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PSC 041 Research Methods in Psychology WQ 2023

Unit 3 Exam Version C

Research Summary

For multiple choice questions, fill in the box to indicate your selection. Do not make stray marks in other boxes. For short answer questions, try to write on the lines and stay in the space provided.

Adapted from: Vredeveldt, A., Hitch, G. J., & Baddeley, A. D. (2011). Eyeclosure helps memory by reducing cognitive load and enhancing visualization. *Memory & Cognition, 39*(7), 1253-1263.

Thanks to the foibles of human memory, eyewitness evidence is notoriously unreliable. One attempt to help improve recall was to interview the witness in a situation that matches the original crime context as closely as possible. Now researchers have tested a simpler technique for improving eyewitness memory - getting them to close their eyes.

Ninety-six undergrads signed up for what they thought was a study into "social interactions". A research assistant took participants in groups of four for a walk around a New York city block with a clipboard taking note of people they saw. The study took place between 9am-12pm and 6-8pm. While walking, two of the "participants" started arguing and insulting each other. These people were actually confederates. That is, they are secretly part of the research team but were acting as if they were participants. The altercation ended with one of the confederates knocking the other's clipboard to the ground and storming off. The researchers ensured each of the staged arguments was caught on film so that the participants' answers could be checked for accuracy.

After they had witnessed the public spat, the two actual participants were led away to another street location that closely resembled the scene of the incident. During the five-minute walk, the research assistant engaged the two participants in conversation to ensure that the participants did not replay the event in their head. The participants were not yet aware that they would be asked to recall the incident or that the incident had been staged. When they arrived, they were asked to recall everything they could about the event. In each walking group, one participant was randomly assigned to be instructed to close their eyes during the recall (and were reminded appropriately if they opened them at any point during the task); the other was not given any instructions about their eyes.

Overall, participants who closed their eyes recalled more useful (and verified) information (M = 6.11, SD = 2.12) about the argument than those in the eye open condition (M = 4.02, SD = 1.11), $t(84) = 7.32$, $p = 0.01$. There were, of course, many useful pieces of information that could have been recalled. Fifteen people dropped out of the eye-closed condition, stating that they did not feel comfortable standing on a street with their eyes closed. No one dropped out of the eyes-open condition.

Predictor Variable

Considering the predictor / independent variable: Eye-Closure Condition

5 pts 1. How did the researchers operationally define the predictor / independent variable? Describe it using your own words. *Be sure to include the levels or values and indicate how the codes will be interpreted.*

5 pts 2. The Predictor / Independent Variable is (fill in the box)

□ **Categorical** □ **Continuous**

5 pts 3. How was the Predictor / Independent Variable measured? (fill in the box)

□ **Observation** □ **Physiological**

□ **Self-Report** □ **It was manipulated**

5 pts 4. Is this a causal or associative claim? (fill in the box)

□ **Causal** □ **Associative**

10 pts 5. Evaluate the **construct validity** of the predictor / independent variable.
ProTips: Give an overall evaluation. Think about the face validity, the procedure, and the method-match to inform your decision. Use specific vocabulary. Be sure to only discuss this one variable.

Outcome Variable

Considering the outcome / dependent variable: Memory Accuracy

Partial operational definition: Total number (0-#) of accurate pieces of info recalled

5 pts 6. The Outcome / Dependent Variable is (fill in the box)

- □ **Categorical**
- □ **Continuous**

5 pts 7. How was the Outcome / Dependent Variable measured? (fill in the box)

- □ **Observation**
- □ **Physiological**
- □ **Self-Report**
- □ **It was manipulated**

Use this information only for the next two questions:
Another researcher wants to extend this finding using different methods to address the same research question. This researcher asked participants to rate how well they felt that they remembered the scene on a scale from 1(I remember nothing) to 10 (I remember everything). The rest of the procedure was exactly the same.

5 pts 8. How was this new Outcome / Dependent Variable measured? (fill in the box)

- □ **Observation**
- □ **Physiological**
- □ **Self-Report**
- □ **It was manipulated**

10 pts 9. Does the new outcome variable (memory ratings) have stronger or weaker construct validity than the original outcome (memory accuracy)? Explain your reasoning in a few sentences.

Evaluate Internal Validity

In the next two questions, describe how a threat to internal validity has been solved or why an effect might influence one group differently than the other. You may include evidence for either strengths or weaknesses.

ProTip: Use specific vocabulary and include details from the study. Have they started with equivalent groups? Have they ruled out everything else? Think about history, testing, mortality, maturation, and selection effects.

15 pts 10. For **this research summary**, evaluate **one** aspect of **internal validity**.

15 pts 11. For **this research summary**, evaluate **one more** aspect of **internal validity**.

15 pts 12. For this research summary, 'time of day" **is not a confound** because…

5 pts 13. To establish _____ reliability, researcher should have had multiple research assistants check the accuracy of memory information in the video.

