

Chapter 2: Short Answer Exam Questions

1. Joe is interested in examining how the availability of recycling bins influences people's recycling behavior. Specifically, he went around his office building, noting where all the recycling bins and trash cans were. Then, before trash day, he weighed the amount of recyclable material that was in each trash can, as well as the distance that those trash cans were from recycling bins. This type of investigation best reflects what general type of research design?

[p. 1, lines 16–20]

- a. experimental design
 - b. quasi-experiment design
 - c. **nonexperimental design**
 - d. randomized control design
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2. Experimental and nonexperimental designs both have their own limitations. Specifically, experimental designs are often preferred because (all things being equal) they have especially good ____ (a) _____. Alternatively, while nonexperimental designs usually have low ____ (a) _____, they often offer higher levels of ____ (b) _____.

[p. 2, lines 9–11, 15–16; p. 8, lines 18–27]

- a. external validity; internal validity
 - b. **internal validity; external validity**
 - c. generalizability; replicability
 - d. laboratory studies; field studies
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3. In a laboratory experiment, Bill and Jason find that when children are induced to perceive their parents as having eyes in the back of their heads (i.e., that the parents are always “watching them”), the children are less likely to do drugs in the future. In a follow-up study, children who do drugs reported less agreement with the statement “my parents seem to have eyes in the back of their head.” In this example, the relationship between drug use and parental monitoring is most likely:

[p. 3, lines 22–28]

- a. noncausal covariation
 - b. spurious correlation
 - c. bidirectional causation
 - d. **unidirectional causation**
4. In a (fictional) series of quasi-experimental studies, low self-esteem was found to be correlated with preference for contact sports (e.g., hockey). However, researchers subsequently discovered that the relationship between self-esteem and contact sports was stronger for men than it was for women. In this example, gender best reflects what type of variable?

[p. 5, lines 13–25]

- a. **moderator variable**
 - b. mediator variable
 - c. spurious third variable
 - d. unidirectional causal variable
5. In a (fictional) series of quasi-experimental studies, low self-esteem was found to be correlated with preference for contact sports (e.g., hockey). However, researchers subsequently discovered that the relationship between self-esteem and contact sports was only present in people who had had their wisdom teeth removed when they were young. In this example, wisdom teeth best reflects what type of variable?

[p. 5, lines 13–25]

- a. moderator variable
 - b. **mediator variable**
 - c. extraneous third variable
 - d. unidirectional causal variable
6. A variable (C) that affects the strength of a relationship between two other variables (A and B), but is not necessary for the relationship between A and B to exist, is known as a _____. When the relationship between A and B only exists in the presence of a third variable (C), C is known as a _____.

[p. 5, lines 13–25]

- a. mediator; moderator
 - b. extraneous variable; causal variable
 - c. independent variable; dependent variable
 - d. **moderator; mediator**
7. In a study, the temperature of an interview room was slowly raised to 100° F, and participants were given the opportunity to determine the difficulty of a task for someone they had interacted with previously. In this example, temperature functions as a(n) _____, while task difficulty score functions as a(n) _____.

[p. 7, lines 1–2, 7–10, 18–20]

- a. dependent variable; independent variable
 - b. criterion variable; predictor variable
 - c. **independent variable; dependent variable**
 - d. predictor variable; independent variable
8. Whether the findings of a study can be appropriately extrapolated to people outside of the research sample is an issue of _____.

[p. 8, lines 22–24]

- a. internal validity
 - b. **external validity**
 - c. control vs. experimental treatments
 - d. maturation effects
9. Liana is writing a grant proposal for her next study, wherein she wants to investigate the conditions under which a numerical minority in a group context can alter the visual perception of majority group members. Specifically, the treatments involved groups of seven people who were shown the color blue on a screen and asked to report what color they saw. In condition A, one person (a confederate) claims to see green; in condition B, two confederates claim to see green; in condition C, three people claim to see green; and condition D functioned as a control group, with no confederates. Liana

finds that the size of a numerical minority influences the effect it has on the majority.
This research best reflects what type of research?

[p. 14, lines 6–7]

- a. applied research
- b. field research
- c. **basic research**
- d. quasi-experimental research

10. An example of ____ (a) _____ research would be: investigating whether spending time in nature makes people act in a more environmentally friendly way. An example of ____ (b) _____ research would be: investigating whether people view the environment differently when their family is primed versus when their non-familial group membership is primed.

[p. 14, lines 1–2, 6–7]

- a. field; quasi-experimental
- b. basic; applied
- c. **applied; basic**
- d. experimental; field

11. Over the course of a year-long 2 (depression: depressed, control) by 2 (therapy: video game therapy, none) experiment, the stock market crashed! Baseline measurements showed people who were initially depressed (mean = 7.5) were significantly more depressed than non-depressed participants (mean = 3.5). By the end of the study, the researchers concluded that video game therapy was not an effective treatment for depression because there were no differences between therapy (mean = 6.0) and control (mean = 6.0) conditions. Based on this example, what other potential factors are likely to have influenced these results? (circle all that apply)

[pp. 15–16]

- a. **history**
- b. **testing**
- c. instrumentation
- d. **regression toward the mean**

e. none of the above

12. All things being equal, compared to cross-sectional studies, longitudinal studies are more vulnerable to what threats to internal validity? (circle all that apply)

[pp. 15–16]

- a. **maturation**
- b. **testing**
- c. **regression toward the mean**
- d. selection
- e. none of the above

13. In a longitudinal study with random assignment to treatment groups, approximately 10 percent of the sample dropped out of the study early. Those who dropped out were similar to those who did not, and the percentage of dropped participants was roughly equal across conditions. In this example, the issue of participants leaving represents what potential problem(s)?

