First Name:_____ Last Name:_____

Student ID #: _____

PSC 041   Research Methods in Psychology   Winter 2023
**Unit 5 Exam Version D**
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: Boothby, E., Clark, M.S., & Bargh, J.A. (2014). Shared experiences are amplified. *Psychological Science*, 25(12), 2209-2216

In the present research, we were wondering if sharing an experience with another person causes people to enjoy the experience more. Twenty-three female undergraduate students (mean age = 19 years, range = 18–22 years) were recruited at Yale University to participate in our study. When each participant arrived at the laboratory, a confederate posing as another participant was present. After the confederate and participant consented to participate, they spent a few minutes chatting to "break the ice." Next, the experimenter returned and told the pair that they would each engage in several different activities over the course of the experiment including tasting chocolates and viewing booklets of paintings.

Each participant was randomly assigned to either taste the chocolate while the confederate was also tasting a piece of the same chocolate (the shared experience), or to taste the chocolate while the confederate was doing something different (i.e., viewing a booklet of paintings; the unshared experience condition). The chocolate used was all from the same bar of 70% dark chocolate and pretested to be pleasant tasting. The only difference between conditions was whether participants tasted the chocolate at the same time as the confederate (shared the experience), or if they were tasting the chocolate alone while the confederate looked at artwork (the unshared experience).

To assess the extent to which participants enjoyed the chocolate tasting experience, they were asked to respond to the following question immediately after tasting the chocolate: "How much do you like this chocolate?" on a response scale from 0 (not at all) to 10 (a lot). The researchers compared ratings in the shared-experience condition with ratings in the unshared-experience condition. Participants reported liking the chocolate significantly more during the shared experience (M = 7.00, SD = 2.07) than during the unshared experience (M = 5.46, SD = 3.27), t(22) = 2.67, p = .007.
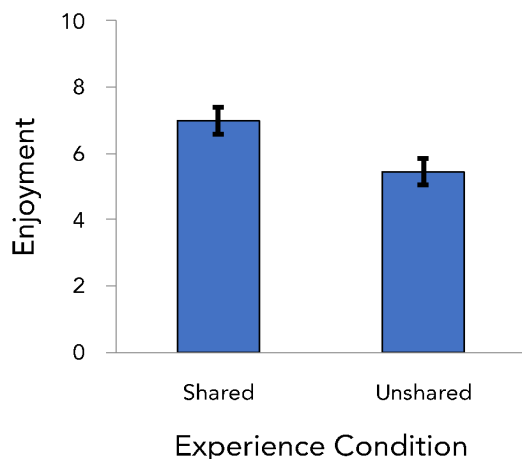
Predictor Variable

Thinking about the predictor / independent variable: <u>Experience Condition</u>

10 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.

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1.5 pts 2. The predictor / independent variable is (fill in the box)
- ☐ **Categorical**
- ☐ **Continuous**

2 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**

5 pts   5. This variable is (fill in the box)
- ☐ **between groups**
- ☐ **within group**

10 pts 6. 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.

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Outcome Variable

Thinking about the outcome / dependent variable: Liking

Partial operational definition: The outcome was a response to a statement about liking the chocolate rated on a scale of 0-10.

1.5 pts 7. The outcome / dependent variable is (fill in the box)

☐ **Categorical**   ☐ **Continuous**

2 pts 8. How was the outcome / dependent variable measured? (fill in the box)

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

Use this only for the next two questions:
Another researcher wants to extend this finding using a different method to measure this variable. Enjoyment was estimated by coding participant facial expressions while tasting the chocolate. Researchers recorded if participants smiled or grimaced.

2 pts 9. How was this new outcome / dependent variable measured? (fill in the box)

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

10 pts 10. Does the new outcome variable (*Facial Expression*) have stronger or weaker construct validity than the original variable (*Liking*) at measuring the construct (**Enjoyment**)? Explain your reasoning in a few sentences.

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Evaluate Internal Validity

10 pts   11. For the original research summary, 'personal preference for chocolate' is **unlikely to be a confound** because…

_____

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10 pts   12. For the original research summary, there is ***not a testing effect*** because…

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Summarize the findings

5 pts 13. How did the researchers summarize the findings? (fill in the box)
- □ **compare group means**
- □ **compare group frequency**
- □ **indicate strength and direction of the overall relationship**

5 pts 14. The error bars _____ overlap. Therefore, there likely ___ a real relationship between the variables? (fill in the box)
- □ **do not; is**
- □ **do not; is not**
- □ **do; is**
- □ **do; is not**

5 pts 15. The *p* value is _____ . Therefore, there ___ a statistically significant relationship between the variables. (fill in the box)
- □ **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**

10 pts 16. Does this interpretation follow from this study: "We found that sharing an experience causes people to experience less enjoyment."
Why or why not?

Evaluate External Validity

10 pts | 17. For this research, the participants were all between the ages of 18 and 22. Evaluate this aspect of **external validity**.

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10 pts | 18. Another researcher attempted to replicate this study. They recruited another set of participants from the same population and in the same way. They carefully replicated every step of the procedure. They did not find the same results; there was no difference between the shared and unshared conditions in ratings of enjoyment.

