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Honors Program at the University of Rhode Island
Senior Honors Projects

The University of Rhode Island Year 2010

The Role of Memory in Eyewitness Accounts

Angela Lang
The University of Rhode Island

Introduction

Elizabeth Loftus (1974) has been an extremely influential researcher that has contributed immensely to the field of psychology through her research in memory and specifically false memories. Loftus (1974) conducted an experiment in which she concentrated on eyewitness memories. She wanted to determine how accurate an individual's memory is after witnessing a crime or an accident. Loftus showed participants a video which depicted a traffic accident. She then asked participants leading questions such as, “how fast were the cars going when they smashed into each other?” (Loftus 1974). When asked this question, participants were more apt to conclude that the cars were going at a fast speed. Participants were also more likely to falsely claim that they had seen shattered glass when in fact there was not any. In contrast, when the other half of participants were asked, “how fast were the cars going when they hit each other?” (Loftus 1974) led to lower estimates of speed. Loftus (1974) concluded that misinformation and leading questions greatly influence what we“remember” about an incident.

Dr. Gary Wells (2006) conducted a study in the field of eye witness accounts and wanted to determine memory can be influenced after an event. Wells (2006) conducted a study in which he showed two groups of participants a video which depicted a bomber on the roof of a building. He

then showed participants a video lineup of potential suspects, but the actual perpetrator was not in the lineup. All participants falsely identified someone in the lineup as being the perpetrator. Wells (2006) asked participants to rate their confidence level that they accurately identified the bomber. He then made two groups of participants. The first group was told that they had accurately identified the bomber and the second group was told they had falsely identified the bomber. Both groups were then asked to rate their level of confidence. Once group one learned they positively identified the bomber their confidence level went up by a tremendous percentage. This exemplifies how reinforcement can affect one's confidence level of positively identifying a suspect.

An esteemed Professor at Brooklyn Law School, Margaret Berger (1995), staged a robbery in a classroom of law students to test the reliability of eyewitness accounts. The perpetrator slowly walked through the door, hesitated, then stole the professor's purse. Berger (1995) informed her students that they would be asked questions about the perpetrator in hopes of identifying him. All 29 students were interviewed individually by their professor. When asked what the man's height was, the students answer's ranged from five foot six to six foot two. Students were also asked what the man was wearing. Their answers ranged from a white ski jacket to a plaid brown shirt. In fact the perpetrator was wearing a blue button up shirt, over a white shirt and a blue ski jacket. Perhaps the most interesting aspect of this demonstration is the fact that some students recalled the perpetrator as having a weird, crocked nose. This is due to false information that Berger (1995) purposely planted. Following the crime, Berger (1995) said “I wonder if I could describe him, I don't remember a thing about him other than having an odd shape of nose” (Higher Education). Some of the students described the perpetrator as having a weird or broken nose; this

demonstrates how susceptible memory is to false information. This demonstration also proves how malleable memory truly is.

The present study was conducted on the guidelines of Wells (2006) prior research on eyewitness memories. The current researcher showed participants a video which depicted a man building a bomb on a roof top. The camera shows the man numerous times throughout the video. Participants were then asked to fill out a questionnaire pertaining to the content in the video. They were then asked if they could positively identify the bomber from a digital line up. It is hypothesized that participants will falsely identify the bomber as well as answer some questions incorrectly about specific details of the bomber.

Method

Participants

The participants in this study consisted of 12 college students (2 males and 10 females) attending the University of Rhode Island. The participants ranged from freshmen to seniors and their ages ranged from 18-22. The participants consisted of 12 students with 9 different majors.

Materials

The materials used for the present study consisted of numerous copies of a questionnaire, (see appendix A) with a total of 4 demographic questions and 7 questions regarding the content of the video. Other materials consisted of an informed consent form, a pen, a laptop and a video projector.

