POL 501
INTRODUCTORY STATISTICS
Lecture 3

September 20th, 2004

Review

A good hypothesis should:
1. Have explanatory power: X leads to Y.
      Not spurious relationship.

2. States expected relationship between two variables. States direction if possible.

3. Must be testable.

4. Written as simply as possible.

5. General – explain general phenomenon not one specific occurrence.

6. Plausible and consistent with literature.

How does the null hypothesis work?
It is the complement of the Alternative hypothesis.
One and only one must be true.

We will write out both.
Hope to reject the null hypothesis and thereby accept our alternative hypothesis.

Variables:

We operationalize a concept into a variable.

Different types of measurements.
Nominal – names
Ordinal – ordered
Interval – exact measurement
Dummy – 0 or 1

So what kind of variable is:
Language, approval of Iraqi policy, population, presidential candidate, dollars spent per student?

Homework questions

Chapter 1

Exercise 1.1 1,2,4
Exercise 1.4. Also, write out the null hypothesis for each.

1.1 1. Develop a hypothesis appropriate to your major field of interest/
Some examples of hypotheses?
2. Dependent and independent variables?
How did you decide on these?
4. What is the unit of analysis?

1.4 Each of the following hypotheses has a flaw in either its format or its logic. Identify the flaw and correct the hypothesis.
1. There is a relationship between women and math anxiety such that women have math anxiety.
Problem? Women is not a variable.
H_A: There is a relationship between gender and math anxiety such that women are more likely to have math anxiety.
Ho: There is no relationship between gender and math anxiety or men are more likely to have math anxiety.

2. Are age and need for social services positively related?
Problem? This is a question, not a hypothesis.
H_A: Age and the need for social services are positively related.
H_0: Age and the need for social services are negatively related or there is no relationship.

5. Religion and support for church tax exemption are positively related.
Problem? Religion is a nominal variable – meaningless to say its positively related.
H_A: Religiosity and support for church tax exemption are positively related.
OR
H_A: Christians are more likely to support church tax exemptions than are non-Christians.

6. Liberals run for public office. Liberals is not a variable. Running for office is not a variable.
H_A: Liberals are more likely than conservatives to seek elected office. (See the stage at a Democratic debate).

7. Communication graduates earn less than public administration graduates and thus drive cheaper cars.
H_{1A}: Communication graduates have higher income levels than do public administration students.
H_{2A}: Personal income and the expense of cars are positively related among graduates.

8. "Right-brained" people are more likely to vote for conservative candidates.
H_A: People who score better on logical reasoning tests are more likely to vote for conservative candidates.

Class Exercise
Example of research designs.
Democracy rests on the idea of representation and representation relies on participation.
Most basic act of political participation is voting.
If nobody voted, would we have a democracy?
        - is it the right to vote that makes a country democratic, or the act of voting?
That is a normative question.
What percentage of people vote in this country?
In presidential elections?
In off-year congressional elections?

Is this typical of the world's democracies?
No, second lowest in the world.

So, a good research question is: *Why is voter turnout so low in the United States?*

Lets build different research designs to answer that question.

Begin with a theory that answers the question.

Why don't people vote?

Possible explanations:

Individual, psychological explanation.
        - Feeling of alienation
        - lack of efficacy - social class and education
        - dislike of candidates
        - no real choice, only two parties
        - candidates don't represent them, racially

Are there other reasons?

Economics.

If the system keeps people from voting, how do we account for the fact that despite living in the same system, some people vote and some people do not?

How can we learn about the US case? Or about voter turnout as a whole?

Break into 7 groups and study this from multiple perspectives.

For example, look at the national level.

If we compared across countries, what factors might we expect to affect the level of turnout?

Anyone know anything about turnout levels in other countries?
        - sometimes as high as 95%.
        - why is it so much higher in places?
Voting laws, number of political parties, electoral system - proportional representation, difficulty of registration, access to polls.

So we have several theories here, operating at different levels.
Individual level explanation, vs. state-level explanation.

Can find out the differences registration procedures make by doing state to state comparisons.

Note the implicit assumptions of each theory.

Looking at the individual-level, we are saying that it doesn't matter what the system is, turnout depends on individual level factors.

Looking at the country level, we are saying that its not individuals that matter, its the political system we put them in. That is, if we could just make the system of the united states look like the system of Canada, we would expect turnout in the U.S. to be like that of Canada.

What is our "unit of analysis?"
        What is it that will make up our cases?
If its individuals., we want to explain why a person votes or doesn't vote.

How can we quantify that?

0 for did vote in the last election and 1 for didn't.
That's our dependent variable.

Any other possibilities?
Maybe, the percentage of times the person says they voted in the last 10 elections in which they were eligible to vote.

Whether or not someone is a registered voter.

Homework
Chapter 2 2.1 and 2.2
Ryan and Joiner Chapter 1
Sirkin up to Chapter 3.