Political Science 501, Baumgartner
Short paper topics/discussion points
Week 2: Scientific Approach

Come to class with a short paper prepared on one of these topics, and ready to discuss all of them.

1. Compare the value of prediction, explanation, and simplification in theory. Is a predictive theory that does not explain well useful? How would you trade off simplification for predictive or explanatory power? Is a theory that leads to no predictions a theory? How can it be tested?

2. Deductive approaches and inductive approaches to theory building are often seen as opposites. Are they both used in a single research project, or only one or the other? Use a specific example to explain how both can be used.

3. Discuss the nature of proof, disproof, confirmation, disconfirmation, etc. How much confirmation is enough?

4. Discuss the difference between conceptual measures and operational measures. Are there theories with which you are familiar that are testable in theory but where the congruence between the conceptual theory and the operationalizations that researchers use for key variables is faulty? Be specific. Pick a theory you are familiar with and criticize the testing of it based on the operationalizations. (Hint: think of intelligence tests, measures of emotions, or other attitudes; often these are hard to measure accurately.)

5. Covariance, time-order, and non-spuriousness are the hallmarks of convincing evidence. Discuss each in turn, using an example. Under the category of non-spuriousness, what is the role of multi-collinearity? How hard is that to avoid? How does one avoid it?

6. What is a Type I error and what is a Type II error? Why do we fear one more than the other? Give examples.

7. Why is replicability a major factor in scientific progress? What impacts does that have? Are most studies designed with replicability in mind? Would you be interested in reading a replication?

8. Why would anyone design a study where all the cases have the same value on the dependent variable? Does that ever happen? What would be examples? How should this be avoided?

9. What is a model and why should people use them in theory building? Are they supposed to be realistic? Use Lave and March to help answer this question.

10. Nachmias and Nachmias (p. 18) discuss a number of steps in the research process, from stating the problem through developing the hypotheses and gathering the measures through generalization. Where do you think most of the serious problems lay? Give an example of a project that worked in certain ways but had a flaw somewhere along the way.