

## **Florida State University College of Criminology and Criminal Justice Ph.D. Comprehensive Examination in Research Methods, Fall 2010**

### Instructions:

There are four sections to the exam. Answer one question from each section; for the data interpretation section, select one of the identified articles and address each of the issues listed in the question. You have until 4:00 PM to finish. If you have problems with the exam, you may consult with faculty proctoring the exam: Eric Baumer, (Room 305), 8:00-10:00 AM; Gary Kleck (Room 309), 10:00 AM to Noon; Dan Mears (Room 308), Noon to 2:00 PM; Brian Stults (Room 317), 2:00-4:00 PM. Please notify Margarita Frankeberger (Room 216) when you are finished and ready to have your exam answers printed out. *Please note:* Once a student takes possession of the examination at the start of the exam period, this constitutes an attempt at taking the exam, regardless of whether the student completes the exam, hands in any answers, or remains for the full exam period.

### **I. Research Design**

1. Explain in exactly what way research is weakened as a result of each of the following flaws in a research design.

- a) the researcher does not have a control group
- b) the researcher cannot control which subjects are exposed to the treatment and which are not
- c) the researcher randomly assigned subjects to experimental and control groups, but has post- test (after the intervention) measurements only, no pre-test measurements
- d) the researcher cannot do random assignment of subjects to experimental (treatment) and control groups, and must do matching instead.

2. Many criminological theories assert that one or more individual, family, or community attributes exert a causal effect on crime. In practice, the explanatory variables specified in many criminological theories may be correlated with, but not causally related to crime, or they may be correlated with crime only because they are responses to rather than causes of crime. Identify a theoretically relevant variable that fits this description, and then outline the data, sample, and research design you would employ to determine whether that variable is a cause of crime, and not merely something that is only correlated with crime or that is a consequence of crime.

### **II. Data Gathering Methods**

3. Assume that you have just received a large grant from Florida to examine bullying victimization and offending in elementary schools. What sorts of

variables would you measure, which specific sources or methods would you use to measure them (be specific about details), and who would serve as the subjects of the research? Discuss the strengths and weaknesses of each form of data that you plan to collect.

4. Suppose you wanted to do a qualitative field study of the way crack dealers went about their business and the way they thought and felt about it. Explain how you could solve the following problems.

a) gain entrée in to the situation and make contact with potential subjects

b) gain the confidence of informants

c) gain information about specific topics without appearing to “interrogate” your informants

d) record what your informants told you, but without using technological aids such as audio or videotape that might jeopardize your relationship with informants

### **III. Statistics**

5. You submit an article to a journal in which you present binary logistic regression analyses (1=strongly agree or agree, 0=disagree or strongly disagree). The reviewers say that this modeling strategy inappropriately reduces a multi-category variable into only two categories. First, what alternative modeling strategies could you use? Second, if you use the original coding for the variable (strongly agree, agree, disagree, strongly disagree), would you treat it as an ordered or non-ordered outcome? Whatever your answer, defend why it should be viewed one way or the other. Third, for an ordered, multi-category outcome analysis, what would be the relevance of testing the parallel slopes assumption? Finally, if the statistical significance, direction of effect, or effect size of a given predictor, say,  $X_1$ , differs in the binary logistic regression analyses and in multi-category regression analyses, how would you explain the difference in results? That is, what would account for the differences?

6. Heteroskedasticity, autocorrelation, and multicollinearity are always concerns when conducting ordinary least squares regression. Thoroughly describe each of these concepts. What impact do they have on our parameter estimates and hypothesis tests? What methods might we use to detect each of them, and how might we correct or account for them?

### **IV. Data Interpretation**

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7. Select either the article by Reyns and Englebrecht (2010, Journal of Criminal Justice) or the article by Unnever and Cullen (2010), and address the following issues:

a) Interpret the findings of the article, discussing the meaning of the results with respect to the goals of the researchers and what they were trying to find out. Do not merely repeat in words what is already shown in numbers in the tables.

b) What conclusions would follow from the results?

c) Take the role of a critic, identifying problems with the methods that might undermine or weaken the conclusions that follow from the results.

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