Procedure

The student researcher utilized convenience sampling, facebook, and posting flyers throughout URI's campus to obtain participants for this research. When all 12 participants arrived to the classroom, the student researcher explained that the purpose of this study was to investigate the fallibility of eyewitness accounts. The student researcher encouraged participants to answer any questions they may have regarding the study. Once all questions were answered thoroughly and accurately with the help of the faculty sponsor, an informed consent document was handed out to each participant. The participants were then asked to sign an informed consent document stating that they willingly and knowingly understood what their participation in the study entailed. Participants were also informed by the researchers that they may leave at any time if they felt uncomfortable with participation in the study. The researcher then individually handed out the survey and remained present throughout the process along with the faculty sponsor to answer any questions. Once the participants completed their survey they were asked to flip the paper blank side up to ensure confidentiality. When all participants completed the questionnaire, the student researcher went around the room to collect each questionnaire individually. The students researcher then debriefed the participants by explaining that the purpose of the study was to test eye witness accounts. The student researcher explained to participants that the perpetrator was not in fact in the video lineup. Participants were shocked and convinced that they had chosen the actual bomber when in fact that had not. The student researcher then thanked participants for their participation in the study and they were told to approach the researcher if they had any additional questions.

Results

The overall results of the present study found that the participants did in fact inaccurately identify the bomber. The data collected from the participants answers were analyzed to determine if the researcher's hypothesis was accurate. Participants were asked several questions pertaining to the content of the video and the following are the results. Only fifty percent of participants answered the question correctly“what color pants was the bomber wearing?”. When asked was it day or night time 100% answered correctly. The next question asked was “what color shirt was the bomber wearing?” Over eight percent answered incorrectly. Almost seventeen percent of participants answered the question,“was the bomber right or left handed?” incorrectly. Over thirty three percent of participants answered the question, “was there a chalkboard in the classroom?” incorrectly. Lastly, participants were asked if the bomber was wearing a watch. Over eight percent answered incorrectly. Perhaps the most intriguing data stems from the following question. Participants were asked if they could positively identify the bomber from any of the individuals in the lineup. Zero percent of participants answered correctly.

Discussion

The purpose of the present study was to examine whether eyewitness accounts are accurate. The researchers hypothesized that participants would falsely identify the bomber as well as answer some questions incorrectly about specific details of the bomber. The analyzed data supports the researcher's hypothesis. Only one out of seven questions about the bomber was answered correctly by all participants. This exemplifies that eyewitness accounts and eyewitness testimony is not always one hundred percent accurate. Not only did participants positively identify the

wrong person in the lineup but their responses varied across the board. For example, four participants wrongfully identified the number one person in the lineup. One participant wrongfully identified the number two person in the lineup. Two participants incorrectly identified the number three person in the lineup. Three participants wrongfully identified the number four person in the lineup as being the bomber. Lastly, three participants incorrectly identified the number five person in the lineup as being the perpetrator. This demonstrates that not one person in the lineup looked extremely similar to the actual perpetrator causing participants to be misled. This exemplifies how our memories can misinterpret events and how difficult it is to accurately identify a suspect from a lineup.

There are several confounding variables that are related to the present study. First, the sample size only consisted of twelve participants, thus, it is not representative of the overall population. Therefore, the results of the present study cannot be concluded for the entire population. Another confounding variable is the quality of the video shown to participants. Since the video was not professionally filmed, this could potentially cause uncertainty regarding specific details of the content of the video. Future research on the role of eyewitness accounts should utilize similar methods but perhaps focus on the role of gender in memory as well.

References

Loftus, E., Palmer, J. (1979, October). Reconstruction of automobile destruction: An example of the interaction between language and memory. Journal of Verbal Learning and Verbal Behavior, (585). Retrieved April 2, 2010 from EBSCO database.

Wells, G., Penrod, S., Small, M., Malpass, R., Fulero S., Brimacombe, C.Eyewitness Identification Procedures: Recommendations for Lineups and Photospreads. Journal of Law and Human Behavior. (1998, December). Retrieved March 28, 2010 from

(2009, March 9). 60 Minutes (television broadcast).

Appendix A

1.What is your sex? Male Female

2.What is your age? 18 19 20 21 22 23 24 25+

3.What is your major? _____

4.What year are you in at the University? 1 2 3 4 5+

5.What color pants was the bomber wearing?