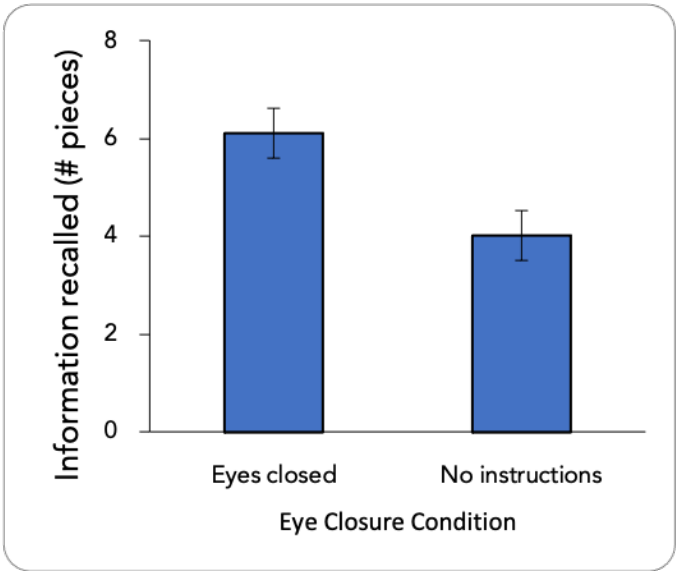
- □ **Test-retest**
- □ **Split half**
- □ **Alternate forms**
- □ **Interrater**
- □ **Counterbalancing**
- □ **Manipulation check**

5 pts 14. This research design was (fill in the box)

- □ **between groups**
- □ **within group**

5 pts 15. Explain how you know whether it was between groups or within group.
ProTips: Use specific vocabulary and include specific details from this study.
Indicate how many levels of the predictor variable each participant experienced.

Summarize the findings



5 pts 16. The error bars for the no instruction condition and eye-closure condition _____ overlap. Therefore, there likely ___ a real relationship between the variables for this condition?

- □ **do; is**
- □ **do; is not**
- □ **do not; is**
- □ **do not; is not**

5 pts 17. The *p* value is _____ . Therefore, there ___ a statistically significant relationship and eyes-closed vs no instruction effected memory accuracy.

- □ **greater than 0.05; is**
- □ **greater than 0.05; is not**
- □ **less than 0.05; is**
- □ **less than 0.05; is not**
- □ **greater than 0.5; is**
- □ **greater than 0.5; is not**
- □ **less than 0.5; is**
- □ **less than 0.5; is not**

5 pts 18. Does this interpretation follow from this study: "Closing eyes during recall increased recall." Why or why not?

Multiple Choice. Select the single best answer. Indicate your choice by filling in the box to the left of your selection. Avoid making stray marks in other boxes.
2 points each.

19. In experimental research, we _____ the independent variable and _____ the dependent variable.
    - ☐ manipulate; control
    - ☐ manipulate; measure
    - ☐ measure; manipulate
    - ☐ control; measure
    - ☐ manipulate; manipulate
    - ☐ measure; measure

20. A researcher wants to know whether wearing sunglasses improves driving performance. To design a counterbalanced within groups design, the researcher could
    - ☐ randomly assign half the drivers to a sunglasses condition and half to a no-sunglasses condition.
    - ☐ have all drivers first drive without sunglasses and then with sunglasses.
    - ☐ have half the drivers first drive without sunglasses and then with sunglasses and have the other half first drive with sunglasses and then without sunglasses.
    - ☐ None of these

Use this information for the following three questions: Research assistants in a developmental psychology lab observe pro-social behavior in a group of toddlers after seeing an adult modeling helping behavior and then again after seeing an adult modeling antisocial behavior.

21. This is a(n) _____ design.
    - ☐ matched pairs
    - ☐ block design
    - ☐ within group
    - ☐ post-test only
    - ☐ Latin square
    - ☐ concurrent measures
    - ☐ between groups
    - ☐ factorial

22. If neither the toddlers nor the research assistants in the above example knew the purpose of the study or the type of behavior modeled, this would be
    - ☐ a counterbalanced design.
    - ☐ self-report.
    - ☐ single-blind technique.
    - ☐ double-blind technique.

23. The researcher is concerned that maturation is posing a threat to internal validity in this study. Let's fix that.
    - ☐ Recruit older children to be participants in this study.
    - ☐ Randomly assign the toddlers to two order conditions. One condition watches the helping behavior first, the other condition watches the helping behavior second.
    - ☐ Ask the toddler's parents to select which behavior they would prefer
    - ☐ Gather data from all of the toddlers in the same room at the same time watching the helping behavior first and then watching the antisocial behavior.

24. Why is random assignment important in experimental research?
    - ☐ It ensures that the confounding variables are assigned to the experimental group.
    - ☐ It ensures that the confounding variables are assigned to the control group.
    - ☐ It ensures that the measured variable is assigned to the correct group.
    - ☐ It ensures that the manipulated variable is assigned to the correct group.
    - ☐ It ensures that the experimental and control groups are equivalent.
    - ☐ It eliminates internal validity

An experimenter wants to know if eating a big protein breakfast before an exam affects performance. He recruits participants from a chemistry class that meets at 10am. He randomly assigns participants into an experimental group and a control group. On the day of their first midterm, all of the participants arrive at the lab at 8am. The experimental group is served bacon, sausage, and eggs. The control group is served cereal, toast, and fruit. As he is handing out the food, he discovers that he has a lot of vegetarians in his study. The vegetarians in the experimental group refuse to eat the bacon or sausage. Help him think through his options:

25. He could ask the vegetarians to return the following week when he has had time to plan a high protein plant-based breakfast. He will arrange for their exam to be postponed for one week. What threat to internal validity would this introduce?
    - ☐ Selection
    - ☐ History
    - ☐ Maturation
    - ☐ Testing
    - ☐ Attrition

26. He could ask the vegetarians to wait for an hour while he prepares a high protein plant-based breakfast. What threat to internal validity would this introduce?
    - ☐ Selection
    - ☐ History
    - ☐ Maturation
    - ☐ Testing
    - ☐ Attrition

27. He could move the vegetarians into the control group and serve them the cereal breakfast. What threat to internal validity would this introduce?
    - ☐ Selection
    - ☐ History
    - ☐ Maturation
    - ☐ Testing
    - ☐ Attrition

28. He could remove the vegetarians from the study. What threat to internal validity would this introduce?
    - ☐ Selection
    - ☐ History
    - ☐ Maturation
    - ☐ Testing
    - ☐ Attrition