

Political Science 30, Homework #2

Due Date: Monday, May 5, at the **beginning** of lecture.

Note: You must complete this assignment by yourself, and may not work in groups.

- 1) In this assignment you will be choosing a dataset, identifying a variable that represents a concept that you would like to explain, identifying a variable that might explain variation in that concept, constructing and explaining a hypothesis, and exploring the relationship between the two variables.

For example, you might want to explain variation in traffic fatalities across states. You might think that the percentage of motor vehicle occupants using seatbelts (“seatbelt”) would decrease motor vehicle fatalities (“carfatal”). You would use these two variables to construct a hypothesis. Then you will explain the logic of your hypothesis (e.g. *I think people who don’t wear seatbelts are more likely to be ejected from the car and sustain fatal injuries*) and state your expectations about the data should your hypothesis be true (e.g. *if my hypothesis is correct, states where a higher percentage of people wear seatbelts should have a lower number of car fatalities per 100,000 people*).

Steps: (Do each in turn on your homework)

- a. Find **two variables** from **one of the datasets** for this class (States.sav, World.sav, or NES2000.sav). Please do not use car fatalities or seatbelt usage.
- b. Copy the description for each variable from the codebook (pg. 205-213 in the back of *An SPSS companion to Political Analysis*). If you chose NES2000.sav please contact your TA for the variable descriptions.
- c. List the level of each variable (nominal, ordinal, interval) and state why.
- d. Construct a hypothesis about how the two variables are related.
- e. State the causal mechanism for your hypothesis. (In other words explain **why** your independent variable will affect your dependent variable in the way you stated in your hypothesis).
- f. State as precisely as possible what you would expect the data to look like if your hypothesis is true.

- 2) Exploring the relationship between your variables.
 - a. Use SPSS to produce a graph of the bivariate relationship between your independent variable and your dependent variable. If the independent variable is an interval / ratio variable, you can produce a scatter plot. If the independent variable is a nominal or ordinal variable, you can produce a bar chart that reports mean or median values of the dependent variables for cases that take on different levels of the independent variable. Print out the graph.
 - b. Describe the relationship that you see.
 - i. Do the variables appear to be correlated? Is the correlation negative or positive?
 - ii. Do you see any support for your hypothesis? Why or why not?

- 3) Think of another possible independent variable that helps explain your dependent variable *that is included in the dataset that you are using*.
 - a. Write down the variable and its description from the appendix.
 - b. Specify the level of this variable and explain why.
 - c. Make an argument for how this variable might be related to your hypothesis.