

To Confabulate or Not to Confabulate

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Abstract

The purpose of this experiment was to determine if healthy men or women are more likely to confabulate. This was tested by reading a passage and asking questions about the passage, some of which did not have answers. If a participant made up an answer to an unanswerable question, it was recorded that he/she confabulated, and if the participant did not know the answer, it was recorded that he/she did not confabulate. This experiment showed that women are more likely (about 20%) to confabulate than men, but seeing as the participants were from a broad range of ages, further research is necessary to test specific age group confabulation, or male vs. female confabulation within an age group.

Introduction

Studies have shown that healthy older adults are significantly more vulnerable to memory distortions, such as confabulation, the act of filling in memory gaps, than healthy young adults. This can be best noticed when the episodic information is similar to “preexisting over-learned information” (Dall, Attali, & La Corte, 2010) such as a classic fairytale. Similarities between confabulation and delusional memory have been found, but there is not enough information to consider them related. This is due to difficulties studying live human brains without causing damage. Currently, major confabulation is known to result from brain disease, but there are many theories that describe the “mechanisms underlying confabulation” (Kopelman, 2010). “Spontaneous confabulation can be profuse, bizarre, preoccupying, or held with absolute conviction” (Kopelman, 2010) and can be caused by retrieval issues including confusion, motivational biases, and brain disease. Momentary or provoked confabulations can be seen in healthy individuals and are caused by “weak” memory.

Other forms of false memories can be caused by neurological damage, or a combination of psychological inputs. Delusional memories are sometimes viewed as intense, long term confabulation as they share some traits. The two memory issues differ because confabulation is usually caused by brain damage, while delusional individuals tend to have fully functioning mental capacities other than their delusions. (Kopelman, 2010) In group settings, people who confabulate tend to recall events that were more positive than reality. Studies have shown that 49% of recollections are more positive than reality, 33% are neutral, and 18% are more negative. When conversing one on one, people who confabulate tend to recall current events more positively than they really are, but are not biased when recalling past events. Studies have shown that of current confabulations, 68.8% were positive, 21.9% were neutral, and 9.3% were negative, and of past confabulations, 11.8% were positive, 52.9% were neutral, and 35.3% were negative. (Metcalf, Langdon, & Coltheart, 2010)

The purpose of this experiment is to determine whether healthy men or women are more likely to confabulate when given new information to remember. The hypothesis is: if healthy men and women are tested to see if they confabulate with recent information, then a majority of both genders will confabulate

because people in general do not like to admit that they were not paying enough attention to remember something.

Methodology

Participants

The participants of this study were five men and six women, ages 10-88. All were middle-class Armenians, with education levels ranging from elementary to a doctorate degree.

<u>Participant Information Chart</u>			
Initials	Gender	Age	Education
ZK	Male	50	Masters degree
AK	Male	16	High school
ES	Male	56	Some college
MO	Male	60	Masters degree
BG	Male	86	High school
ARK	Female	13	Middle school
AAK	Female	10	Elementary school
MG	Female	82	High school
MO	Female	60	Doctorate degree
RS	Female	88	High school
NK	Female	27	Bachelors degree

Procedure

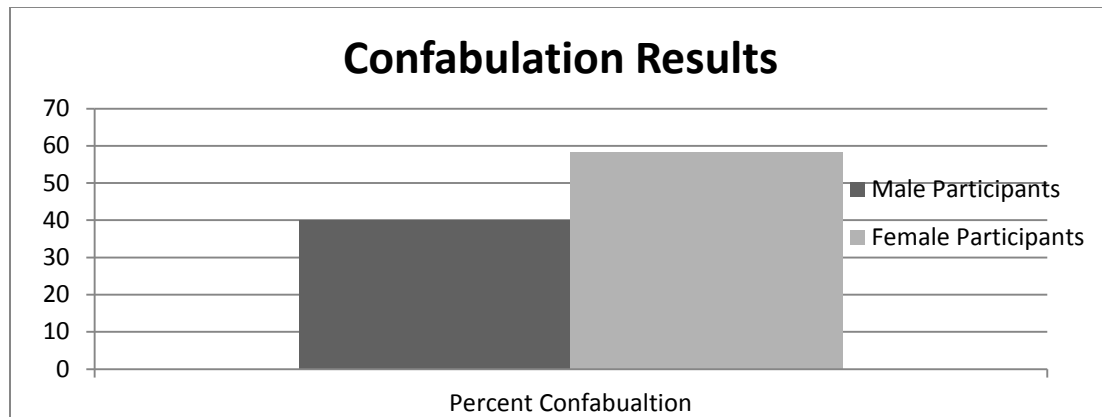
Five men and six women participants were tested. Each participant was read a script (see *script part 1*) to introduce the experiment followed by a passage (see *passage*). Then questions about the passage (see *questions*) were asked and the participant responses were recorded. After all the questions were answered an explanation was given describing what was being tested (see *script part 2*).

Scoring

“Yes” meant the participant confabulated (made up an answer) or chose the correct answer, and “no” meant the participant did not confabulate (did not know the answer) or chose the incorrect answer. (Note: The bolded questions were the ones that did not have answers found in the passage.)

