CHAPTER 3

Running SPSS

Chapter Purpose

This chapter introduces fundamental concepts of data entry and running SPSS.

Chapter Goal

To provide readers an opportunity to enter data, run SPSS, and review results.

Chapter Glossary

Chart Editor: SPSS window in which charts can be edited.

Data Editor: SPSS window in which data can be entered and defined.

Designated Window: If multiple windows of one type are opened (e.g., Viewer windows), the one which is active and in which work can be done.

SPSS-Format Data File: A data file saved by SPSS with both data and file definitions.

String: A variable that can have either numbers or letters for values.

Syntax Editor: SPSS window in which command syntax can be written and edited.

Syntax File: File containing SPSS command syntax.

Viewer: SPSS window in which output is displayed.

Now for the fun for which we have been waiting. First, we will take a look at the way SPSS runs and some of the files that it uses. Next, we will create a dataset using the Wintergreen data. Once the data have been entered, we will use the SPSS pull-down menus to conduct the first analyses of these data. We will then use SPSS to draw a chart displaying the results of one of the analyses. By the end of the chapter, you will have taken the first steps to becoming a proficient SPSS user, and the groundwork will have been prepared to support further investigation into intermediate SPSS topics. Remember, the information that is covered will be easier to understand if you practice at your computer at the same time that you read this book.

You can run SPSS using either the pull-down menus or the Syntax Editor. The former method is a menu-driven approach, while the latter method involves writing your own SPSS programs. We will begin by using the pull-down menus to run SPSS. The use of the syntax window to run SPSS will be deferred until Chapter 7.

SPSS FILES

SPSS uses several types of files. First, there is the file that contains the data that have been entered using the SPSS Data Editor window. This is called, simply enough, the *data file*. Since this file has been saved using SPSS, it is known as an *SPSS-format data file,* and it contains both the data and all the related file definitions (for example, the columns the variables are in, the variable and value labels, and the codes that have been used to define missing values). In contrast, a data file that has been created with your favorite word processor and saved in text format is known as a *raw data file,* and SPSS has to be told how the file has been defined in order to be able to read it.

Once SPSS has conducted an analysis, it displays the results in the output "Viewer" window. The important thing to remember is that you create the data file and instruct SPSS what analysis to perform. SPSS then conducts the analysis and displays the results. These contents of this window can be saved in a *viewer file.* SPSS also creates a *journal file* that records the commands run during an SPSS session (this file is not automatically displayed, and we will not be concerned about it at this time).

You have the freedom to call your files whatever you wish, within the restrictions posed by the computer's operating system. Files have a filename followed by a three-character extension (readers unfamiliar with Windows will benefit from a review of any book that discusses file names and directory structure). SPSS has the default convention of naming data files with a *.sav* extension and Viewer files with a *.spo* extension. It is helpful to use the same name for files related to one program and to vary the file extensions to identify the different types of files. For example, in the Wintergreen study, it would make a great deal of sense to name the two files:

```
Data file:       wintergreen.sav
Viewer document: wintergreen.spo
```

Notice how this approach allows you to keep all the related files in one group, but to easily distinguish each one. Later, if you created an SPSS syntax file to analyze these data, then that file could be named using the default *.sps* extension:

```
Syntax file: wintergreen.sps
```

Similarly, if the Wintergreen data were first entered into an external raw data file (to be read by SPSS at a later time), then that file could be named:

```
External data file: wintergreen.txt
```

GETTING STARTED: ENTERING THE WINTERGREEN DATA

Let's get started! Launch SPSS from the Windows Start Button (that is, click the Start Button, select Programs, and select SPSS 12.0 for Windows). At the top of your screen, you will see the pull-down menus, and just below them, you will see a toolbar with several icons. If you place the mouse pointer on any one of the toolbar

icons, SPSS will display a label telling you what that icon does. SPSS automatically opens the Data Editor window, and your screen looks like Figure 3.1.

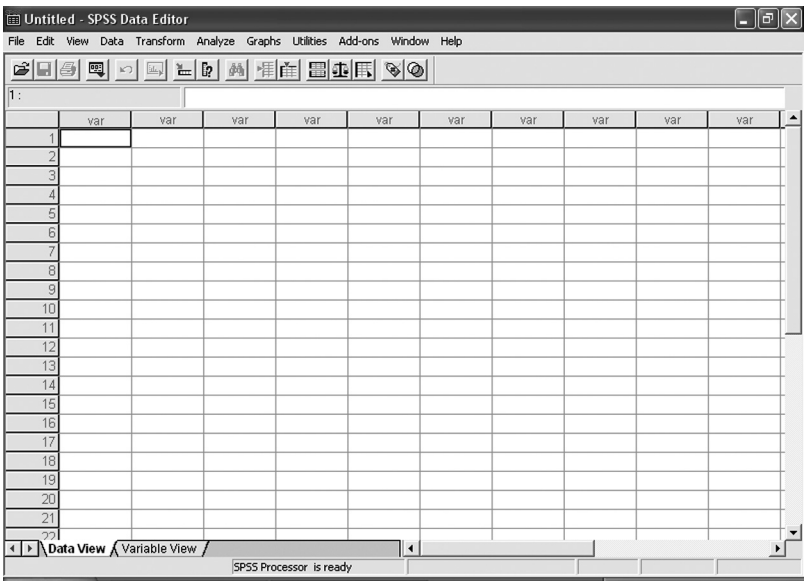

Figure 3.1 SPSS Data Editor Window: Data View

Notice that the Data Editor window looks much like a spreadsheet, in that it is made up of cells defined by both rows and columns (here is where the resemblance ends, however, as the Data Editor is not capable of spreadsheet functions). In the Data Editor window, each row always represents a single record, and each column always represents a single variable. By using the keyboard arrow keys (up, down, right, and left) or your mouse, you can move the cursor around to different cells in the window.

