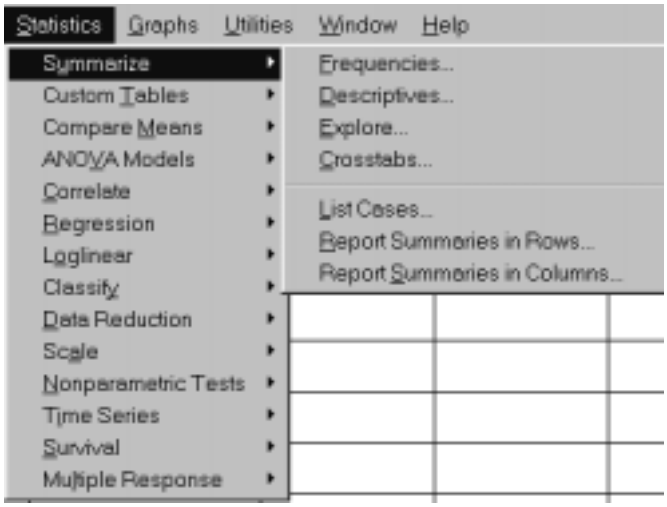
CLOUD SEEDING EXPERIMENT

10. Displaying and Describing Seeded and Unseeded Rainfalls

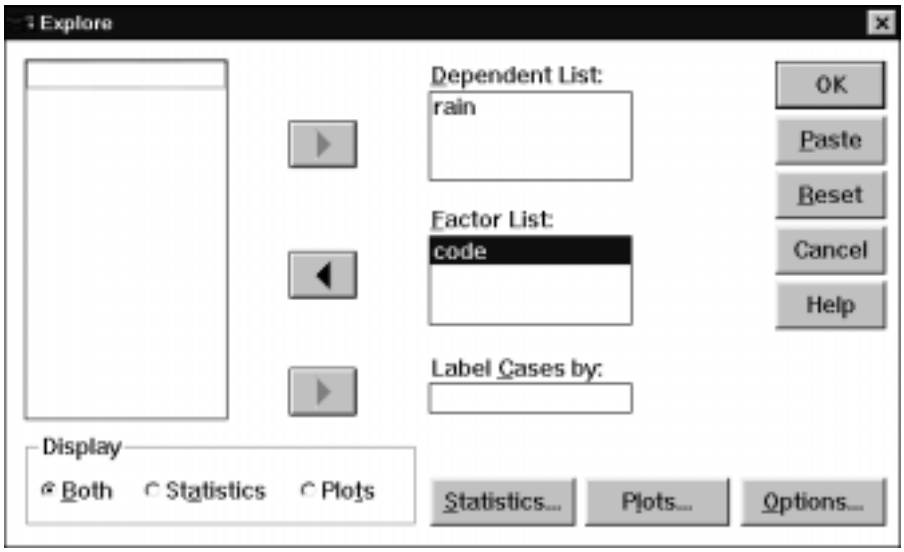
In this part, we will demonstrate how to use SPSS to produce the computer outputs we referred to in Section 4. There are hyperlinks between the section and Section 4 containing the statistical outputs.

Open the file *case0301* with the data in the experiment. It consists of two columns, named *rain* and *code*. The column *rain* contains the rainfall amounts, the entry in the column *code* is 1 when the cloud is unseeded, 2 when the cloud is seeded.

