Measurement, Scaling, & Dimensional Analysis
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# Assignment 5: Multidimensional Scaling

One of the oldest findings of American political behavior research is that the mass public does not have a particularly sophisticated understanding of politics. The scaling methodologies we have discussed in class are suited particularly well to the task of investigating the nature of belief systems, or ideologies (e.g., dimensionality, substantive structure). In this assignment, you must use emotional reactions to salient political figures and the major parties to search for structure in mass conceptualizations of politics.

The Stata datasets "Feeling Thermometers, 2008 ANES.dta," "Feeling Thermometers, 2012 ANES.dta," and "Feeling Thermometers, 2016 ANES.dta" contain scores on a set of feeling thermometers from the 2004 and 2008 American National Election Studies surveys, respectively. Feeling thermometers ask the following of survey respondents:

> "There are many groups in America that try to get the government or the American people to see things more their way. We would like to get your feelings towards some of these groups. I have here a card on which there is something that looks like a thermometer. We call it a "feeling thermometer" because it measures your feelings towards groups. Here's how it works. If you don't know too much about a group or don't feel particularly warm or cold toward them, then you should place them in the middle, at the 50 degree mark. If you have a warm feeling toward a group or feel favorably toward it, you would give it a score somewhere between 50 degrees and 100 degrees, depending on how warm your feeling is toward the group. On the other hand, if you don't feel very favorably toward some of these groups–if there are some you don't care for too much–then you would place them somewhere between 0 degrees and 50 degrees."

Estimate nonmetric multidimensional scaling models for all three datasets and plot the results. Do the models fit? How many dimensions are necessary to accurately represent substantively interesting variation in the dissimilarities data? Do the solutions make substantive sense? How do you interpret the solutions? What substantive conclusions can you make about the "pictures in the heads" of ordinary Americans?

Next, estimate metric multidimensional scaling models for the datasets. Are results different? Which assumption about level of measurement appears to be "best?"