Notice that at this point, each column of data has automatically been called "VAR" by SPSS. Once data have been entered, the first column will be called "VAR00001," the second will be called "VAR00002," and so on. However this is not very informative, so it is helpful to give the variables more descriptive names. In addition,

since it is easier to work with variables if they have short names (and in earlier versions, the variable name was limited to eight characters in length), it too may be less descriptive than we would like, so we will assign a label to the variable name. We will want to assign labels to coded values for the same reason. This idea of labeling the variables and their values is an important one, as it will make data entry easier if you apply the labels before entering the data. In addition, your SPSS output will be much easier to read if the variables and values have been labeled.

To label the first variable, click on the "Variable View" tab at the bottom of the screen, so that your screen now looks like Figure 3.2.

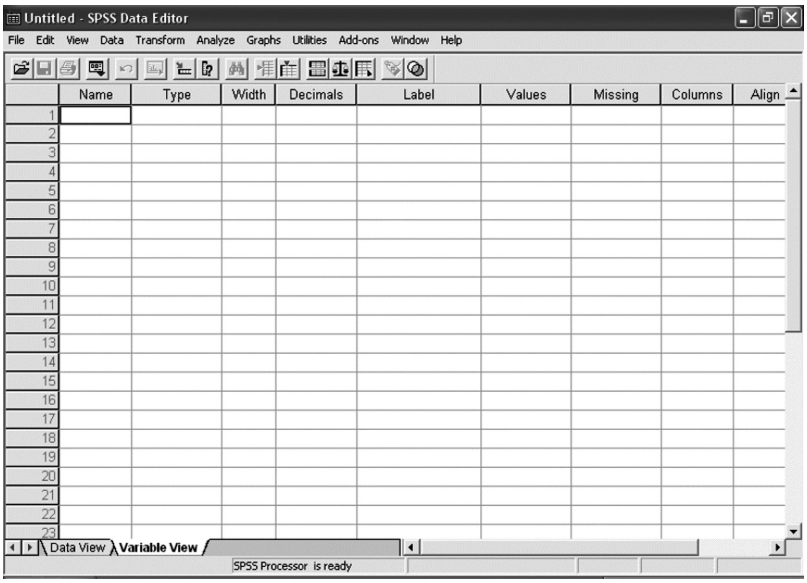

Figure 3.2 SPSS Data Editor Window: Variable View

To label the first variable, place the cursor on the upper-left-hand cell and enter the variable name. Since we will be entering the data from the Wintergreen study, enter "RespondentNumber" in this cell (remember, SPSS does not allow a space in the variable name, so that

"Respondent Number" would not be accepted as a variable name). Now, press the enter key and notice that SPSS prompts you for additional information about the variable by presenting the screen shown in Figure 3.3.

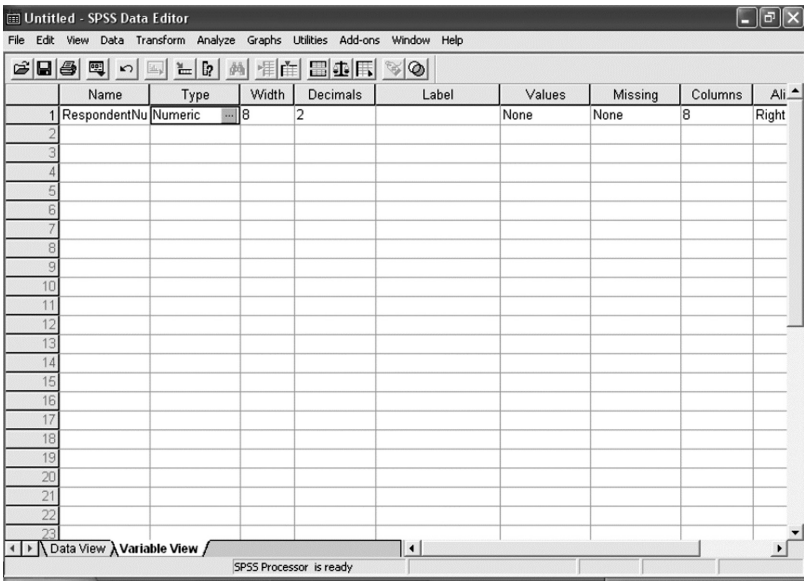

Figure 3.3 SPSS Data Editor Window With First Variable Named

Use your mouse to click on the cell on the same row that is in the "Label" column and enter "Respondent Number" as the variable name. Notice that when you click the "Data View" tab at the bottom of the screen, the first variable is now labeled "RespondentNumber" rather than "VAR."