[p. 22, lines 8–14]

- a. mortality
- b. systematic error
- c. selection
- d. parts A & C
- e. all of the above
- f. **none of the above**

14. The idea that researchers themselves can sometimes unintentionally influence results simply by having preconceived expectations about the study, or by giving subtle cues to participants, is a variant of what threat to internal validity?

[p. 24, lines 15–16]

- a. selection
- b. **instrumentation**
- c. testing

d. history

15. Failing to reject the null hypothesis when in reality there was an effect present represents:

[p. 10, lines 21–23]

- a. Type I error
- b. **Type II error**
- c. sampling error
- d. random error

16. Random assignment increases _____, random selection increases _____.

[p. 28, lines 15–17]

- a. **internal validity; external validity**
- b. external validity; internal validity
- c. generalizability; replicability
- d. random error; systematic error

17. When thinking about external validity, it is important to consider the extent to which the _____ in a study is/are generalizable. (choose all that apply)

[p. 25, lines 22–25]

- a. **operationalizations**
- b. **experimental context**
- c. **participant sample**
- d. experimental effects

18. In a true experiment on anxiety and electric shock, 15 people drop out of the experimental group while one person drops out of the control group. This differential drop out rate reflects what potential problem(s) for the study? (circle all that apply)

[p. 16, lines 18–23; p. 9, line 23]

- a. sampling error
- b. selection
- c. **mortality**
- d. low generalizability
- e. none of the above

Short Answer Questions

1. You are conducting an experiment with group membership as your IV and attitudes toward Barack Obama as your DV, and you hypothesize that people in Group 1 will rate Obama higher than people in Group 2. In terms of the inferential statistical tests you would use to test your hypothesis, briefly explain the four possible outcomes that you could have regarding the correspondence between treatment effect and reality. In other words, use the variables above to describe the outcomes in each cell of the 2x2 matrix of treatment (effect/no effect) by reality (effect/no effect) (be sure to label error types when appropriate).

[p. 11, lines 9–10, Figure 2.2]

		Reality	
		Effect	No Effect
Treatment	Effect	1	2
	No Effect	3	4

- a. You find that Group 1 rates Obama higher than Group 2, when in fact there was that effect present. This would be a correct conclusion, and the probability in which we will make this conclusion (given the presence of treatment and “real” effects) reflects the statistical power of the study.
- b. You find that Group 1 rates Obama higher than Group 2, but in fact there was no difference between groups in reality. This represents Type 1 error.
- c. You find that there was no difference in Obama’s ratings between Groups 1 and 2 when in fact there was a difference present. This represents Type 2 error.
- d. You find that there was no difference in Obama’s ratings between Groups 1 and 2 when in fact there was no difference between groups. This would be a correct conclusion.

2. Briefly describe and compare internal and external validity. In your answer, be sure to include for each type: (a) a definition, (b) the critical issue it addresses, and (c) whether it is higher or lower in experimental versus nonexperimental (field) research.

[p. 8, lines 17–28]

Internal validity: the extent to which causal inferences can legitimately be made about the nature of the relationship between predictor and outcome variables. Concerns the certainty with which we can attribute a research outcome to a predictor of interest. Discussion of internal validity primarily reserved for experiments, as they are the only designs in which causal inferences can (appropriately) be made. All else being equal, internal validity is high in experimental research, and low in field research.

External validity: the extent to which results can be applied to other respondent groups, other settings, and to different ways of operationalizing the conceptual variables. Concerns the issue of generalizability. All else being equal, experimental research is low in external validity, and high in field research.

3. Compare random selection and random assignment. In your response, be sure to define each term and an explanation for how they differ.

[p. 28, lines 15–17]

Random assignment involves the research design after participants have been recruited, where participants in a study are equally likely to be “assigned” to the different experimental groups. Random assignment is primarily an issue of internal validity.

Random selection involves recruitment procedures prior to participating in a study, where all people in a given population are equally likely to be “selected” to participate. Random selection is primarily an issue of external validity.

Longer Answer Question

1. Hermione and Luna conducted a study on the effects of marijuana on academic performance, and the effect of school on marijuana usage. They recruited 50 people from a well-known group of potheads at school, and 50 people from a well-known group of abstainers. At the beginning of the 2014 school year, they administered three measurements of key variables: (a) marijuana use – “how often do you smoke

marijuana?"; (b) grade point average – "what were your grades for the previous semester"; and (c) relationship with their teachers – "in general, how good is your relationship with your teachers?" At the end of the school year, the researchers reassessed the three key variables: (a) marijuana use – "how often did you use marijuana in the past year?"; (b) GPA – "what are your grades for the current semester?"; and (c) relationship with teachers – obtained teachers' ratings of their relationships with the students in the study. By the end of the school year, 25 percent of potheads had dropped out of school (and thus out of the study), while none of the abstainers dropped out. Overall, the researchers found that people who use marijuana had significantly poorer GPAs and relationships with their teachers compared to non-users. However, they also found that marijuana users decreased their usage by the end of the school year, whereas a significant percentage of abstainers started using marijuana by the end of the school year. Thus, they concluded that marijuana negatively impacts people's scholastic achievements, and that school helps habitual users stop using marijuana but simultaneously causes people who never used marijuana to start using. Obviously, this study has many problems, particularly with its internal validity. Please describe how *four* of the eight threats to internal validity may have influenced the results of this study, and offer solutions for how to deal with these internal validity threats. In your answer, be sure to (a) describe each threat, (b) identify how each threat is present in the study, (c) explain how the threat would *specifically* impact the results of the study, and (d) offer one suggestion for how to solve or prevent each threat.

[pp. 15–16]