

Discussion questions for group comparisons and interaction effects

If time permits we will go over these in class or lab; otherwise just think about them on your own.

1. The notes present several models for interaction effects.
 - a. Suppose your dependent variable is LIBERALISM (measured on a scale that runs from 400 to 1200). Your independent variables are FEMALE (1 = Female, 0 = Male), PARENT'S LIBERALISM (same 400 to 1200 point scale), and INCOME (measured in thousands of dollars). Using interaction effects, what would be a reasonable sequence of models where you gradually went from totally constrained (no differences between men and women) to totally unconstrained (All effects differ for men and women)? In brief, what would each of these models be saying about the extent and nature of differences between men and women?
 - b. The notes make a distinction between compositional differences versus differences in variable effects. In the present example, what would be evidence of each? Explain why and how, even if there are no interaction effects, differences between men and women could be important. Specifically, suppose that women are more liberal than men, and yet there are no interaction effects, nor is the dummy variable for FEMALE significant. How could compositional differences account for this?

2. The following pertain to interpreting interaction effects and the use of centering.
 - a. What does centering mean? What types of variables should be centered and what should not be?
 - b. Suppose your independent variables are FEMALE and PARENT'S LIBERALISM. The coefficient for female is 300 and the coefficient for PARENT'S LIBERALISM is .5. How do you interpret the coefficient for FEMALE when variables are not centered? That is, what does the coefficient for FEMALE tell you about differences between men and women? Draw a rough graph of the relationships.
 - c. Suppose your IV's are FEMALE, PARENT'S LIBERALISM, and FEMALE*PARENT'S LIBERALISM. Coefficient for FEMALE is -100, PARENT'S LIBERALISM is .4, FEMALE* PARENT'S LIBERALISM is .2. What does the coefficient for FEMALE mean now? How is this different from what it meant before? Draw a graph of the relationships.
 - d. Once you added the interaction term, the coefficient for FEMALE went from being positive to being negative. Should that concern you? (Again, think about what the coefficient for FEMALE means in each model.)
 - e. What would you need to do to center PARENT'S LIBERALISM? Specifically what SPSS or Stata commands would you use?
 - f. Go over your answers to parts (b), (c) and (d) again, this time using centered PARENT'S LIBERALISM. How and why are your answers different from before? Why does centering sometimes make it easier to understand results?