Lab Report Example 3 (68%)

This is an actual lab report from 2006, submitted by a second year student. First, the lab report is reproduced as it was submitted by the student. Next, it is reproduced with comments and changes to the text which are highlighted for you to compare with the original submission. I would have awarded a mark of 68% (see the end of this document for an explanation). NB This student is dyslexic.

Biased questions and Memory: Perceived level of violence in a staged mugging.

Abstract

An adaptation of Loftus and Palmer's (1974) experiment on automobile destruction. 51 participants were randomly assigned to three separate conditions; all participants viewed a film of a staged mugging then answered a question on the event. The question "How violent was the mugger when he attacked the individual in the video?" obtained higher levels of perceived violence than the questions which used the verbs 'confronted' and 'approached'. These findings are consistent with the original study, which concluded that changes in single words can have a marked effect on the witness's answer to a question.

Introduction

How well are events remembered? If asked to remember past events and associate a numerical quantity to it, does it then become more difficult to report accurately? Furthermore does the way in which it is asked have a marked effect upon the result? Even the most honest and objective of individuals can be mistaken when judging and recalling a witnessed event (U.S. Department of Justice, 1999). Previous research has shown that when asked to report numerical details such as speed or time, then people find it difficult to do so accurately most often overestimating (Loftus & Palmer, 1974).

In everyday life there are seldom situations when memory needs to be one hundred percent accurate, however examinations and eyewitness testimonies are the exception (Cohen, 1996). The accuracy of recalling or judging events has been an area which has been actively researched over the years, especially due to its real world connotations in such situations as eyewitness testimonies within the legal system. Protocols and guidelines are now in place when conducting interviews with witnesses to use open ended questions and avoid leading questions by all Policing bodies (U.S. Department of justice, 1999).

Loftus has claimed that the type of question posed during questioning by police or lawyers can alter the witness’ memory. Leading questions, misinformation and even subtle implications can have detrimental effects upon memory recall and interpretation (Cohen, 1996). The problem of leading questions was more closely addressed by Loftus & Palmer (1974) with their study of biased questions of car crashes. Participants were shown a film of two cars accidents; afterwards some participants were asked ‘About how fast were the cars going when they smashed into each other?’ Other participants were asked the same questions however ‘smashed into’ was replaced with either ‘contacted’, ‘hit’, ‘bumped’ or ‘collided with’. The results showed that when participants estimated the speed it varied from 31mph for ‘contacted’ to 41mph for ‘smashed into’ (Davey. 2004). Loftus & Palmer (1974) concluded from this that the form of a question in this case changes in a single word can have a marked affect on witnesses answers with the phrasing of the question controlling substantial variance.

Additional research by Loftus & Burns (1982, cited in Eysenck & Keane. 2000) suggests that memory is also affected if the event witnessed is violent. Participants were shown two versions of a crime on video, in the violent version a young boy was shot in the face near the end of the film as robbers were making a getaway. The presence of the violent act on the video impaired memory, thus it would be expected that in the case of real-life crime you would expect memory to be greatly impaired.
Loftus & Palmer’s (1974) research has come under dispute due to its ecological validity and demand characteristics of participants. Furthermore, the emotional aspects of shock, fear and sadness have been taken away, and as seen in Loftus & Burns (1982) research it is suggested that these factors can strongly influence memory and interpretation of events.

Cohen (1993 p38) suggests that all Loftus (e.g.: Loftus & Palmer. 1974, Loftus, Miller & Burns. 1978. and Loftus & Burns. 1982.) findings can be summarised by the following; People are more likely to mislead by false information if firstly; it concerns insignificant peripheral details, secondly; the false information is given after a delay, when memory of the actual event has decayed and lastly; they are not aware that they have been deliberately misinformed. This will then lead to the opportunity for incorporation of a new memory.

Whereas Zaragoza & McCloskey (1989, cited in Eysenck & Keane. 2000) suggest that these results are simply due to participants playing along with the experimenter and conforming to demand characteristics of the situation. Furthermore McCloskey & Zaragoza (1985, cited in Cohen. 1996) claim that the memory is not changed but misinformation biases the way in which people respond to the question.

