

Starting SPSS for Windows

The easiest way to run SPSS for Windows is by using the Start button. During the installation of SPSS, the Setup procedure adds SPSS to the menu that appears when you click the Start button, as shown in Figure 2.1.

Figure 2.1 SPSS on the Start menu

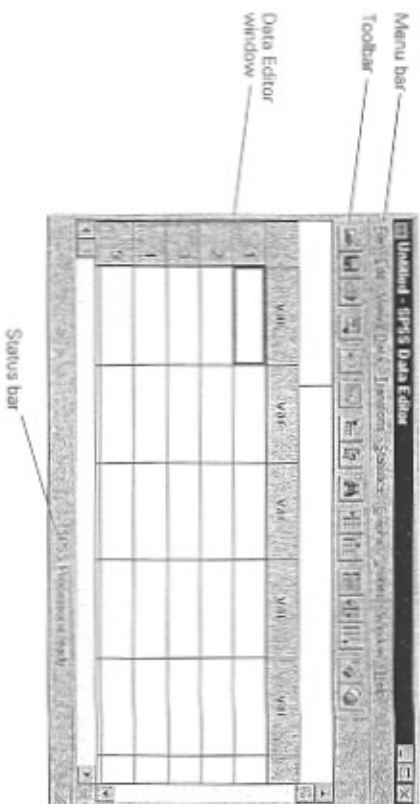


Always use the left mouse button unless the right one is specifically indicated.

- ▶ To start SPSS, click Start to display the Start menu, then click SPSS 8.0 for Windows.

The SPSS Data Editor window is displayed, as shown in Figure 2.2. You can move it, like any other window, by clicking and dragging its title bar, or resize it by clicking and dragging its sides or corners.

Figure 2.2 SPSS Data Editor window



Opening a Data File

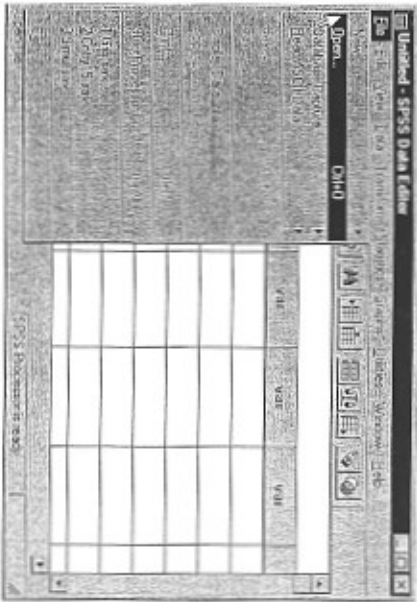
The SPSS Data Editor window displays your working data file. You don't have one yet—that's why the Data Editor is empty. If you have data of your own that are not in the computer yet, you can type the numbers right into the Data Editor. If the data are already in a spreadsheet or database file, you can probably read that file into SPSS. The data used in this book are already in the form of SPSS data files. To use them for the exercises, or just to follow along in the analysis, simply open the appropriate data file. To open a data file:

- ▶ Click the left mouse button on the word File on the SPSS Data Editor menu bar, as shown in Figure 2.3.

The File menu is displayed.

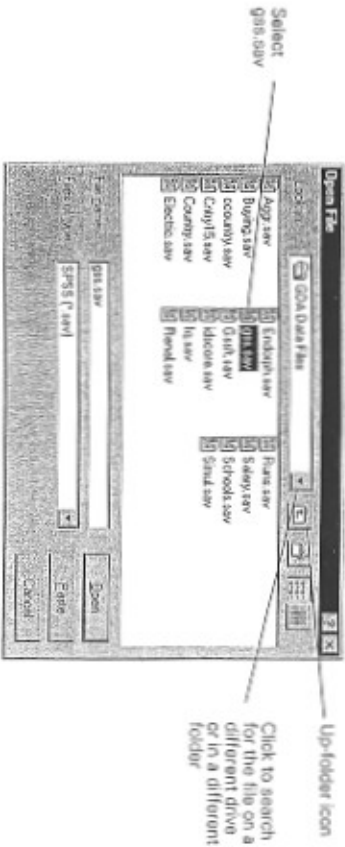
▶ On the File menu, click Open.

