## Homework 9: Profile Analysis

In this assignment you will work on a mixed between-within design that lends itself to a "profile analysis." The data are from an actual study on 12-month-old infants who were randomly assigned to watch the face of an adult who either did or did not speak (SPEAK factor), and there was an object in front of the person. The researchers recorded how long the infant was looking, while watching the adult, at each of three regions in their visual field – the object, the adult's mouth, or the adult's eyes (REGION factor).

The design had SPEAK as the between-subjects factor and REGION as the within-subject factor.

- 1. Run FREQUENCIES to get histograms for each variable and summarize what you found.
- 2. Create a line graph similar to the ones I showed in class, plotting one factor as categories on the x-axis and the other in the form of distinct lines. (Include the graph in your homework file.) Discuss in simple terms what patterns you see.
- 3. Complete the missing pieces in the syntax below for a 3 (REGION) x 2 (SPEAK) MANOVA. Provide an argument for why you chose a particular kind of contrast for REGION.

```
MANOVA [measures] by SPEAK(0,1)
/wsfactor = [?]
/contrast(REGION) = [?]
/print = transform omeans
/disc = stan corr.
```

- 4. (a) Briefly define the three questions that are typically posed in profile analysis (group equality, flatness, parallelism) for this particular dataset.
  - (b) What answers do the present results provide for each of these questions?
- 5. Now to the researchers' predictions.
  - (a) They specifically predicted that, in this setting, the infants would generally look more at the face than at the object. Define a contrast that tests this hypothesis, draw an appropriate graph for this specific hypothesis, and report the result.
  - (b) The researchers also predicted that, when infants looked at the face, the relative attention to eyes and mouth would be a function of whether the person speaks or not. Define a contrast that tests this hypothesis, draw an appropriate graph, and report the result.
- 7. Write your one-page summary of analyses and results: briefly report the overall profile results, and then specifically report the test of the specific hypotheses.

Page limit: 8 total (including summary).