 Can the researchers defend their original findings given this failure to replicate? What logic or reasoning would they use to explain these different results?
ProTip: Clearly state your conclusion (the new findings can be explained in a way that coexists with the original findings <u>or</u> one of the findings is likely invalid) and explain your reasoning in a few sentences. Focus on the difference between internal validity (failure to replicate) and external validity (failure to generalize)

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Multiple Choice (mostly)
Select the <u>single best answer</u>. Indicate your choice by filling in the box to the left of your selection. Do not make stray marks in the other boxes.

19. According to this graph, what type of relationship do age and distraction share on driving safety?
    - ☐ Additive because the lines are parallel
    - ☐ Additive because the lines are not parallel
    - ☐ Interaction because the lines are parallel
    - ☐ Interaction because the lines are not parallel
    - ☐ null

Driving Safety by Age and Distraction
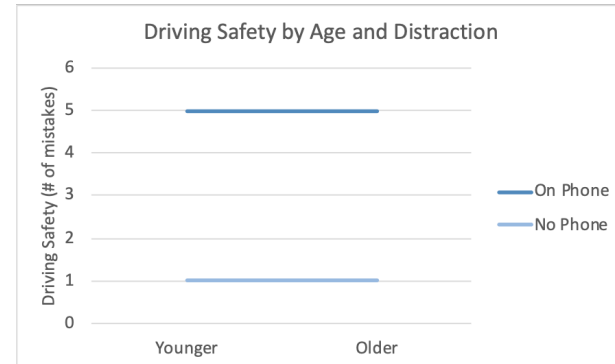
20. Which of these two statements describes the pattern above?
    - ☐ The effect of one predictor variable on the outcome variable differs depending on the level of the other predictor variable.
    - ☐ The effect of each predictor variable on the outcome variable does not depend on the level of the other

21. This is a _____ design
    - ☐ 2x2
    - ☐ 2x3
    - ☐ 3x3

    - ☐ 2x2x2
    - ☐ 2x2x3
    - ☐ 4x4

22. How many possible main effects could there be in this study?
    - ☐ 1
    - ☐ 2

    - ☐ 3
    - ☐ 4

23. The mean is the most widely used statistic for describing central tendency. However, the mean is heavily influenced by ___.
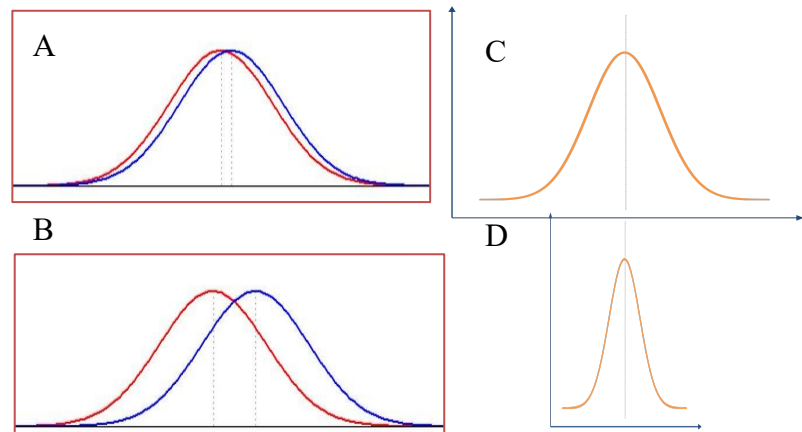   - ☐ spread
    - ☐ dispersion

    - ☐ outliers
    - ☐ the median

24. A Cohen's d value of 0.85 can be interpreted as indicating a
    - ☐ small effect
    - ☐ weak positive correlation

    - ☐ strong positive correlation
    - ☐ large effect

25. Which of these sketches shows a large effect size?
    - ☐ A
    - ☐ B
    - ☐ C
    - ☐ D

26. Jesse's class takes a personality test in which extroversion is measured on a scale from 1-7. Based on the distribution of responses from his class, his z-score on extroversion is 2.7. Which of the following sentences best describes this result?
    - ☐ Jesse is about average for his class on extroversion.
    - ☐ Jesse is extreme for his class on extroversion.
    - ☐ Jesse is slightly above average for his class on extroversion.

27. Dr. Smith concludes that his patient does not have Covid-19 but he is wrong. What type of error has he committed?
    - ☐ Type I – false positive
    - ☐ Type II – false negative
    - ☐ P-hacking
    - ☐ HARKing
    - ☐ File drawer

28. A researcher is interested in the relationship between how attractive a defendant is and how guilty they seem. She wants to test the hypothesis that the rating of guilt (measured on a 7-point scale with 1 being "certain innocence" and 7 being "certain guilt") decreases as the rating of attractiveness (measured on a 7-point scale with 1 being "very unattractive" and 7 being "very attractive") increases. The appropriate inferential statistic would be the
    - ☐ correlation coefficient r.
    - ☐ t-test.
    - ☐ ANOVA.
    - ☐ chi-square.

29. Simran wants to test the hypothesis that the mean amount of sales dollars spent in a month will vary between Oak Ridge, Oak Wood, and Oak Park shopping malls. The appropriate inferential statistic would be the
    - ☐ correlation coefficient r.
    - ☐ z-score.
    - ☐ ANOVA.
    - ☐ chi-square.

30. Zhara wonders if having a visible tattoo during a job interview is related to being hired or not. The appropriate inferential statistic would be the
    - ☐ correlation coefficient r.
    - ☐ t-test.
    - ☐ ANOVA.
    - ☐ chi-square.