Figure 2.3 Opening a data file



When you click Open on the File menu, the Open File dialog box appears, as shown in Figure 2.4.

Figure 2.4 Open File dialog box



▶ Click the gss.sav data file where it appears in the list.

▶ Click Open.

? What if the gss.sav file doesn't appear? Only files in the current drive and directory are listed. The file you want may either be in another directory or saved on a different drive.

To look in a parent folder (one that contains the current folder), click the up-folder icon, as shown in Figure 2.4.

To look in a subfolder (one contained in the current folder), double-click it in the list.

To look on a different drive, click the up-folder icon repeatedly until you reach My Computer, then double-click the desired drive icon and continue down through the folder hierarchy on that drive. ■■■

When SPSS has finished reading the data file, it displays the data in the Data Editor, as shown in Figure 2.5. This particular data file contains selected information for 1,500 people who were interviewed in the 1993 General Social Survey, which annually asks a broad range of questions to a sample of adults in the United States population.

Figure 2.5 Data Editor window with GSS data



To view the data in the Data Editor, from the menus choose:

Window
gss - SPSS Data Editor

If your screen displays all numbers rather than value labels such as Male and Female in the cols, from the menus choose: View
Value Labels

Figure 2.7 Frequencies dialog box with default variable labels

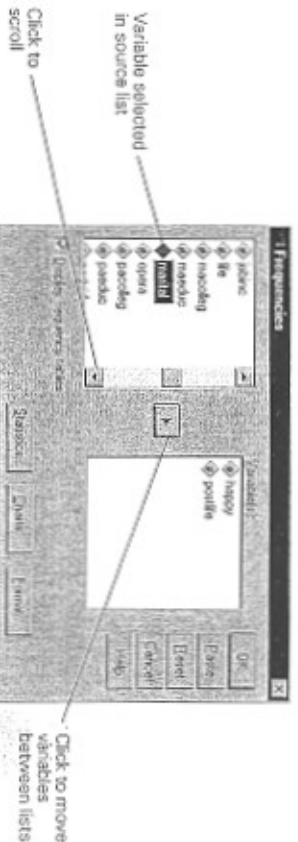


To make this book easier to read, we'll use variable names instead of labels in dialog boxes, as shown in Figure 2.7. To display variable names rather than labels in your dialog boxes (so you can follow along with the text), you need to change one of SPSS's default options.


- ▶ From the menus select:
Edit
Options...
- ▶ In the Options dialog box, click the General tab.
- ▶ In the Variable Lists group box, click Display names.
- ▶ Click OK.

This change doesn't take effect until the next time you open a data file. The effect of the changed option is shown in Figure 2.8.

Figure 2.8 Frequencies dialog box

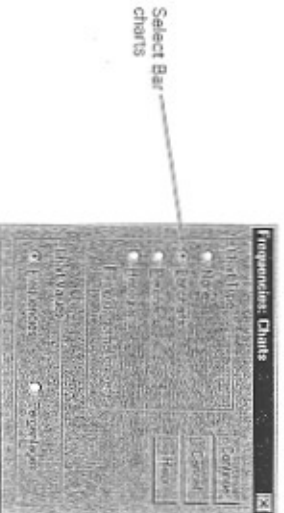


To use this dialog box:

- ▶ Click *happy* in the scroll list and then click .
- ▶ This moves *happy* into the Variable(s) list.
- ▶ Scroll down the source list until you see *postlife* and move it into the Variable(s) list as well.
- ▶ Click Charts.

This opens the Frequencies Charts dialog box, as shown in Figure 2.9. Here you can request charts along with your frequency tables.