Nonetheless the Schema theory (Alba & Hasher. 1983, cited in Cohen. 1996) suggests that what we remember is influenced by what we already know. Knowledge which we already have is stored in schemas and can be influenced by past personal or viewed experiences. This can then influence the misinformation of eyewitnesses’ event. Yet Loftus and Palmer’s (1974, cited in Cohen. 1993) research used this prior knowledge and the additional factor subsequent verbal information.

The present study therefore sets out to examine whether the original findings by Loftus and Palmer (1974) are repeated in today’s society with a more violent event of mugging using the participant’s response to the crime dependent upon the verb used in questioning them. The three factors suggested by Cohen (1993) which lead to being mislead by information are not all present as the participants will be questioned directly after the film has been shown and will also be questioned on the main event of the film. On the basis of previous research, it is predicted that the severity of the verb would have a direct correlation to the perceived level of violence witnessed, with ‘attacked’ being the highest followed by ‘confronted’ and ‘approached’ respectively, even though two factors set out by Cohen (1993) will not be present, prior knowledge and schemas will have an marked effect.

**Method**

**Participants**

Fifty-one students participated in three different groups of seventeen (27 female 24 male). The age range was 19-34 (M: 23 years, SD: 4.56). All participants took part willingly and were not told about the nature of the research.

**Design**

The study used a between subjects design. There was one independent variable with three levels, the verb used to describe the mugging; ‘Attacked’, ‘confronted’ and ‘Approached’. The dependent variable was the score given on a 10 point scale

**Materials**

A short piece of film of a staged mugging was used from a video website YouTube.com. Participants answer to the question was recorded by the experimenter.

**Procedure**

Participants were individually seated in a quiet room in front of a computer by the experimenter, and were given a consent form to sign. They were then given verbal instructions by the experimenter to watch the short film. The film was of a staged mugging in a shopping area, three women are walking along when a guy runs past and snatches the purse of one of the women and runs away with it. No actual violence is used towards any of the women and the event lasts for only 9 seconds. The film was then played once for each participant. Directly after the film had finished the participants were given the following information on the scale
being used, “On a scale of 1 to 10, with 1 being the least and 10 being the most” then randomly presented with one of the following questions. “How violent was the mugger when he attacked the individual in the video?”; “How violent was the mugger when he confronted the individual in the video?” or “How violent was the mugger when he approached the individual in the video?” Results were recorded by the experimenter and all participants were debriefed.

Results

A one-way independent measures ANOVA was performed on the data. Levene’s test indicated that the assumption of homogeneity of variance had been met $F(2, 48) = .662, p = .520$. The results showed that the type of verb used in questioning participants had a significant effect on the perceived level of violence, $F(2, 48) = 6.006, p < .05, r = 0.5$. This effect size indicated that the effect of verb on perceived level of violence was substantial as it is above the benchmark for large effect size (Field & Hole, 2003).

![Bar chart showing mean level of perceived violence for all verb conditions](image)

Figure 1 Mean level of perceived violence for all verb conditions

Figure 1 shows the mean answers given for each of the three levels of verb, with 1 being the least and 10 being the most violent. The error bars represent the 95% confidence interval of the mean. Inspection of Figure 1 suggests that the verb used had an effect upon the level of violence perceived.

Games-Howell post hoc tests revealed significant differences between verbs attacked and confronted ($p < .05$) and attacked and approached ($p = .008$) however not between confronted and approached ($p = .496 ns$).

Discussion

The main results from the research carried out was that the way in which a question is worded can have a direct influence on the perceived level of violence, even when only one verb is changed. Thus supporting Loftus & Palmer’s (1974) original study which found that questions asked subsequent to an event can cause a reconstruction in one’s memory. However a significant difference was not found between the verbs confronted and approached, Yet Loftus & Palmer do not report if a significant result was found between all the verbs used so it is unable to compare this study with the original further.

