



The Effect of Interrupted Memory on Accuracy and Confidence in Eyewitness Recall

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Introduction

- In the criminal justice system, eyewitnesses are often relied on to give accurate recounts for crimes they witnessed. However, studies show that the accuracy of those memories are more often wrong; for example, Dougless, Neuschatz, Imrich and Wilkinson (2010) asked participants to recall details from security footage they were shown after a significant time passed. Not only was the recall accuracy low, but participants only felt confident in their answers with confirming feedback and little confidence with disconfirming feedback. This reflects the atmosphere of a police station interview.
- Cicchinic and Easton (2010) found that criminal lineups were also incredibly unreliable when participants were unable to accurately identify the suspect that they believe they had seen. Lineups are still strongly used by prosecutors to move ahead with cases against people.
- Purpose:** The purpose of this study is to examine eyewitness memory accuracy after having memory interrupted for 5 minutes with either a distractor video or task, which mimics the real-world situation where a witness would have to wait for law enforcement to respond and likely be distracted during this time. This study examines how such interruptions, whether they be active or passive, influence eyewitness memory of details that were observed. The study will also examine the relationship between memory accuracy and confidence.
- Hypothesis 1:** The interruption of memory will decrease recall accuracy.
- Hypothesis 2:** Highly perceived confidence level is not correlated to accurate memory recall.



Materials

- Research was conducted using Qualtrics, an online research platform.
- Initial security footage of a shoplifting incident shown to all participants.
- "Passive" video of a 5-minute documentary shown to participants in the "passive interruption group."
- "Active" anagram 5-minute word list activity given to participants in the "active interruption group."
- List of 21 memory question from initial security footage given to all participants.
- Confidence scale question after each memory question given to all participants.

Method

This experiment consisted of 165 participants. Each participant was randomly assigned into one of 3 groups:

No Interruption

- Control group
- No memory interruption
- Memory questions

Passive Interruption

- 5-minute passive memory interruption video.
- Memory questions

Active Interruption

- 5-minute active memory interruption anagram task.
- Memory questions

- All participants were shown an initial video clip of security footage that captured a shoplifting incident:



- Slight deception was used in the fact that participants were told that they were watching a video of convenience store interactions.
- All groups were ultimately directed to memory questions. If participants were in either of the interruption groups, they were directed to memory questions after their distractor tasks, the **No Interruption** group ($n = 56$) was directed to memory questions immediately after initial security footage video.
- Passive Interruption** video ($n = 53$): "City of Fullerton State of the City 2017 - History of Progress".
- Active Interruption** anagram activity ($n = 55$): "Please rearrange as many letters in each word as you can to create as many new words as you can in 5 minutes. Here is an example: **SILENT** can be rearranged as **LISTEN**"
- Before continuing to memory questions, participants were told of the true reason behind the video footage: "You witnessed a shoplifting incident and it is important to answer memory questions as accurately as possible".
- Memory recall survey were a series of 21 questions asked in this form:

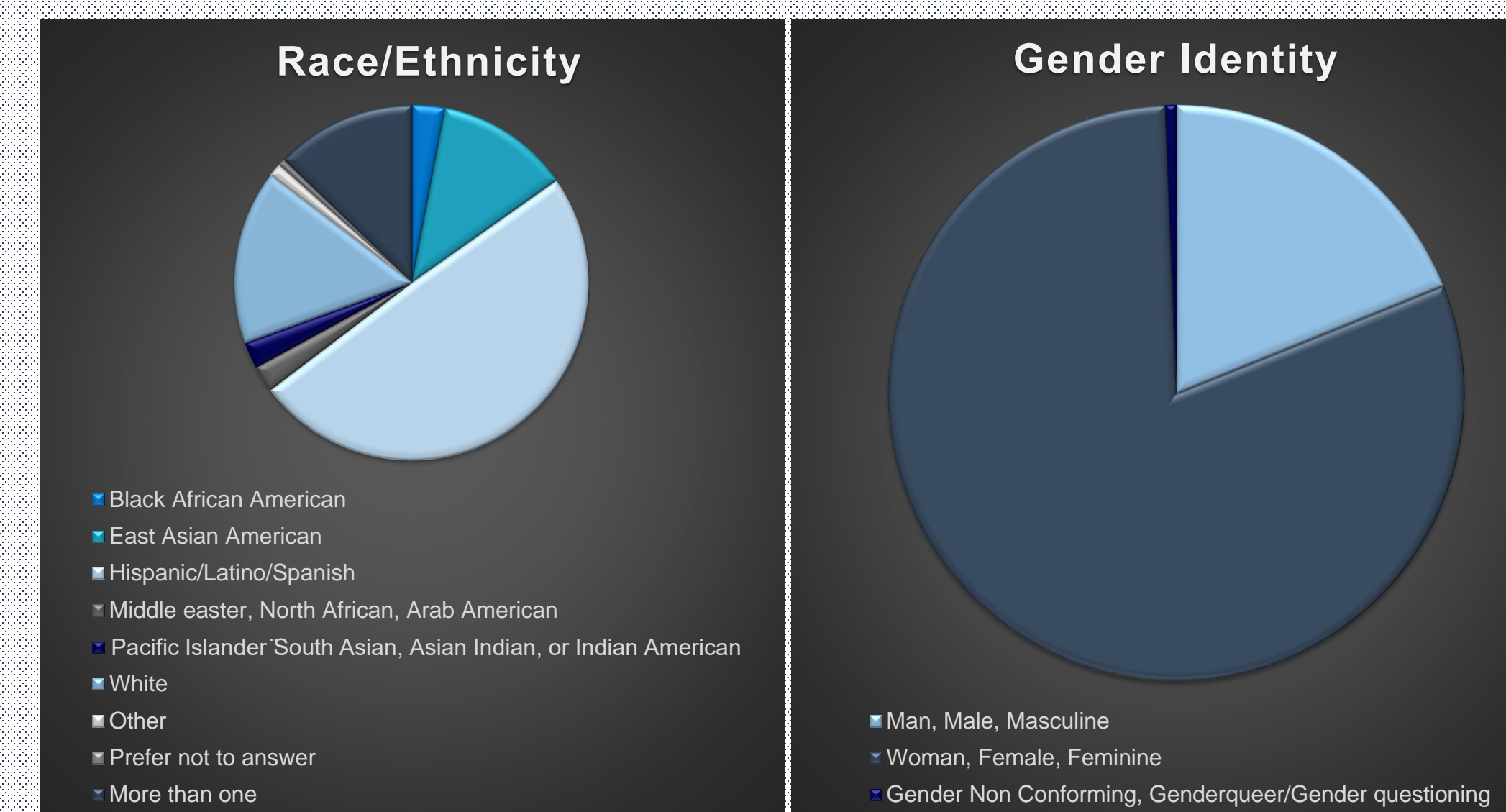
Where did the person place the stolen object?

- Sweater Pocket
- Pants Pocket
- Purse
- Sock

- After each memory question, participants were asked to rate their confidence level on a Likert scale, **1 being not confident at all** and **4 being strongly confident**.