Results

PARTICIPANT RESPONSE TABLE												
Participant Initials (Male)	ZK	AK	ES	MO	BG	Participant Initials (Female)	ARK	AAK	MG	MO	RS	NK
Question 1												
Yes	✓	✓	✓	✓		Yes	✓	✓	✓	✓	✓	
No					✓	No						✓
Question 2												
Yes		✓		✓		Yes	✓	✓		✓		
No	✓		✓		✓	No			✓		✓	✓
Question 3												
Yes						Yes						✓
No	✓	✓	✓	✓	✓	No	✓	✓	✓	✓	✓	
Question 4												
Yes	✓	✓		✓		Yes	✓	✓	✓	✓	✓	✓
No			✓		✓	No						
Question 5 (Confabulation Question)												
Yes			✓		✓	Yes	✓	✓		✓	✓	
No	✓	✓		✓		No			✓			✓
Question 6												
Yes		✓	✓			Yes	✓	✓		✓	✓	✓
No	✓			✓	✓	No			✓			
Question 7												
Yes			✓			Yes	✓	✓				
No	✓	✓		✓	✓	No			✓	✓	✓	✓
Question 8												
Yes		✓				Yes				✓		✓
No	✓		✓	✓	✓	No	✓	✓	✓		✓	
Question 9 (Confabulation Question)												
Yes				✓	✓	Yes	✓		✓		✓	
No	✓	✓	✓			No		✓		✓		✓
Question 10												
Yes		✓		✓		Yes	✓	✓	✓	✓		✓
No	✓		✓		✓	No					✓	
Percent Confabulation	0%	0%	50%	50%	100%	Percent Confabulation	100%	50%	50%	50%	100%	0%
Average Confabulation for Male Participants= 40%						Average Confabulation for Female Participants= 58.3%						
TABLE KEY												
Yes= correct answer No= incorrect answer						“Bolded” Yes = made up answer to confabulation question “Bolded” No = did not know answer to confabulation question						



Discussion

The data showed that the male participants confabulated 40% of the time, and the female participants confabulated 58.3% of the time. This data refuted my hypothesis, showing that healthy women confabulate more often than healthy men. The percent confabulation difference between males and females was noticeable, but not overly large; this is probably because the female participants I tested were more likely to convince themselves that they merely could not remember the answers to the confabulation questions than the male participants. The data may not be completely accurate, as there were errors and uncontrolled variables in the experiment. The men and women tested were from a range of ages, so age may have impacted a participant's results, and the passage/questions were not completely tested to verify its ability to detect confabulation.

Conclusion

The objective of this experiment was to determine if healthy men or women are more likely to confabulate, and it was determined that women are more likely (about 20%) to confabulate than men. This information is important because it suggests that women may be more self-conscious or likely to try to make up for potential gaps in their memory than men, but these results may not be accurate because the men and women tested were from a broad range of ages, and the passage/questions' ability to detect

confabulation was not thoroughly verified. Further research should consist of testing confabulation due to gender in different age groups to control the age variable.

Appendix

Script Part 1:

This is an experiment for my psychology class that will test your short-term memory. I will read a short passage to you and then ask some questions to see if you can remember details from the passage. The questions may or may not have answers so do not worry if you cannot answer all of them. Do you have any questions?

Script Part 2:

You may have been confused or unsure with some of the questions I asked about the passage. Some of them were about information that was not mentioned and were used to see if you would confabulate. Confabulation is the act of filling in memory gaps. Thank you for participating.

Passage:

The cobblestones, slick with freshly fallen snow, proved to be treacherous for well-wishers burdened with packages, but it was Christmas Eve and nothing could dampen their spirits. Carolers weaving along the path sang with rosy cheeks and bright red noses while smiling faces peered from windows. Light spilled from beneath a window casting warm, glowing beams onto the crisp, white, snow covered bushes. Inside, tucked into a corner near the window was a great big fir tree, towering above a mound of gifts. Lit with hundreds of lights and decorated with ornaments of every shape, size, and color it was breathtaking. Nearby, wood crackled and popped in a fireplace which warmed the room, making the guests cozy. Their mouths watered as delicious aromas escaped the kitchen, and they could almost taste the roast beast browning in the oven, and the delicate sugar cookies cooling on trays. Music playing softly in the background, grownups' excited conversations, and children's laughter swirled about the house. It was a perfect holiday!

Questions:

1. What material was the road made of? (Answer: cobblestone)
2. On what day does the story take place? (Answer: Christmas Eve)
3. What were the two sources of music? (Answer: carolers, background music)
4. Was the tree inside or outside the house? (Answer: inside)
5. **What color lights were on the tree?**
6. What types of cookies were going to be eaten? (Answer: sugar)
7. What was in the oven and what was happening to it? (Answer: roast beast, browning)
8. Was snow falling? (Answer: no)
9. **How were the outside bushes decorated?**
10. What type of tree was in the house? (Answer: fir tree)

Note: bolded questions have no answer and are used to detect confabulation.

References

- Dall, B. G., Attali, E., & La Corte, V. (2010, January 8). Confabulation in healthy aging is related to interference of overlearned semantically similar information on episodic memory recall. London, England, United Kingdom.
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