A Visual Approach to SPSS for Windows
A Guide to SPSS 17.0
Leonard D. Stern

Second Edition

PEARSON

Pearson New International Edition

A Visual Approach to SPSS for Windows
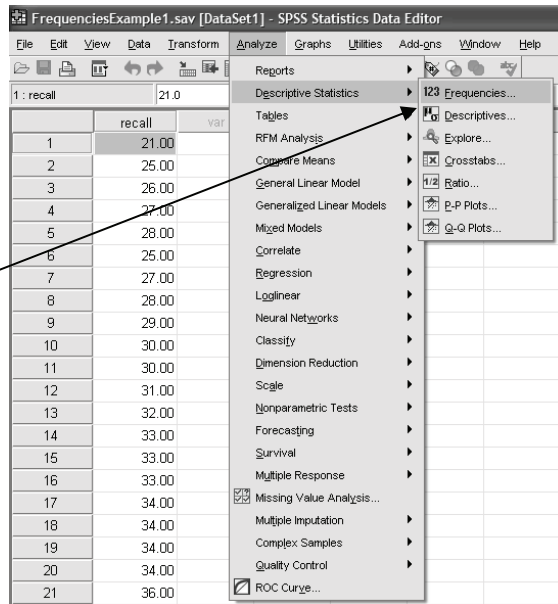A Guide to SPSS 17.0
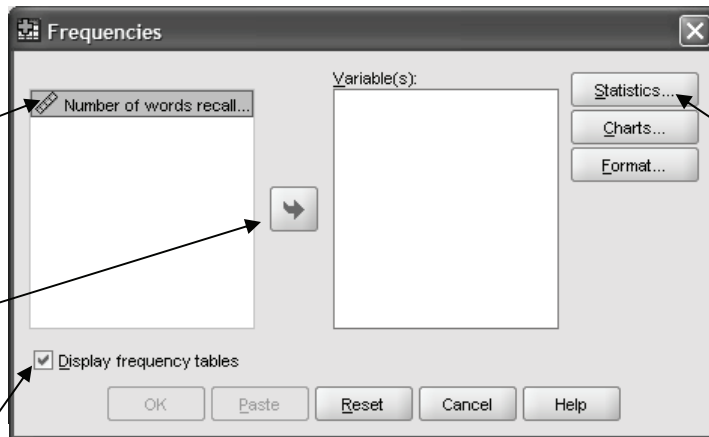Leonard D. Stern
Second Edition

PEARSON

The **Frequencies** Procedure

1. From the **Analyze** menu select **Descriptive Statistics** then **Frequencies**.

2. Click on the name of the variable to be analyzed to highlight it.

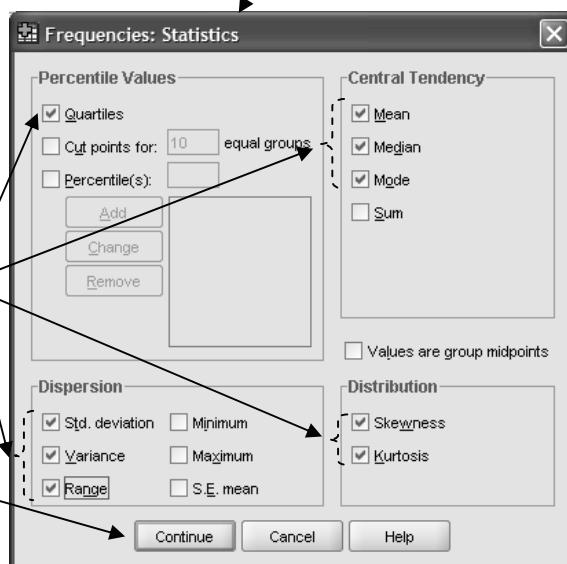3. Click the arrow to transfer the variable.

