

# Political Science 104

## Lecture 17: Interaction Terms

### Interaction Terms

- As we have seen, we can use dummy variables to get different intercepts on the regression line for different groups.
- We can also get different slopes on the regression line for different groups by using *interaction terms*.
- An interaction term is the product of two variables in the regression. We enter this product into the regression as another variable.

### Interaction Terms in Regression

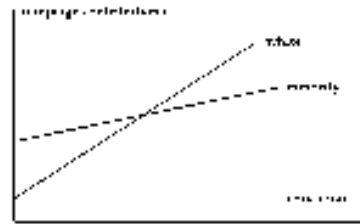
- Consider the regression:

$$y = a + b*x + c*m + d*(m*x) + e$$

where  $y$  = campaign contributions in \$,  $x$  = years of education,  $m$  is a dummy variable for minority, and  $(m*x)$  is an interaction term.

- The regression line for white:  $a + b*x$
- The regression line for minority:  $(a + c) + (b + d)*x$

### Example: Regression with Interaction Term



- Regression line for white =  $a + b*x$
- Regression line for minority =  $(a + c) + (b + d)*x$

### Examples of Interaction Terms in SPSS

### Understanding Quantitative Social Science Research

- Even if you aren't familiar with the statistical methods used in a study, you now know enough to:
  - Understand the hypothesis
  - Understand the research design
  - Understand any measurement issues
  - Look at the statistical output and see if it supports the hypothesis
  - Judge whether you agree with the study's conclusions