

**Florida State University
College of Criminology and Criminal Justice**

PhD Comprehensive Examination in Research Methods & Statistics

Spring 2009

Instructions:

There are four sections to the exam. Answer one question from each section. You have until 4:00pm to finish. If you have problems with the exam, you may consult with faculty proctoring the exam. Return your completed exam to the proctor on duty when you are finished.

Brian Stults (Room 317), 8:00am – 10:00am;
Dan Mears (Room 308), 10:00am – 12:00pm;
Kevin Beaver (Room 322A), 12:00pm – 2:00pm;
Bill Bales (Room 324), 2:00pm – 4:00pm

SECTION I: RESEARCH DESIGN

1. Quasi-experimental research designs are frequently touted as a credible alternative to experimental research designs. (1) Describe the central differences between the two approaches. (2) Discuss the conditions under which quasi-experimental research produces credible results and the conditions under which it does not. (3) Discuss the conditions under which experimental research produces credible results and the conditions under which it does not.

2. You are designing a study to determine the effect drug use has on violent crime in order to derive causal statements about the link between these two behaviors. First, explain how you would approach this study based on a longitudinal design. Second, assume you do not have the time or resources to collect data over time and must conduct your study using a cross-sectional approach. What steps would be take to approximate a longitudinal study as much as possible? Finally, explain what limitations your cross-sectional design has in terms of approximating any causal link between drug use and violent crime.

SECTION II: DATA GATHERING METHODS

3. You are writing a grant proposal to study the effectiveness of various punishment strategies (probation, house arrest, jail, and prison) on re-offending. You plan to conduct qualitative research to identify why there are differences in the effectiveness of these punishment options, if they in fact do differ. Describe the population(s) you would target to capture the qualitative data, the qualitative method(s) you would use and why you

believe they would be superior to other possible methods, describe the data you would collect for each population, and explain how you would analyze the data.

4. Secondary data analysis can be a valuable tool in criminological research. However, researchers conducting this type of analysis must address concerns that do not arise when they collect their own data. What are the advantages and disadvantages of secondary data analysis? Describe the issues and concerns associated with this type of analysis, and how researchers can deal with them. Use two examples of commonly used secondary data sources to illustrate these issues.

SECTION III: STATISTICS

5. What data problems or issues do each of the following multivariate statistical procedures help address (i.e., under what circumstances do they need to be used)? Pick any four of the following:

- (a) factor analysis
- (b) hierarchical linear modeling (HLM)
- (c) logistic regression
- (d) Poisson or negative binomial regression
- (e) structural equation modeling (SEM)
- (f) survival models

6. An ideal of science is parsimony—the simplest theory is, all else equal, the best—but in reality, much of social behavior is not simple. As but one example, there are many types of causal relationships that can be identified. Put differently, there are different ways in which a given causal factor (X) may be related to an outcome (Y). (1) Describe and give examples of each of the following types of causal effects: direct, indirect (mediating), interaction (moderating), threshold, and reciprocal. (2) Describe why correctly specifying the type of causal relationship between a predictor and outcome is important for testing theory and developing policies.

SECTION IV: DATA INTERPRETATION

7. Interpret the findings of the attached article by Thaxton and Agnew. This means that you should tell what the results mean with respect to the goals of the researchers and what they were trying to find out, just as if you were writing the Results and Discussion/Conclusion sections of the journal article. Do not merely repeat in words what is already shown in numbers in the tables. What conclusions would follow from the results? What problems with the methods might undermine or weaken these conclusions?

8. Interpret the findings of the attached article by Spohn and Holleran. This means that you should tell what the results mean with respect to the goals of the researchers and what they were trying to find out, just as if you were writing the Results and Discussion/Conclusion sections of the journal article. Do not merely repeat in words what is already shown in numbers in the tables. What conclusions would follow from the results? What problems with the methods might undermine or weaken these conclusions?