimental group, and the other half were placed in the control group, making this experiment an independent measures design.

All participants were shown the same clip of a person freediving underwater in relatively shallow waters. After watching the clip, participants in the control group were asked a neutral question: *Approximately how deep has the person dived in metres?* Participants in the experimental group were asked a leading question: *The person has started losing air, approximately how deep has he dived in metres?*

One week later, all participants were asked if they recalled seeing the person in the clip squirming or showing any other visible signs of panic while underwater (even though there had been none). After answering this question, the experiment was complete, and participants were debriefed on the true aims of the experiment. All participants also had the right to withdraw their results.

3. Results

Experimental Group

Participant	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Estimation (metres)	10	5	9	8	4	10.5	5.5	7	6	6.5	7	8	10	7	7.3

Control Group

Participant	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Estimation (metres)	3.2	4	3	7	5.5	3.5	8	4	4.1	5	5.5	3	3.7	4.3	5

In the experimental group the estimations ranged from 4 to 10.5. In the control group the estimations ranged from 3 to 7. The mean estimation for the experimental group was 7.39 metres, while the mean estimation for the control group was 4.59 metres.

Anova Test

ANOVA						
Source of Variation	SS	df	MS	F	P - value	F crit
Between Groups	58.8	1	58.8	20.58	0.000098	4.2
Within Groups	80.01	28	2.86			
Total	138.81	29				

The results from the One Way Anova Test showed that there is a significant difference between the estimations made by the two groups as the p value is less than 0.05.

Therefore, the hypothesis of leading questions resulting in reconstructions of memory can be accepted.

In response to the second question that was asked to all participants a week later, in the experimental group, 12/15 participants (80%) answered 'Yes' to seeing the person in the clip showing signs of panic underwater, while none of the participants in the control group recalled doing so.

4. Discussion

Even though all participants saw the same clip, it is evident that the line of questioning following it influenced their memory retrieval process. When participants in the experimental group were told that the person in the clip had 'started losing air', it activated their schema of associating loss of air with deeper dives. Although the person in the clip was in shallow waters, the participant's memory of the clip was reconstructed to align with their schema, leading them to give a higher estimation.

Majority of the participants in the experimental group remembered seeing the person in the clip squirming/showing other visible signs of panic, even though the person had been relaxed during the entirety of being underwater. This was because they associated 'losing air' with 'panicking', which again shows how post - event information influences the way memories are recalled.

However, it is important to address certain limitations of this experiment. Since a convenience sampling technique was used, where participants did not have to meet certain criterias (apart from age) before being selected, there may be problems with internal validity, as participants who have no prior experience or knowledge about diving were not excluded from the experiment. These participants could have given an arbitrary estimation, which was not informed by the follow up question they were asked. This could account for the anomalous estimations present in the results.

Furthermore, since this experiment was very artificial, it lacks external validity. Therefore, the results may not be applicable to other situations.

5. Conclusion

In conclusion, this experiment, as well as other experiments done in the past, provide substantial evidence for leading questions resulting in reconstructions of memory. These findings have practical implications, as they demonstrate how leading questions should not be used when interviewing eyewitnesses, as it could lead to inaccurate recollections of an event.

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