4. To include a frequency table in the output, make sure this option is checked.

5. Click **Statistics** to select descriptive measures.
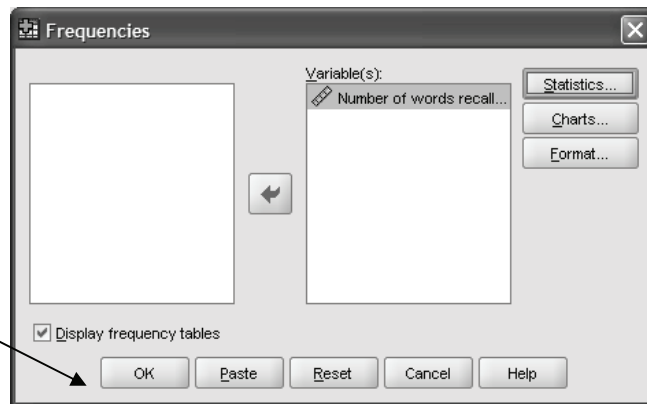
6. Click in each box to select the desired measure.

7. Click to proceed.

The **Frequencies** Procedure

8. Click **OK** to run the procedure.

Interpreting the Output

The table of summary statistics and the frequency distribution output by the **Frequencies** procedure are shown below. The table of summary statistics includes information about the number of scores in the distribution and the number of missing values followed by values of requested measures of the distribution's central tendency, variability, and shape. Note that the **Frequencies** procedure does not directly provide a value of the distribution's interquartile range. However, the interquartile range may be calculated from the values of the distributions 25th and 75th percentiles. That is, by subtracting the value of the score that has a percentile rank of 25 from that having a percentile rank of 75, one obtains the range covered by the middle 50% of the scores in the distribution.

The **Frequencies** Procedure

The negative value of the index of skewness indicates the distribution is negatively skewed. To interpret its magnitude, divide the value of the index of skewness by its standard error. A similar process can be applied to the kurtosis statistic. In both cases, the resulting value for our example is less than 1, indicating that the distribution does not differ substantially from *normal* in either skewness or kurtosis.

Statistics

Number of words recalled

N	Valid	23
	Missing	0
Mean		30.6957
Median		31.0000
Mode		34.00
Std. Deviation		4.39457
Variance		19.312
Skewness		-.220
Std. Error of Skewness		.481
Kurtosis		-.317
Std. Error of Kurtosis		.935
Range		18.00
Percentiles	25	27.0000
	50	31.0000
	75	34.0000

To interpret the magnitude of the skewness measure, divide its value by its standard error
$(\dfrac{-.220}{.481} = -.457)$

To interpret the magnitude of the kurtosis measure, divide its value by its standard error
$(\dfrac{-.317}{.935} = -.339)$

You can find the interquartile range by subtracting the value of the score having a percentile rank of 25 from that of percentile rank from its 75 (34-27=7).
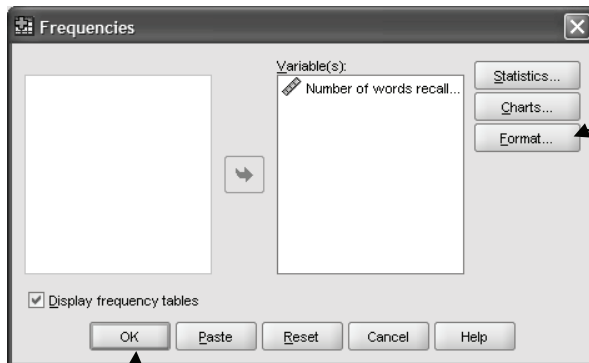
Number of words recalled

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21.00	1	4.3	4.3	4.3
	25.00	2	8.7	8.7	13.0
	26.00	1	4.3	4.3	17.4
	27.00	2	8.7	8.7	26.1
	28.00	2	8.7	8.7	34.8
	29.00	1	4.3	4.3	39.1
	30.00	2	8.7	8.7	47.8
	31.00	1	4.3	4.3	52.2
	32.00	1	4.3	4.3	56.5
	33.00	3	13.0	13.0	69.6
	34.00	4	17.4	17.4	87.0
	36.00	1	4.3	4.3	91.3
	37.00	1	4.3	4.3	95.7
	39.00	1	4.3	4.3	100.0
	Total	23	100.0	100.0	

Notice that the value of each score having a different value in the data set is listed in this table. If the data set contains many different scores, the table can be long.