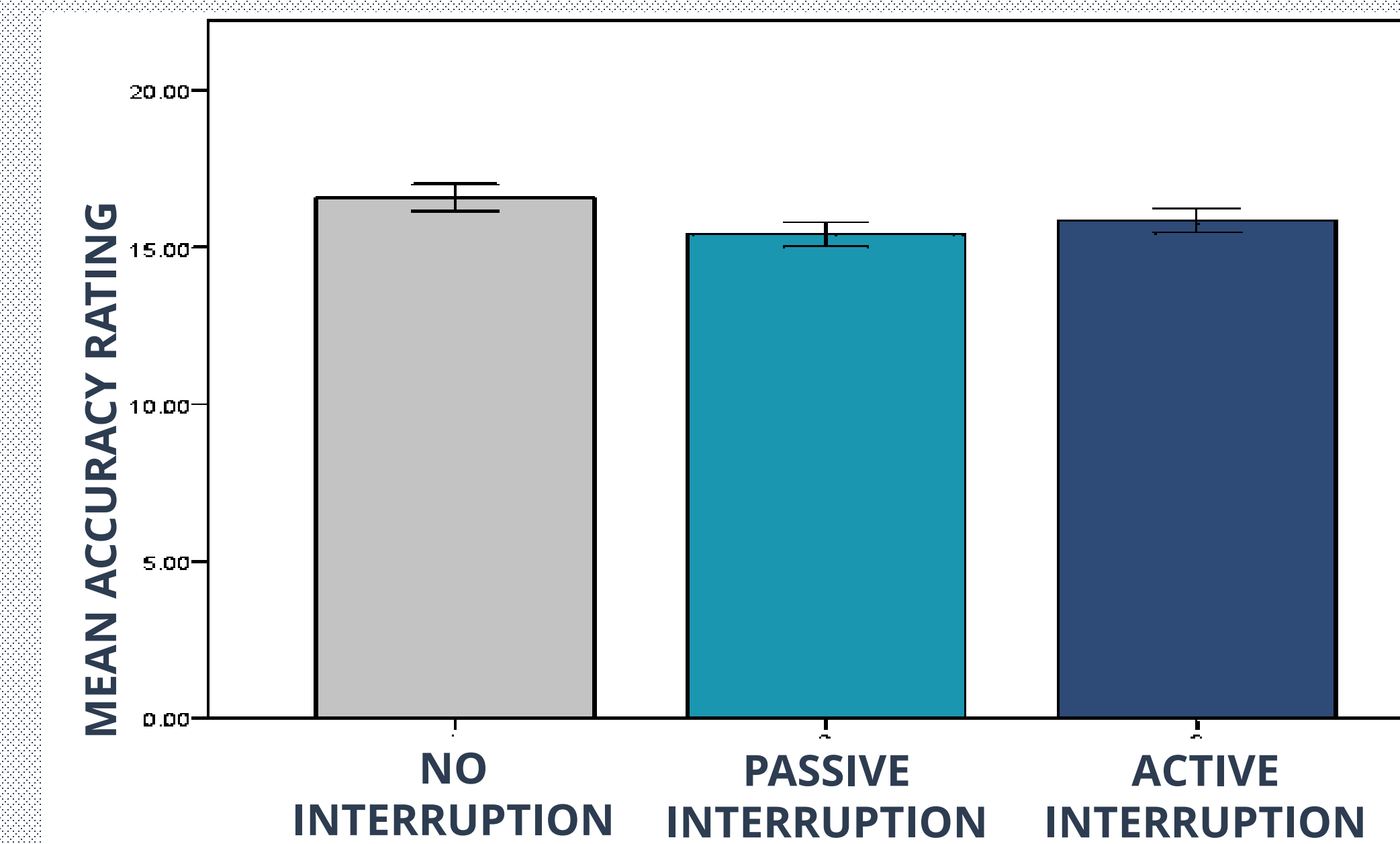
Participants

Participant age ranged from 18 to 49 ($M = 21.71$, $SD = 5.70$).