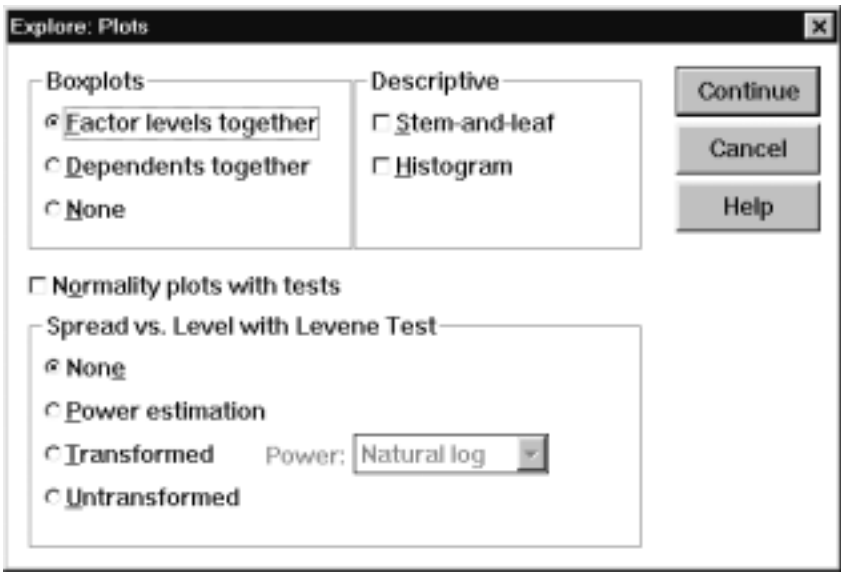
In order to obtain side-by-side boxplots of the rainfall amounts for seeded and unseeded clouds, and then the summary statistics for each group, click on *Statistics* in the main menu, select *Summarize*, and then *Explore* from the pull-down menu.



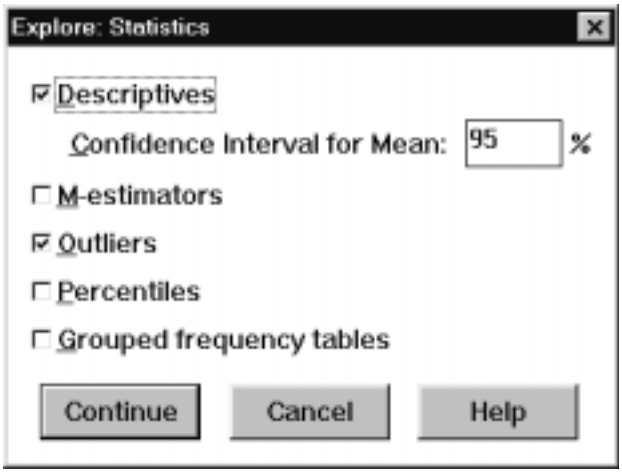
Fill out the *Explore* dialog box as follows:



In order to make sure that your output will include side-by-side boxplots, click on Plots and check the radio button *Factor levels together*.



Then click on Statistics tab in the *Explore* dialog box.



SPSS produces the following output:

RAIN
By CODE 1.00

Valid cases: 26.0 Missing cases: .0 Percent missing: .0

Mean	164.5885	Std Err	54.6039	Min	1.0000	Skewness	2.7892
Median	44.2000	Variance	77521.26	Max	1202.6	S E Skew	.4556
5% Trim	120.7350	Std Dev	278.4264	Range	1201.6	Kurtosis	8.1731
95% CI	(52.13, 277.05)	IQR	159.6000			S E Kurt	.8865

RAIN
By CODE 2.00

Valid cases: 26.0 Missing cases: .0 Percent missing: .0

Mean	441.9846	Std Err	127.6299	Min	4.1000	Skewness	2.4352
Median	221.6000	Variance	423524.0	Max	2745.600	S E Skew	.4556
5% Trim	351.7201	Std Dev	650.7872	Range	2741.500	Kurtosis	6.0084
95% CI	(179.13, 704.84)	IQR	365.3250			S E Kurt	.8865

The side-by-side boxplots are displayed in Section 4.1. In order to obtain the side-by-side boxplots of rainfall amounts on the log scale, repeat the same procedure (leave *Statistics* tab in the Explore dialog box unchecked) but with the variable lograin defined as the natural logarithm of rain. The variable can be defined by clicking on *Transform* in the menu, and then on *Compute*… . Fill the dialog box obtained as follows: