

Name: _____

Political Science 101--Midterm Exam
Professor Lawrence
March 4, 2002

IF YOU RUN OUT OF SPACE FOR ANY OF YOUR ANSWERS, WRITE ON THE BACK OF PAGE, NOTING THAT YOU ARE DOING SO.

Part I: Hypotheses (30% of total, 10% each) Directions: Rewrite the following hypotheses to improve them (5 points), and explain why each rewritten hypothesis is a better social science hypothesis than the original one (5 points).

A. Social capital makes people smarter.

B. Poverty causes terrorism.

C. People vote for candidates they like.

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Part II: Measurement (30% of total, 15% each) Directions: For the following two concepts, briefly describe (1) how one might measure the concept, (2) how one could assess the measure's reliability and (3) how one could assess the measure's validity. You can use "face validity" for only one of the two concepts.

A. Alcohol consumption rate among teenagers

B. "Road rage"

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Part III: Research Design (30% of total)

President Bartlett has appointed you political participation czar in order to increase political participation in the United States. One possible effort is a national campaign of public service advertisements (PSAs) directed at encouraging people to vote, modeled on similar efforts in a few states. You have limited resources, however, so you need to take actions that will be effective. Before you start the campaign, therefore, you need to answer the following research question: Do PSAs on the importance of political participation increase voter turnout?

Describe how one could address this research question with (1) an experimental research design and (2) a non-experimental (observational) research design. In terms of internal and external validity, what are the strengths and weaknesses of each approach to this research question?

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Part IV: Experimental Effects (10% of total)

Using the notation from lecture, answer the following two questions. Show your work.

A. Given a simple post-test design as follows:

Simple Post-Test Design

R	X	115
R		100

(1) What is the treatment effect?

(2) In one sentence, what assumption must one make about the two groups in order to compute treatment affect in (1)?

B. Given a Solomon four-group design as follows:

Solomon four-group design
[Numeric entries denote test scores]

R	100	X	137
R	100		117
R		X	125
R			105

Assume that these are student test scores. Make the same assumption as in part (2) of the previous question. Further assume that you know that there are only three factors that affect the test scores—the treatment, testing effects, and maturation.

(1) What is the treatment effect?

(2) What is the effect of testing?

(3) What is the effect of maturation?