Now, on the second line, enter "aa" as the variable name for the second variable and "Academic Ability" as the variable name. At this point, notice that you have other options available to you in Variable View screen. For example, if you click on the ellipsis (". . .") in the **Type** cell, you will be presented with the dialog box shown in Figure 3.4 and several different data types to choose from.

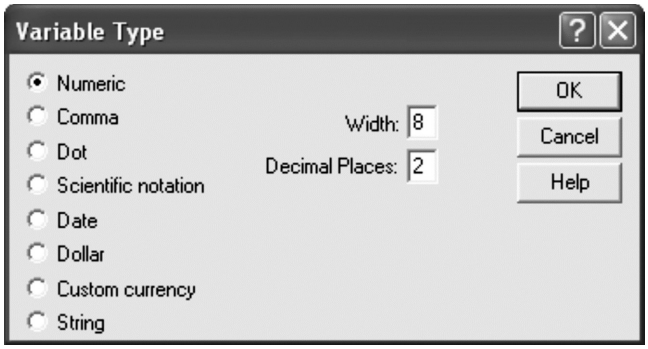

Figure 3.4 Variable Type Dialog Box

By default, the variable is considered to be a number that has up to eight digits. You can tell SPSS to expect a larger number by entering a different size in the **Width** and **Decimal Places** boxes, although that is certainly not necessary for the Wintergreen data. It is important to notice, though, that this is where you can tell SPSS to expect a "String" variable (that is, an alphanumeric variable that can be coded with either numbers or letters) if appropriate. For example, if for the "Gender" variable, we had used "M" instead of "0" for "Male" (and "F" instead of "1" for "Female"), then the Data Editor would not let you enter these values until you told it to expect "Gender" as a "String" variable. You may also choose from several other variable types, as appropriate for your data.

Now, on the third line, enter "pe" as the variable name for the third variable and "Parent Education" as the variable name, and enter "sm" as the variable name for the fourth variable and "Student Motivation" as the variable name. Click on the cell in the fourth row under in the column labeled "Values" and then click on the ellipsis that appears in this cell. You will then see the **Value Labels** dialog box shown in Figure 3.5.

Use the tab key (or the mouse) to bring the cursor to the **Value** box in the **Value Labels** section. Enter a "0" (which is our first value), then tab or click down to the **Value Labels** box and enter "Not willing," and, finally, click the **Add** button. Repeat for the other two values of this variable (refer to the codebook in Figure 2.1 for the values). The Value Labels dialog box will now look like Figure 3.6.

Figure 3.5 Value Labels Dialog Box

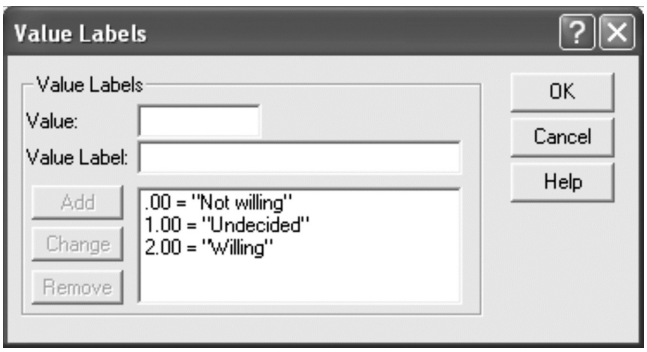

Figure 3.6 Value Labels Dialog Box With Labels Entered

Once you have finished assigning value labels for the student motivation variable, click the **OK** button to return to the Data Editor window. If you discover later on that for some reason, you need to further define this variable (for example, if you want to change the labels), you can always return to this dialog box. As their names suggest, the **Change** button can be used to change a value label, the **Remove** button can be used to remove a value label, the **Cancel** button can be used to cancel your labeling work, and the **Help** button can be used to access the SPSS help file.

Another important option that is available to you in the "Variable View" screen is that of declaring the placeholders that have been

used for missing values. For example, remember that "Student Motivation" may take only the values of "0," "1," and "2." Earlier, I suggested that if the measure of student motivation was not available for a respondent, then an out-of-range value such as "9" could be used to indicate that this respondent had missing data. If this has been done, it will be necessary to declare "9" as a missing value by clicking on the ellipsis in the **Missing Values** cell, selecting **Discrete Missing Values** in the Missing Values dialog box that appears, entering "9" as the missing value, and clicking the **OK** button. If, in this case, "9" is not declared as a missing value, then it will be considered to be a non-missing value and treated as such in the data analysis (this, of course, would lead to incorrect results). The Missing Values dialog box now looks like Figure 3.7.

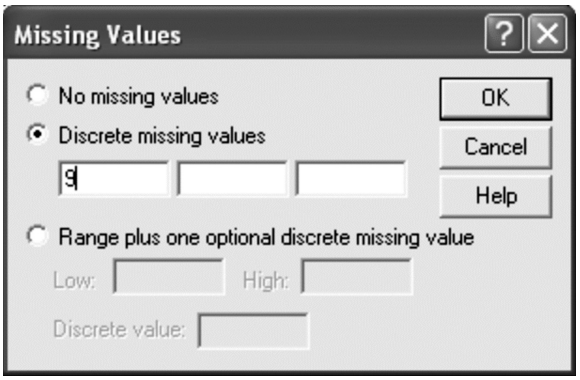

Figure 3.7 Missing Values Dialog Box With Discrete Value Entered

Now go ahead and assign the variable and value labels to the remaining variables (see the codebook in Figure 2.1 for the labels).

To enter the data for the Wintergreen study, return to the Data View screen (by clicking the Data View tab at the bottom of the screen) and move the cursor to the upper-left-hand corner of the screen. Enter "1" for the first respondent number, then move the cursor one cell to the right and enter "93" for the academic ability score, then move the cursor one cell to the right and enter "19" for parent education, and

so on. Once all the data for that record are entered, move the cursor to the left-most cell in the second line. You are now ready to enter the second record, and the Data Editor window looks like Figure 3.8.

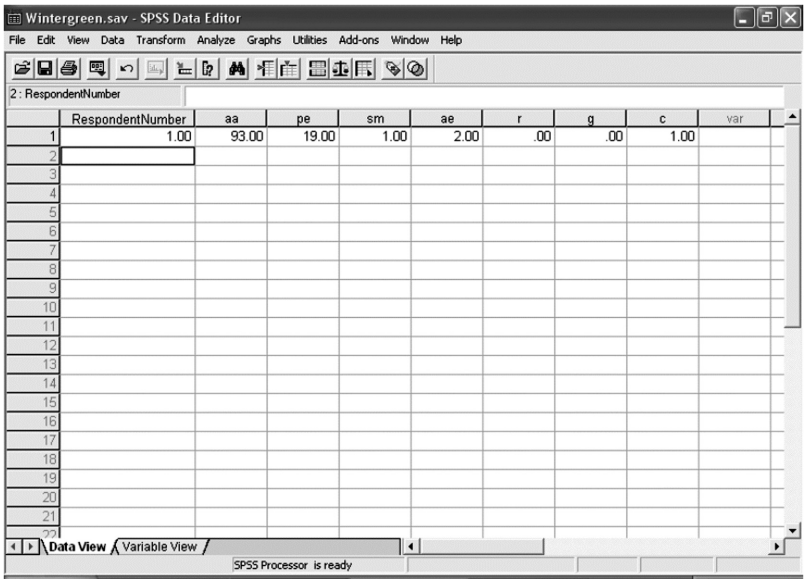

Figure 3.8 Data Editor Window With First Case Entered

Go ahead and enter the first 10 records (see Table 2.2 for the data). Now save the data. This can be done in one of two ways. The first method is to use the **File** pull-down menu and the **Save** choice. Since these data have not previously been saved, you will see a dialog box prompting you to enter a file name. Notice that SPSS provided the default data file extension *(.sav)*. Type in the name "wintergreen" and click the **Save** button. SPSS will then save the data to this file (SPSS will automatically attach the *.sav* file extension if you do not type it in—in general, SPSS will automatically attach the default file extension if you do not type it in (e.g., *.sav* for a data file, *.spo* for an SPSS Viewer file, *.sps* for a syntax file, etc.). As an alternative to using the pull-down menu, you could click on the **Save File** icon in the toolbar (it is the second icon from the left and looks like a diskette). One other alternative would be to select **File Save As . . .** if the dataset had already been saved once but you now want to save it as new file with a new name.

Go ahead and enter the rest of the Wintergreen data. As a precaution, save your data each time you have entered another 10 records. Once all the data are entered, it is also a good idea to copy the dataset to a diskette (or some other storage device such as a CD or thumb drive) as a backup procedure. Making a backup copy of your work takes far less time than would be required to reenter the data should they accidentally be deleted from your computer.

DATA ANALYSIS

Now you are ready to conduct data analysis with SPSS. First, let's answer the question, "What are the smallest, largest, and average values for Academic Ability and Parent Education?" From the **Analyze** pull-down menu, select **Descriptive Statistics**, then **Descriptives . . .** You will be presented with the dialog box shown in Figure 3.9.

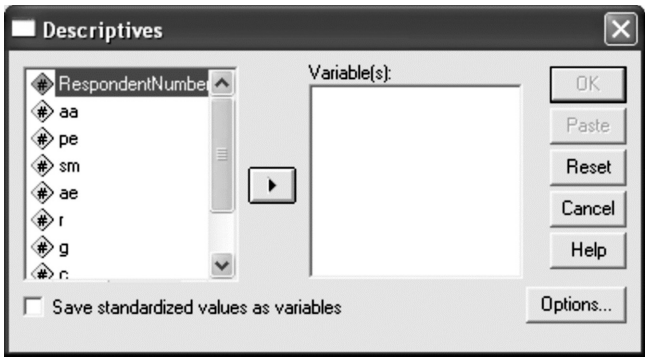

Figure 3.9 Descriptives Dialog Box

This dialog box is typical of what you will see for each of the different analyses SPSS is capable of performing. Click the variable "aa" to select it for analysis, and then click the button with the picture of the right arrow. This will move the variable "aa" from the list of all available variables on the left to the list of selected variables on the right. Now click the variable "pe" in the list on the left, and then click the button with the picture of the right arrow. Next, click the **Options** button to see the "**Descriptives: Options**" dialog box and make sure that there is a "✓" in the boxes for the mean, standard deviation, minimum, and maximum

(if a box is empty, then click on it to select it; similarly, if a box is marked, then click on it to deselect it). Then click the **Continue** button.

Now you can select one of the buttons on the right of the **Descriptives** dialog box. If you select **OK**, the analysis will be performed. If you select **Paste**, the SPSS code for this analysis will be written to the syntax window. This is a very important point that we will return to in Chapter 7. If you click **Reset,** the variables you have selected for analysis will be returned to the list of variables on the left (that is, all the available variables will be listed, and none will be selected for analysis). If you select **Cancel,** no analysis will be done and you will return to the window you were in before you chose the **Analyze** pull-down menu (e.g., the Data Editor window). Finally, if you choose **Help**, you will access the SPSS help facility.

At this point, click the **OK** button and run the analysis. SPSS will switch to the SPSS Viewer window and perform the analysis. You will see the following results in this window as shown in Figure 3.10.

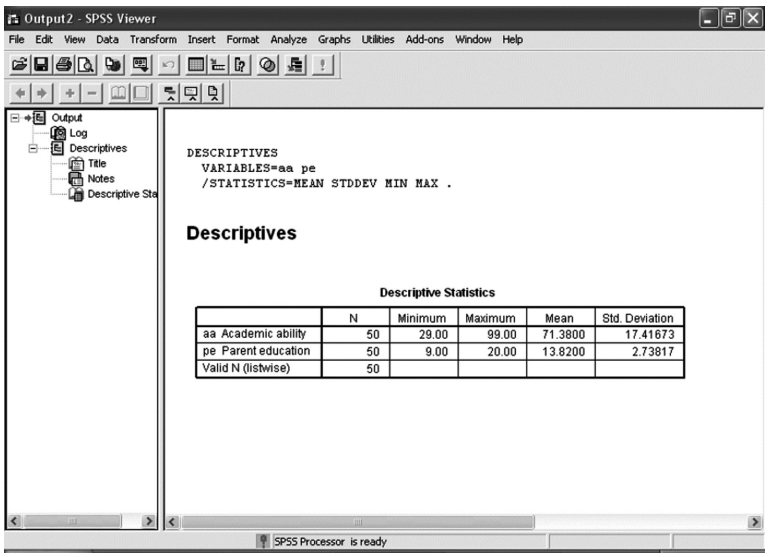

Figure 3.10 Viewer Window With Results From Descriptives Procedure

Congratulations! You are now a beginning SPSS user, and you have just completed a data analysis task using SPSS. Wasn't that considerably easier than performing these analyses by hand? Image the increased relative ease if you had 500, 5,000, or 500,000 cases instead of just 50.

Let's take a careful look at the SPSS Viewer window. First, note that the window is divided into two panes. The pane on the left shows the contents of the SPSS output in outline form. In our present example, the first level of the outline is called "Output." Following the Output is the "Log," which contains the commands that SPSS executed to run the analysis. Don't worry if you do not see the log in your output, as that simply means that the option to display the log in the SPSS Viewer has not been selected for your program (however, you may change that option if you wish). Next is the heading for the results of our first analysis, which is labeled "Descriptives." Within the descriptive analysis is a "Title," "Notes (which have been hidden)," and the "Descriptive Statistics" themselves. The contents of any level of this outline can be displayed or hidden by using the **Show** and **Hide** toolbar icons (the fifth and sixth icons on the second row of the toolbars) or by double-clicking on the symbol on that level of the outline.

The pane on the right provides the detailed results of the SPSS analysis. By clicking on any line of the outline on the left, the corresponding detail appears on the right. For example, if you click on "Titles" in the outline on the left, an arrow points to the title line on the right. This is the title that SPSS has provided to the output from the descriptive statistics analysis. You can edit the title by double-clicking on it and then making the changes you wish to the title. If you then click on "Descriptive Statistics" in the outline on the left, an arrow points to table on the right, which contains the results of the analysis. Thus, by using the outline on the left, you can easily navigate through the output to see the portion in which you are interested. This is particularly helpful when the output is lengthy, in that it is easy to go directly to any portion of the output without having to scroll through the entire output searching for the portion that you want.

Now let's take a look at the results of the analysis. In the first column of the results, SPSS informs us which variables have been analyzed. In the next column, we see the number of cases that were used in the analysis (since there were no missing data for either variable, all 50 cases have been used in the analyses). Next, we see the minimum and maximum values of the variables (for example, the fewest number of years of parent education is 9, while the most is 20). We then see the means and standard deviations for each variable (the mean number of years for parent education was 13.82, with a standard deviation of 2.74). The last line of the output shows the "Valid N (listwise)." This is the number of valid cases (i.e., cases with no missing data). By default,

"Descriptive" will include the total number of valid cases available for any one variable. For example, if there had been no missing cases for the academic ability variable and one missing case for the parent education variable, then 50 cases would have been included in the first analysis, 49 cases would have been included in the second analysis, and 49 cases would have been counted in the "Valid N (listwise)."

It is worth noting that had we not taken the time to assign names and labels to the variables, then instead of seeing "Academic Ability" and "Parent Education" in the left column, we would instead see "aa" and "pe" or "VAR00002" and "VAR00003" (that is, either the variable name without a label or the default name for the variables in the second and third columns of the Data Editor window if they are not given a name). This might be okay for this first analysis, but if you do several analyses with different data and different variables and you do not name and label your variables, you will soon be looking at several different outputs, all with the default variable names. Clearly, this would quickly become confusing. In addition, you may wish to show this output to someone who is not familiar with the study or the dataset, and it is helpful for them to be presented with variable labels. In short, make it easy on yourself and others by using variable and value labels.

Go ahead and save the output. From the **File** pull-down menu, select **Save**. Give the output file a name such as "Wintergreen.spo" (since this is the output from the first analysis of the Wintergreen data), and click the **Save** button. Notice that you can use standard Windows procedures to select the drive or directory in which to save the file (readers unfamiliar with Windows procedures will benefit from a review of any book in which they are covered).

If you wish to switch between the Data Editor window and the Viewer window, you may do so by choosing from the open windows, which are listed in the **Window** pull-down menu. Alternatively, you can click on the buttons on the Windows task bar at the bottom of your screen. In general, you can use either of these techniques to switch among any of the windows that are currently open.

Now let's obtain frequency distributions to answer the question, "What are the demographic characteristics of the students in the Wintergreen study, how motivated were they, and how likely to succeed in college were they rated?" From the **Analyze** pull-down menu, select **Descriptive Statistics**, and then select **Frequencies . . .** You will see the dialog box Shown in Figure 3.11.

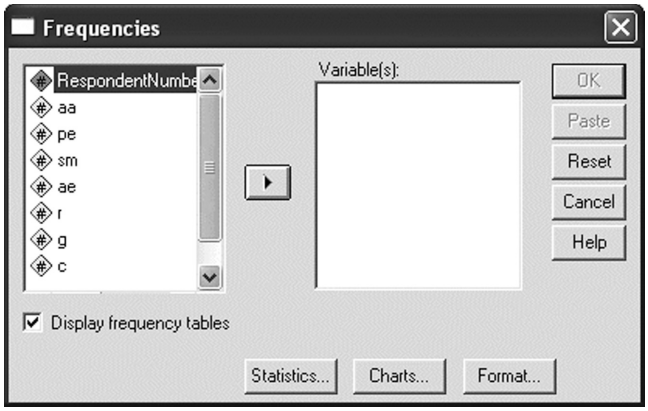

Figure 3.11 Frequencies Dialog Box

Click on "sm" in the list of variables available for analysis on the left. Then click the button with the picture of the right-hand arrow. The selected variable will be moved to the list on the right. Repeat this procedure to select the variables "ae," "r," "g," and "c." If you wish, you could also select "aa" or "pe," but this is not a particularly meaningful way to summarize the data for those variables. Similarly, you could also select "RespondentNumber," but you already know that you will get a list of values from 1 to 50, each with one case (if you do not see what I mean, I encourage you to select "RespondentNumber" to include in this analysis, and then study the output). You will notice that you have several options available in this dialog box, but we will not select any of them at this time. Go ahead and click the **OK** button. Once SPSS has completed the analysis, the results appear in the Viewer window.

First, note that on the left-hand side of the window, the outline for the results of the Frequencies analysis has been added below the outline for the Descriptives analysis (of course, if you opened and designated a new Viewer window, or if you ended your SPSS session after the Descriptives analysis and started a new session before conducting the Frequencies analysis, then the contents of the Viewer window would contain only the results of the Frequencies analysis). Reading down this outline, you first see "Frequencies" as a second-level heading in the outline, and beneath this heading are headings for the "Title," "Notes," "Statistics," and then the "Frequency Tables" as a third-level heading, which

includes as a fourth-level heading the results for "Student Motivation," "Advisor Evaluation," "Religious Affiliation," "Gender," and "Community Type." By clicking on any one of these fourth-level headings in the outline, you see the corresponding results of the analysis in the right-hand side of the window.

You will see that the default title SPSS has provided for this set of analyses is simply the word "Frequencies." Again, you may double-click on the title to edit it if you wish. The "Statistics" table details the number of valid and missing cases for each variable that has been included in the analysis.