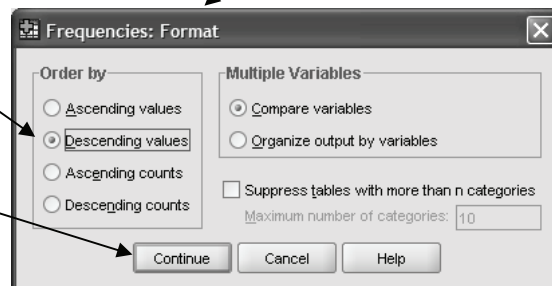## *Options for the* Frequencies *Procedure*

Ascending vs. Descending Order of Scores.

One option that can be applied to a frequency distribution affects the order in which scores in the first column of the table are arranged. To change from the default ordering of scores from lowest to highest (in relation to the top of the column), select the appropriate option presented in the **Format** window that opens when the **Format** button is clicked on the **Frequencies** window:

1. To change the order of scores in the table to go from high to low, begin by pressing the **Format** button.

2. Select this option.

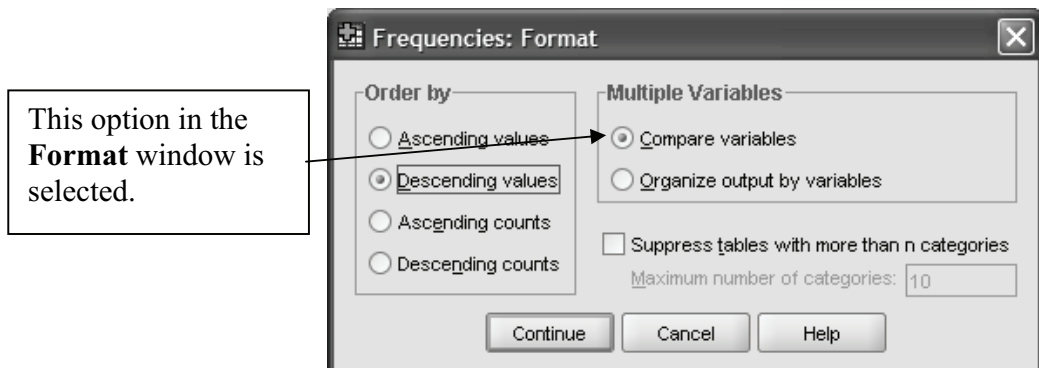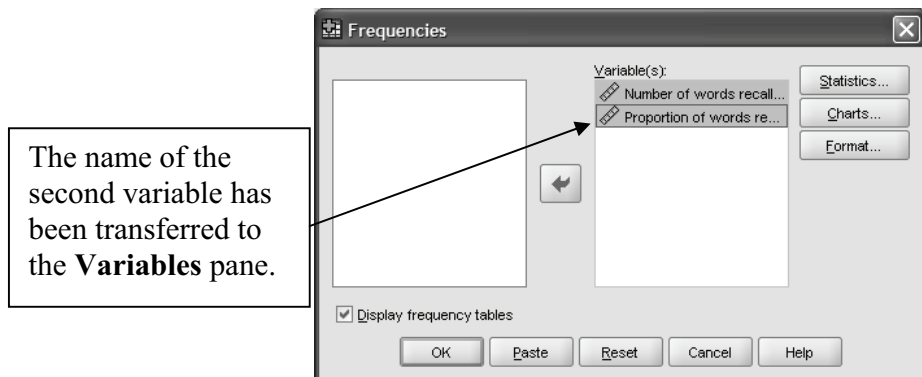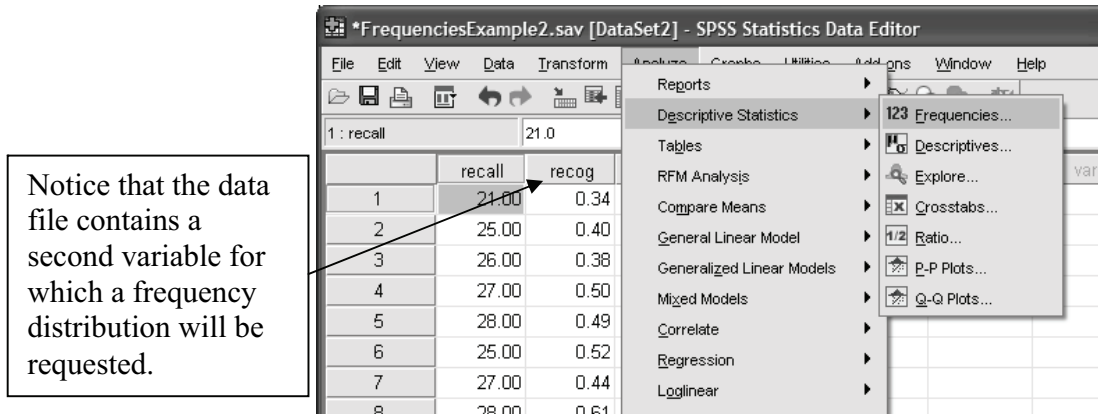3. Click **Continue** then click the **OK** button on the **Frequencies** window.

Notice that the ordering of scores in the first column is from high to low.

Number of words recalled

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	39.00	1	4.3	4.3	4.3
	37.00	1	4.3	4.3	8.7
	36.00	1	4.3	4.3	13.0
	34.00	4	17.4	17.4	30.4
	33.00	3	13.0	13.0	43.5
	32.00	1	4.3	4.3	47.8
	31.00	1	4.3	4.3	52.2
	30.00	2	8.7	8.7	60.9
	29.00	1	4.3	4.3	65.2
	28.00	2	8.7	8.7	73.9
	27.00	2	8.7	8.7	82.6
	26.00	1	4.3	4.3	87.0
	25.00	2	8.7	8.7	95.7
	21.00	1	4.3	4.3	100.0
	Total	23	100.0	100.0	

Multiple vs. Single Tables of Summary Statistics for Multiple Variables.

It is possible to apply the **Frequencies** procedure to more than a single variable. When applied to multiple variables, the summary statistics for all variables will by default be displayed in a single table; alternatively, if requested, a separate table of statistics for each variable can be displayed. The examples below illustrate these options.

Notice that the data file contains a second variable for which a frequency distribution will be requested.

The name of the second variable has been transferred to the **Variables** pane.

This option in the **Format** window is selected.

The **Frequencies** Procedure

Frequencies

[DataSet2] C:\Documents and Settings\Leonard Stern\Desktop\SPSSV14Files\Section 2\Freq

Statistics

		Number of words recalled	Proportion of words recognized
N	Valid	23	23
	Missing	0	0
	Mean	30.6957	.4991
	Std. Deviation	4.39457	.09936

Frequency Table

Number of words recalled

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	39.00	1	4.3	4.3	4.3
	37.00	1	4.3	4.3	8.7
	36.00	1	4.3	4.3	13.0
	34.00	4	17.4	17.4	30.4
	33.00	3	13.0	13.0	43.5
	32.00	1	4.3	4.3	47.8
	31.00	1	4.3	4.3	52.2
	30.00	2	8.7	8.7	60.9

The requested summary statistics for the two variables are displayed in a single table.

Statistics

		Number of words recalled	Proportion of words recognized
N	Valid	23	23
	Missing	0	0
	Mean	30.6957	.4991
	Std. Deviation	4.39457	.09936

If **Organize output by variables** is selected in the **Format** window, then a separate summary table of requested statistics followed by a frequency distribution is displayed for each variable.

The output is requested to be organized by variables.