**SPSS: k Within-Groups ANOVA & Trend Analyses**

**Application:** To examine the “shape” of the IV-DV relationship (only used when IV conditions are equally spaced)

**Research Hypothesis:** The researcher hypothesized there would be a negative linear relationship between time in therapy and depression scores

**H0: for this analysis:** There is no mean differences among mean performance in the different anxiety conditions.

**Analyze ➔ General Linear Model ➔ Univariate**
- highlight the “Dependent” variable (be sure it is **quantitative**) and click the arrow
- highlight the “Factor” (IV, grouping) variable (be sure it is **qualitative**) and click the arrow
- “Options” — check that you want “Descriptive Statistics”
- “Contrasts” — Highlight “Polynomial” & click “Change”
- “Plots” — Move IV into “Horizontal Axis” then click “Add”

**SPSS Syntax**

```
UNIANOVA perf BY anx_lvl /CONTRAST(anx_lvl)=Polynomial /METHOD=SSTYPE(3) /PLOT=PROFILE(anx_lvl) /PRINT=DESCRIPTIVE.
```

**Please note:** The Polynomial procedure assumes that the IV conditions are equally spaced. If you have unequal spacing, please refer to the handout for kBG Trend Analyses using SAS. It shows a procedure for computing the proper analytic coefficients for unequally space IV conditions,
The mean depression scores for each amount of time in therapy are shown in Table/Figure 1. There was a difference among the group means, $F(5, 205) = 63.137, p < .001, MSe = 57.406$. As hypothesized there was a negative linear trend to the data, $F(1,41) = 252.935, p < .001, MSe = 61.171$. Also, there was no quadratic trend, $F(1,41) = 3.161, p = .083, MSe = 60.464$. However, contrary to the hypothesis there was also a significant Cubic trend, $F(1,41) = 12.338, p = .001, MSe = 62.876$. In summary, the data show a combined trend including a negative linear and cubic trend such that depression scores changed little from the first to the second session, then decreased consistently through the fifth session and then leveled off.