These results show how it is still extremely important for strict protocol and guidelines to be used with regards to eyewitness testimonies and interviews. Although very little violence was portrayed in the film of the mugging some participants reported levels of violence as high as 8 and 9 when it was suggested that the individual in the film was attacked. This demonstrates the detrimental effects on memory and interpretation by subtle implications through verbal communication.
Additionally previous research by Loftus & Burns (1982) suggested that when events are violent or supposed to be deemed as violent then memory will be affected further. It could be suggested that the participants were more susceptible to the biased questions as they perceived the situation as violent. However this can not be seen as conclusive in this study due to a lack of a control situation. Yet this could be an area of further research to be investigated.

The results however did not validate Cohen (1993) factors leading to the incorporation of new memories. Two factors were accounted for as the question was regarding the significant main event of the film and that questioning was carried out directly after the event witnesses, hence not allowing for decay of original memory. It seems therefore that schemas may have more of an impact upon memory than decay and insignificant detail recall. Conversely as suggested by Zaragoza & McClosky (1989) it is likely that all participants were just all conforming to demand characteristics of the experiment, this could be accounted for in future research by giving the participants an opportunity to either say they do not remember or that they did not see the event as violent at all.

Further research could look at the post event interviews/reports with individuals which have been mugged. Often such events are captured on CCTV and this could be used to get an objective view of the level of violence used in the attack and compared to the report given by the victim. Additionally different types of traumatic events could be looked at to see if emotional reactions have a marked affect upon the perceived level of violence by both victims and bystanders.

Overall this study set out to see if Loftus & Palmer's (1974) original study would be repeated in today's society with a different rating objective and the results found confirm this; however this has not given any further insight into the reasoning behind the phenomena.

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The same report is now reproduced with comments and corrections to explain why the mark of 68% would be awarded.

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Abstract

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Some general points on reporting results in APA format:

- ‘P’ ‘t’, ‘F’ and other test statistics must be in italics.
- Probability values should not have a zero before the decimal place: ‘.05’ is correct, ‘.05’ is not.
Marking Criteria

Why would I award 68%? Let's look at the criteria for 62, 65 and 68% from the course handbook (I have inserted comments to explain the mark in blue):

"62, 65 and 68%: This would be a basically good project. The design is basically sound and investigates a relevant research question. The write-up is fairly well organised, and clearly written (possibly with some minor lapses of clarity)."

The project was basically OK, and it did investigate a relevant research question. However, it wasn’t particularly innovative – it just replicated an old experiment. The write-up is clear, but there are lapses and a general lack of theoretical detail.

“The introduction may not be as focussed as at higher grades but the correct basic material is included.”

The introduction does have some good basic material. The source material is not really solid enough for a first (all the citations are from year 1 general texts and not journal articles, and there isn't really a justification for replicating the original study and not adding something new.

“The analysis should map onto the design reasonably well, and although results should be properly presented and analysed (appropriate statistical tests performed, clear descriptive statistics) there may be some trivial errors.”

One big strength of this report compared to, say, the example on the website that got 62%, is that the design and analysis hangs together very well. It’s a straightforward design with an appropriate analysis that is very clearly reported. This puts the report towards the top end of the grade (compared to the example of a 62% report in which there were quite a few mistakes and inconsistencies in the analysis).

“The discussion should contain a competent attempt at relating the findings to previous theoretical and empirical research. However, the exposition of theoretical implications will be less than at higher grades. The student makes some attempt to constructively criticise their own and past research (both on methodological and theoretical grounds) but these may contain some trivial observations. Sensible suggestions for future research are made.”

In general the project lacked theoretical insight and this makes it unworthy of a first (72 or above). However, there is an excellent suggestion for future work, and an awareness of the limitations of the study above and beyond the predictable (i.e. using students and small sample sizes). This again elevates this project to the top end of the grade in comparison to the example report that was awarded 62%.

“Background material used for introduction and discussion does not go substantially beyond that mentioned on the reading list. Some errors in terms of adherence to project format guidelines.”

The formatting is generally good, but the reading doesn’t go beyond the reading list.

The main thing that puts this at the top of this grade boundary is the fact that the project hangs together well (i.e. there is a good sense of the design and analysis fitting together). However, I wouldn’t award a first to this because the project lacks theoretical insight and there isn’t a clear justification for merely replicating past work rather than adding something new to address a gap in the literature. Although the limitations and suggestions for future research are good, the discussion of the implications of the study to theory and the real world are very cursory.