In the left-hand pane of the window, click on "Student Motivation" to see the results for the frequencies analysis for that variable as shown in Figure 3.12.

sm Student Motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 Not willing	13	26.0	26.0	26.0
	1.00 Undecided	23	46.0	46.0	72.0
	2.00 Willing	14	28.0	28.0	100.0
	Total	50	100.0	100.0	

Figure 3.12 Partial Results From Frequencies Procedure

These results include the frequency of cases that responded with each value of the variable, followed by the percentage of cases, the valid percentage of cases, and the cumulative percentage of cases. Thus, in the "Frequency" column, we see that 13 students indicated that they were "Not willing" to spend extra hours studying, 23 students were "Undecided," and 14 students were "Willing" to spend extra hours studying. Next, there are three columns of percentages. The "Percent" column is the percentage of students in each category, based on the total number of cases. If there were cases with missing data, then there would be a fourth row for this variable (labeled

"Missing") and the percentage of cases in the "Missing" category would also be calculated. The next column, labeled "Valid Percent," shows the percentage of cases in each category based on the number of cases with non-missing data. For example, if two cases had missing data, then these two cases would be excluded from the analysis and the percentage in each category of student motivation would be based on 48 cases. Because no cases in this example have missing data, the two columns ("Percent" and "Valid Percent") show identical results. The fourth column shows the cumulative percentage for the frequency distribution.

The rest of the output is similar in format and shows the results for the other variables. You should see that 26% of the students were evaluated as "Likely to fail" in college, 50% were evaluated as "Could succeed or could fail," and 24% were evaluated as "Likely to succeed." Among the students, 42% indicated that they were Catholic, 40% indicated that they were Protestant, and 18% indicated that they were Jewish. In terms of gender, 56% of the students were male, and 44% were female. Finally, 60% of the students came from an urban community, while 40% came from a rural community.

DRAWING CHARTS

You can draw charts using the SPSS chart feature. Charts are very important for displaying data, whether for the purpose of examining the data or for the purpose of communicating the results of an analysis. To draw a chart, simply select this option (if it is available) when conducting an analysis. Let's look at an example. First, return to the **Frequencies** dialog box, select only the variable "sm" (you can deselect variables by clicking on them and then clicking the button with the left-hand arrow on it), and then click on the **Charts . . .** button. You will see the dialog box shown in Figure 3.13.

Select **Bar Chart** as the chart type and **Percentages** as the chart values. Then click the **Continue** button to return to the previous dialog box. Finally, click the **OK** button to run the analysis. SPSS first creates the frequency distribution and then draws the chart. You can see the chart by clicking on "Bar Chart" in the outline on the left-hand side of the Viewer window. It should look something like Figure 3.14 (depending on how your *Preferences* are set).

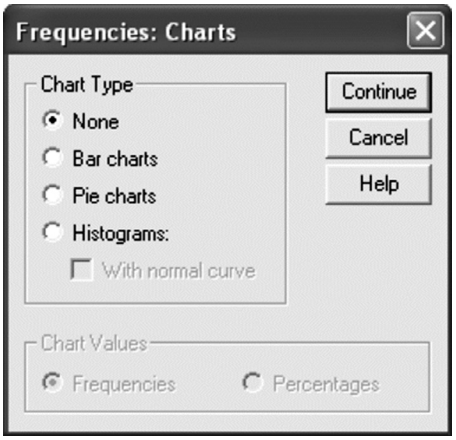

Figure 3.13 Frequencies Chart Dialog Box

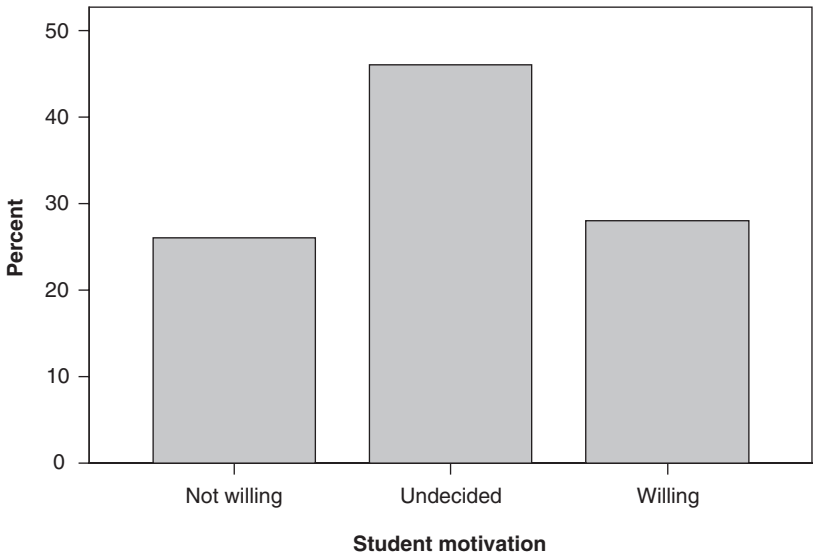

Figure 3.14 Chart Drawn With Default Specifications

Double-click the chart to enter the "Chart Editor" window. There are many things you can do with your chart once you are in this window.

For example, I would like to change the scale of the Y-axis so that the percentages are displayed in a range from 0 to 100 (I encourage you to display the full range whenever you are using percentages as an axis scale unless you have a particular reason to do otherwise). From the **Edit** pull-down menu, choose **Select Y Axis**, and then click the **Scale** tab in the properties dialog box. Click the box for the "Maximum" under the "Auto" column so that it does not have a check mark in it, and then change the "50" to "100" in the box under the "Custom" column. The dialog box will now look Figure 3.15.