Figure 2.9 Frequencies Charts dialog box

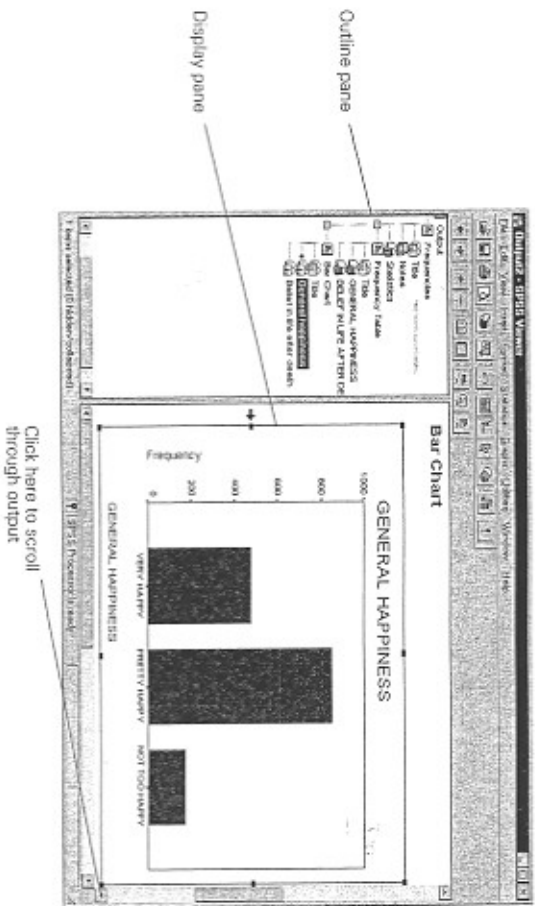


- ▶ Select Bar charts, as shown in Figure 2.9.

The Viewer Window

The Viewer window is where you see the statistics and graphics—the output—from your work in SPSS. As shown in Figure 2.10, the Viewer window is split into two parts, or panes. (A piece of a window is often called a pane in computer software, just as it is at your local hardware store.)

Figure 2.10 Viewer window



The left side (the outline pane) contains an outline view of all the different pieces of output in the Viewer, whether they are currently visible or not. The right side (the display pane) contains the output itself.

- ▶ To change the sizes of the two panes (for example, to make the display pane wider), just point the mouse at the line that divides them, press the left mouse button, and drag the line to the left or right.
- It's possible to ignore the outline pane and simply scroll through the output displayed in the display pane on the right side of the Viewer. The outline view offers some handy tricks, however.

The Outline Pane

Individual portions of output are associated with "book" icons in the outline pane. Each icon represents a particular piece of output, such as a table of statistics or a chart.

- ▶ If you click one of these icons in the outline pane, the associated piece of output appears instantly in the display pane. (But it may be hidden! See below.)

These icons are the quickest navigational controls in the Viewer.

The book icons are also used to hide or display pieces of output temporarily. Notice that most of them in the outline pane are "open book" icons, while a few look more like closed books. A "closed book" icon represents a hidden piece of output. Hidden output doesn't appear in the display pane but can be recovered any time you want to look at it.

- ▶ To hide a single piece of output, double-click the open book icon. This closes the icon and hides the output associated with it.
- ▶ To display a hidden piece of output, double-click the closed book icon. This opens the icon and displays the output associated with it.
- ▶ To hide *all* of the output from a procedure such as Frequencies, click the little box containing a minus sign to the left of the procedure name. That whole part of the outline collapses, and the minus sign changes to a plus sign to show you that more output is hiding there. Click the plus sign to show it all again.

You will find that you can do lots of things in fairly obvious ways by playing with the outline pane. Try rearranging the output (press the left mouse button on a book icon, drag it to a different place in the outline, and then release the mouse button), or deleting part of the output (click the icon and press the Delete key). The SPSS Help system can tell you all the details.

The Display Pane

The display pane shows as much of the SPSS output as can fit in it. To see more, you can either scroll the pane or use the outline pane to jump around.

The output in the display pane includes several different kinds of objects: tables of numbers (actually a special kind of tables, called pivot tables); charts; and bits of text such as titles. You have complete control over the appearance, and even the content, of most of these objects.

- To change something about an object, double-click it in the display pane.

Double-clicking an object opens an editor that is specially designed to modify it. The appearance of the object changes to show that you are editing it. The menu bar may change. If the object is a chart, a special chart editing window opens to offer you a powerful set of tools for changing the chart's appearance.

