Homework 1
Due: Thursday, September 6, 2001

1. Read
   - "Elementary Principles of Composition" from Strunk and White and
   - the article "Writing Technical Papers or Reports", handed out in class today.
   - the article "The Science of Scientific Writing" handed out in class today.

   (for discussion in class next Thursday).

   On Friday Sept 31 I will have copies of a handout on English as a second language available outside my door. Please pick one up an read it at your liesure over the next two weeks.

2. Work through the first three Splus tutorials –
   - Introduction: 'An Introduction to Splus"
   - Dataframes: "Reading Data in Splus"
   - Graphics: "Producing Graphics in Splus"

   available in many places, for example, at `http://www.stat.cmu.edu/~brian/707/S-Tutorial`. You do not have to hand anything in for this question.

   From the handout "Examining Data", handed out in class today, do the following exercises (using Splus as appropriate). The data files are all in `http://www.stat.cmu.edu/~brian/707/data`.

3. Ex. 3.1(b), p. 49 [data in Angell.dat, variable names in Angell.cbk. Once you have copied the data to your local subdirectory, use "`angell<-read.table(angell.dat)`" to read the data, and then something like "`names(angell)<-c("Moral","Ethnic","Geog","Region")`" to give the variables names] *Write a short paragraph on each variable.*

4. Ex. 3.3(a), p. 53. Use the "boxplot(split(*quantitative variable*, *categorical variable*), style.bxp="old")" construction. *Write a short paragraph on your findings. Add any additional plots or summaries that might help.*

5. Ex. 3.4(a), p. 56. Use help(pairs) to learn about making a scatterplot matrix, and help(brush) for a 3-D scatterplot (I can't seem to get "spin" to work at the moment...). In the "brush" plot play with brushing and unbrushing several values, and with rotating the 3-D plot so that moral integration is on the vertical axis. *Write a short paragraph on your findings.*

6. **Writing exercise** Write a short (no more than two paragraphs) explanation of transformations of data, for a scientifically–literate reader. You should assume that your reader is **not** a statistician or mathematician; avoiding technical jargon is therefore important. Cover what *you* consider to be the important points, while conveying enough information to the reader that she can gain an understanding of data transforming and its usefulness in data analysis.