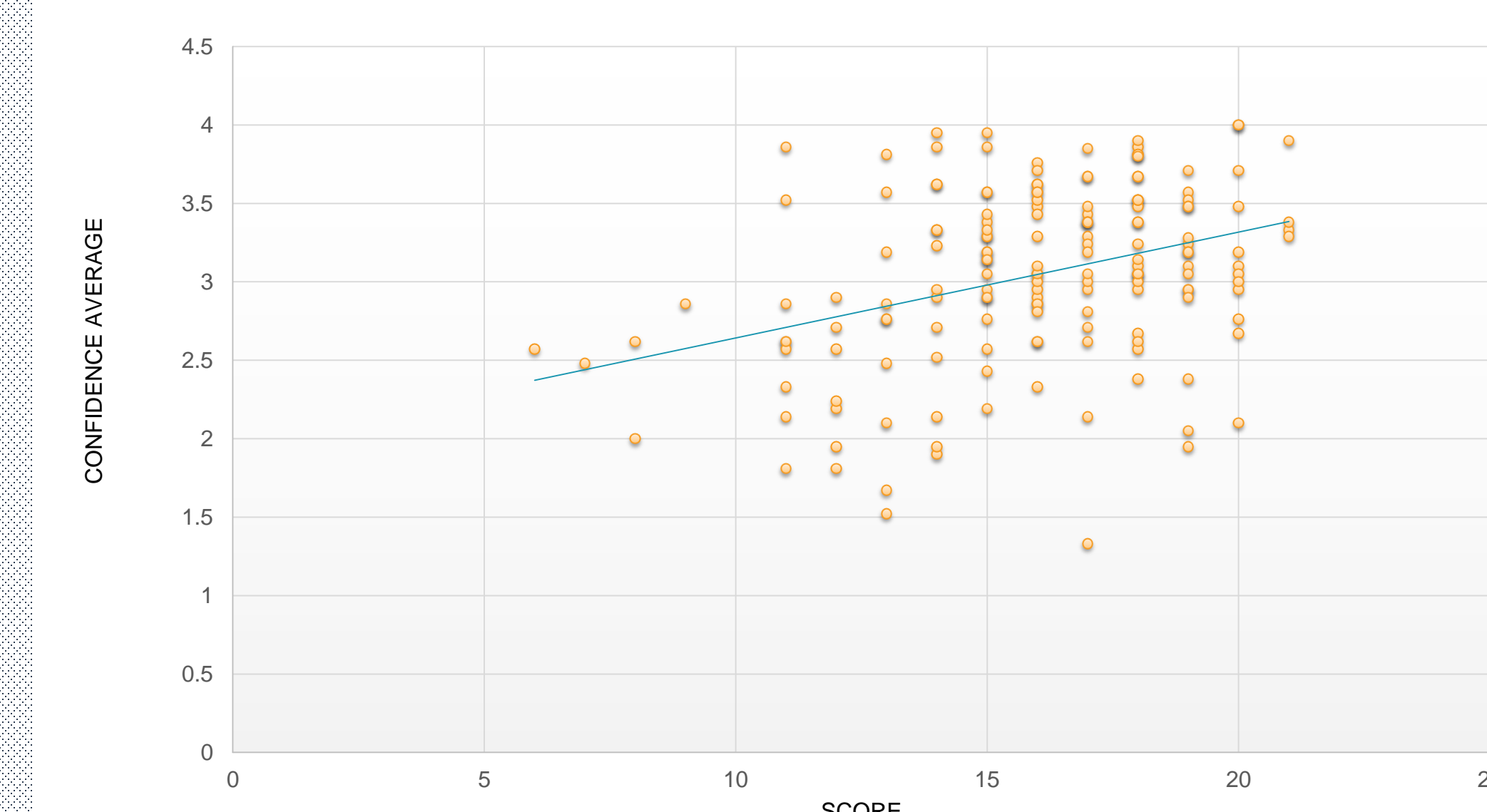


Results

- On average, the no interruption ($M = 16.59$, $SD = 3.18$), passive interruption ($M = 15.41$, $SD = 2.74$), and active interruption ($M = 15.85$, $SD = 2.86$) groups had similar accuracy scores (see bar graph below; error bars indicate ± 1 standard error units).
- A one-way ANOVA confirmed that there was no significant difference in accuracy among the three groups, $F(2, 161) = 2.24$, $p = .110$.



- A Pearson correlation test revealed that there was a positive, strong correlation between recall accuracy and confidence level, $r = .354$, $p < .001$.
- The scatterplot below reflects the tendency for accuracy to increase as confidence increases.



Discussion

- Although the hypothesis that the interruption of memory would decrease recall accuracy was not supported by these results, it is important to note that in the previous studies reviewed, the amount of time for memory interruption was much greater and their hypotheses were strongly supported.
- This implies the importance of recording memory as early as possible in an eyewitness circumstance because participants scored highly overall in accuracy for this experiment with only a 5-minute interruption.
- Furthermore, this has implications on the significant time stretch that eyewitnesses are brought through in the justice system and the devolution of details from the initial memory report as cases progress for months and years.

Possible Limitations:

- The use of Qualtrics created an uncontrolled environment for participants since they were not being watched directly during their participation.
- The second limitation was the provision of multiple-choice options in the memory questions which is unlike the real world where people would not have options to choose from but rather would have to answer qualitatively. Time constraints did not permit the analysis of individual qualitative data for a sample of this size.
- Since most of the sample were college students, it is possible that they did better in a memory recall experiment due to the nature of college learning environment.
- Lastly, there was a significant unevenness of gender in participants, women made up 80% of this sample size.

Future Direction:

- Future studies could take on a more qualitative approach where participants are asked to write their answers to memory questions rather than giving them multiple choice options which may jog their memory. Answers would be detailed in a codebook in order to accurately classify. This would provide more of a real-world result when eyewitnesses are interviewed by police.



Acknowledgement

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References

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