6.What time of day was it? Day or night? _____

7.What color shirt was the bomber wearing?

8.Was the bomber right or left handed?

9.In the office/classroom was there a chalkboard? Yes No 10.Was the bomber wearing a watch?

11.Can you identify the bomber on the roof from the lineup? (Please circle)

1 2 3 4 5 6

Participant Demographics

Notes

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	Cases Used	Statistics are based on all cases with valid data.
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sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 female	10	83.3	83.3	83.3
	2 male	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	2	16.7	16.7	16.7
	19	2	16.7	16.7	33.3
	20	2	16.7	16.7	50.0
	21	4	33.3	33.3	83.3
	22	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

major

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 business	2	16.7	16.7	16.7
	2 marine affairs	1	8.3	8.3	25.0
	3 undecided	3	25.0	25.0	50.0
	4 early childhood ed	1	8.3	8.3	58.3
	5 phys ed	1	8.3	8.3	66.7
	6 nursing	1	8.3	8.3	75.0
	7 bio	1	8.3	8.3	83.3
	8 TMD	1	8.3	8.3	91.7
	9 marketing	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

year

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	25.0	25.0	25.0
	2	1	8.3	8.3	33.3
	3	2	16.7	16.7	50.0
	4	5	41.7	41.7	91.7
	5	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Frequencies of Responses to Questions

Notes

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	Cases Used	Statistics are based on all cases with valid data.

Notes

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pantcolor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 blue jeans	6	50.0	50.0	50.0
	2 white	4	33.3	33.3	83.3
	3 black	1	8.3	8.3	91.7
	4 tan	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

daynight

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 day	12	100.0	100.0	100.0

shirtcolor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 white	11	91.7	91.7	91.7
	3 grey	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

rightleft

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 right	2	16.7	16.7	16.7
	2 left	10	83.3	83.3	100.0
	Total	12	100.0	100.0	

chalkboard

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 yes	8	66.7	66.7	66.7
	2 no	4	33.3	33.3	100.0
	Total	12	100.0	100.0	

watch

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 yes	2	16.7	16.7	16.7
	2 no	10	83.3	83.3	100.0
	Total	12	100.0	100.0	

bomber

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 correct	4	33.3	33.3	33.3
	2	1	8.3	8.3	41.7
	3	2	16.7	16.7	58.3
	4	3	25.0	25.0	83.3
	6	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Frequencies of Whether they got each question correct

Notes

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	Cases Used	Statistics are based on all cases with valid data.
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Resources	Processor Time	0:00:00.000
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pantcolorcorrect Did they get the Pant Color correct- y/n

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 incorrect	6	50.0	50.0	50.0
	1.00 correct	6	50.0	50.0	100.0
	Total	12	100.0	100.0	

daynightcorrect Did they get Day/Night correct- y/n

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 correct	12	100.0	100.0	100.0

shirtcolorcorrect Did they get the Shirt Color correct- y/n

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 incorrect	1	8.3	8.3	8.3
	1.00 correct	11	91.7	91.7	100.0
	Total	12	100.0	100.0	

rightleftcorrect Did they get right/left correct- y/n

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 incorrect	2	16.7	16.7	16.7
	1.00 correct	10	83.3	83.3	100.0
	Total	12	100.0	100.0	

chalkboardcorrect Did they get the chalkboard correct- y/n

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 incorrect	4	33.3	33.3	33.3
	1.00 correct	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

watchcorrect Did they get the watch correct- y/n

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 incorrect	2	16.7	16.7	16.7
	1.00 correct	10	83.3	83.3	100.0
	Total	12	100.0	100.0	

bombercorrect Did they guess the bomber correctly- y/n

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 incorrect	12	100.0	100.0	100.0

Descriptive Statistics on how many of the 8 questions they got correct

Notes

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	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=correctsum /STATISTICS=MEAN STDDEV MIN MAX.
Resources	Processor Time	0:00:00.016
	Elapsed Time	0:00:00.000

[DataSet2] G:\Lang.sav

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
correctsum Number of Correct Responses	12	4.00	6.00	4.7500	.75378
Valid N (listwise)	12				