Let's look at these objects in the Viewer.

Viewer Objects

In the outline panel, the first line is a container for the entire batch of output. It's simply called Output. There might be a line below it called Log, which isn't going to be discussed in this book. The next line, *Frequencies*, is a heading that contains all the various kinds of output produced by the Frequencies procedure that you just ran. In order, they are:

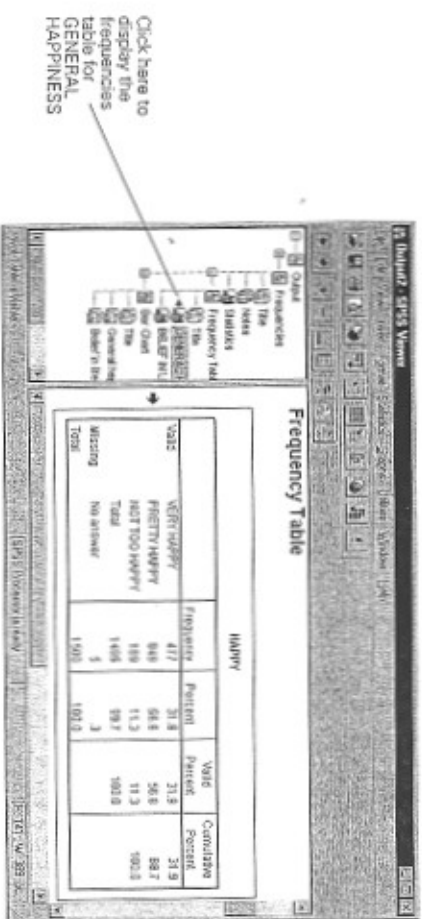
- Title: The title of the procedure, which is simply text.
- Notes: Notes are usually hidden, so this probably looks like a closed book in the outline pane.
- Statistics: This is a pivot table, which reports the number of cases, or "observations," that were processed by the Frequencies procedure. Most procedures start by producing such a table. The icon is an open book, so if you click it, the display pane will show you what it looks like.
- A frequency table for the first variable processed (*happy*). Frequency tables are discussed in Chapter 3. Note that the icon in the outline pane is labeled *GENERAL HAPPINESS*, which is a descriptive label that was assigned to the variable *happy* when the data file was set up.

- A frequency table for the next variable, *postlife*, whose icon is labeled *BELIEF IN LIFE AFTER DEATH* in the outline pane.
 - A bar chart for *happy*.
 - A bar chart for *postlife*.
- Let's see what these pivot tables and charts are like.

Pivot Tables

First, a pivot table. Most of SPSS's tabular and statistical output appears in the Viewer in the form of pivot tables.

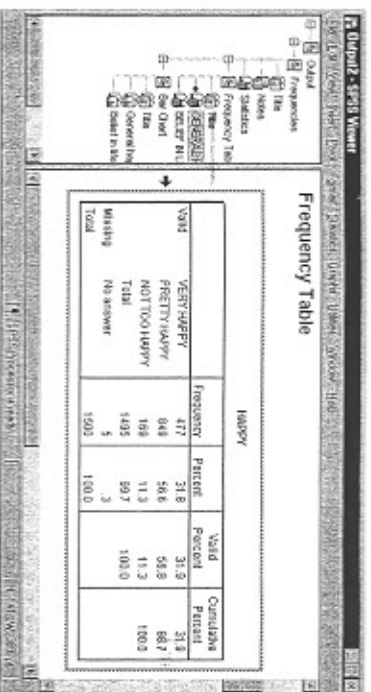
Figure 2.11 Pivot tables in the Viewer



► In the outline, click the icon for the pivot table labeled *GENERAL HAPPINESS*. The table instantly appears in the display pane, with an arrow pointing to it, as shown in Figure 2.11.

- ▶ Move the mouse over to the display pane and double-click on the table itself to indicate that you want to edit it.

Figure 2.12 An activated pivot table



Not a lot seems to happen in Figure 2.12. The pivot table is now surrounded by a cross-hatched line to indicate that it is active in the Pivot Table Editor. The SPSS toolbar vanishes, and if you watch carefully, the menu bar changes—there is now a Pivot menu.

