Section 7.1 Computer Exercise

1. We will be working with the Shuttle data from problem 5.2 (the data is both embedded in the code and available as a separate file). In addition to modeling the logit link, I would like to study the complementary log-log link and the probit link. Both of these links are available as LINK options under the model statement (LINK=CLL and LINK=PROBIT).

2. Run the models and assess fit based on the model likelihood (larger is better). (Though these models are not hierarchical, they have the same number of parameters, so the model likelihood is an equivalent measure to AIC in this case).

3. The standardized Pearson residuals and fits are stored in an output data set (I saved each of these in separate output files with different names for the variables depending on the link; MERGE OUTLOGIT OUTPROBIT OUTCLL created a single data set). We plot the standardized Pearson residuals against the fitted values and the fitted values against the independent variable. Do either the probit link or complementary log-log link seem to be accounting for data features that the logit link did not?

4. Repeat this exercise in R–I have included some useful R code on the home page. Refer to Dr. Laura Thompson's manual (referenced on Alan Agresti's website) to explore even more data display options. Note that R displays AIC by default–smaller is better.