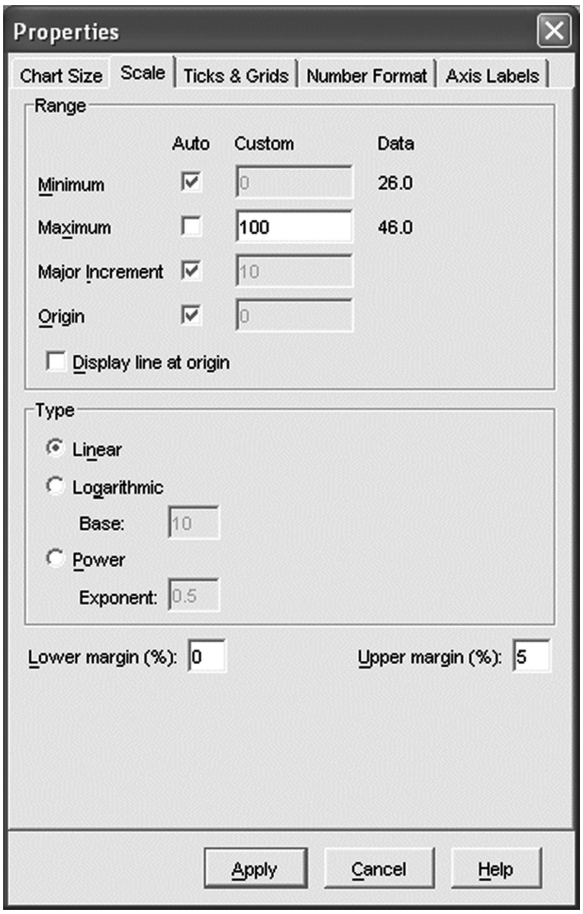

Figure 3.15 Chart Properties Dialog Box

Now click the **Apply** button, and notice that the chart has been rescaled.

If you wish to apply similar formatting to other charts, then you can save these changes as a chart template. To do so, in the Chart Editor window, from the **File** pull-down menu, select **Save Chart Template**. You will then be asked to specify the features of the template you wish to save, and then after clicking the **Continue** button, you will be asked to specify a name and location for the template to be saved. You can then apply this template to charts that you draw at a later time. To see how this works, save the chart template as "MyFrequencies" (SPSS gives the chart template the default extension of *.sgt*), run the Frequencies procedure for another variable (for example, "Community Type") and then double-click the chart to open the Chart Editor window. Next, from the **File** pull-down menu, select **Apply Chart Template . . .** select the template named "MyFrequencies.sgt," and click the **Open** button to apply to template to the new chart.

Now close the Chart Editor window and return to the Viewer window.

DESIGNATING A WINDOW

SPSS allows you to have more than one output window open at a time. To open a second (or third, or fourth, etc.) window, from the **File** pull-down menu, select **New,** and then **Output.** Since SPSS can work with only one active data file at a time, if you choose **File, New, Data,** it will want to close the current data file and open a new one.

Although you can have more than one Viewer window open at a time, only one of them can be *designated.* In other words, you may have more than one Viewer window open at a time, but when you click the **OK** button from a dialog box, SPSS can display only the results of an analysis in one of the open Viewer windows. How does SPSS know which one to use? It uses the one that has been designated. You can tell which window has been designated by looking at the center of the bottom of the screen. If there is a red exclamation point there, then the window has been designated. If no exclamation point appears at the bottom of the window, then that window has not been designated. To change which window is designated, simply click the icon with the exclamation point that appears at the right end of the upper toolbar in the Viewer window.

Having more than one window open affords you options that you otherwise would not have. As a simple example, consider the two analyses we have done so far. You may want the results of the analysis of

the academic ability and parent education data to be saved in one Viewer file and the results of the frequency distributions of the other variables to be saved in a different file. In this case, you would send the results to two different Viewer windows by designating the first window and running the first analysis, and then designating the second window and running the second analysis. You could then save the results in two different files. The more you use SPSS, the more you will encounter different scenarios and reasons for which you will wish to exercise the option of using different output windows. (Note: The concept of having multiple open windows and changing which one is designated also applies to syntax windows, which are discussed in Chapter 7.)

EXERCISE ONE

At the end of a semester-long course, a teacher decides to obtain students' feedback regarding their perceptions of the course through the administration of an anonymous survey. The fourth item on the survey states, "I liked the text that was used in this course," and students are asked whether or not they "Agree," are "Undecided," or "Disagree" with this statement. All 10 students complete the survey, and the following hypothetical data are collected:

Student	
Number	Item_04
01	Agree
02	Agree
03	Undecided
04	Agree
05	Agree
06	Undecided
07	Agree
08	Agree
09	Agree
10	Agree

(Continued)

Use SPSS to analyze these data to answer the question, "Did students in the course like the text that was used?" You will need to create a codebook, code the data (use "1" to indicate "Agree," "2" to indicate "Undecided," and "3" to indicate "Disagree"), enter the data, assign variable names and labels, assign value labels, generate a frequency distribution for this item, and state the answer to the research question.