**Factor Analysis**

Please download the dataset titled *Spring2016\_Factor\_Analysis\_Exercise.sav* from the class web page. This dataset contains ratings that Psych 350 students made of 28 personality descriptors in the first week of lab. Please note that the variable labels in SPSS contain the descriptors that were rated. (This dataset combines ratings made in our class with those made in the Fall of 2015, 2013, and 2012 to help boost our sample size.)

The objective of this exercise is to factor analyze the self-ratings to determine whether there are a smaller number of factors that can be used to explain the correlations among the descriptors. To keep the project more manageable, I’d like for you to analyze the first 10 items. These items are, theoretically, designed to assess the five major personality traits emphasized by the Five Factor Model.

1. First, perform an initial factor analysis so that you can obtain the results from a scree test. Based on the eigenvalues > 1 rule, how many latent factors do you think are needed to parsimoniously represent the correlations among the 10 descriptors?

2. Using an elbow test, how many factors do you think are necessary? Is there a clear break in the scree?

3. Using the smaller of the two answers above, please explicitly instruct SPSS to extract that number of factors. Using **principal axis factoring** and **varimax rotation**, please examine the “rotated factor matrix.” Determine which descriptors “load” highest on each factor. Make a note of those and interpret the meaning of each of the factors in light of these results.

4. Conduct the same analysis again using **direct oblimin** rotation. Do the factors tend to correlate with one another? Do the factors have the same meaning in your opinion? (Use the pattern matrix for the purposes of answering this question.)

5. Some of the descriptors from the questionnaire are not typical personality descriptors (e.g., “athletic,” “morning person,” and “ticklish”). Each of these items can be used to describe people, of course, but they are not typically construed as being psychological traits. Add a few of these descriptors (maybe 2 or 3 of your choosing) to your factor analysis. Where do these items “load” in your factor analysis? Do they seem to belong to specific factors, loading, say, .30 or higher on one or more of them? Do they tend to split off and form their own factors in ways that are detached from the other kinds of items?