- Double-clicking a pivot table less you edit it “in place”; that is, right where it sits in the display pane of the Viewer. If you need more room, select the pivot table by clicking once with the left mouse button, and from the menus choose:
 - Edit
 - SPSS Pivot Table Object ▶
 - Open...

This command opens the pivot table into a window of its own.

When you are editing a pivot table either way, you can change almost anything about it you want. If you don't like the label, just double-click it. It reappears as highlighted text. Type in the label the way you want it, perhaps *Happiness in General*, and click somewhere else to enter the new label. To change the font of the title or make it bold or italic, click the title and from the menus choose:

- Format
- Font...

Then choose a different font or a bold or italic style.

If you don't like the way numbers are displayed in the pivot table, make sure the Pivot Table Editor is active (by double-clicking the table in the display pane), and then either make a selection from the Format menu, or *right-click* one of the numbers in the table to pop up a context menu for it. Most of the things you might want to change can be found in either of these menus under Table Properties or Cell Properties. Check out Table Looks, too, to see how you can apply consistent sets of formatting to whole tables.

Changing fonts and styles and even the text of the labels in a table can make a big difference in the way the table looks. An SPSS pivot table lets you do much more than that, however. You can change the basic organization of the data presented in the table. The Pivot menu (which appears only when you have double-clicked a pivot table in the display frame to activate it) gives you access to powerful tools for reorganizing the table. To get a feel for these tools, activate a pivot table, and from the menus choose:

- Pivot
- Transpose Rows and Columns

The same information is displayed. The different codes or responses to the question, which were laid out vertically, are now laid out horizontally; the different types of statistical summaries, which were laid out horizontally, are now laid out vertically.

To see the pivot table as it was before, simply transpose the rows and columns again.

This example is a very simple pivot table. Multidimensional tables offer many more structural possibilities. You can explore those in the SPSS online Help system, or if you like, to see how things work you can build a complex table and start pivoting.

The Data Editor Window

Let's take a closer look at the Data Editor (see Figure 2.14). You can select it from the Window menu or simply click on it if any part of it is visible on your screen.

If you've ever used a spreadsheet, the Data Editor should look familiar. It's just an array of rows and columns. In the Data Editor, each row is a case, and each column is a variable. Cases and variables are fundamental concepts in data analysis. It's time we stopped to define them.

Figure 2.14 Data Editor window



Cases (rows) are the people who participate in a survey or experiment. (Another word often used is observation.) Actually, a case need not be a person. It can be anything. If you're doing experiments on rats, the case is the individual rat. If you're studying the beef content of hamburgers, each hamburger is a case. Generally speaking, the case is the unit for which you take measurements.

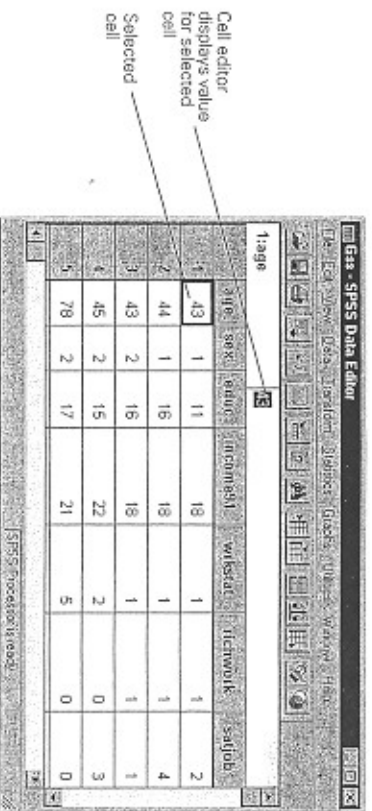
Variables (columns) are the different items of information you collect for your cases. Think about the way you conduct a survey. You ask each person for the same type of information: date of birth, sex, marital status, education, views on whatever subjects your survey is about. Each item for which you record an answer is known as a variable. The answer a particular person gives is known as the value for that variable. Year of birth is a variable; responses such as 1952 or 1899 are values for that variable.

The intersection of the row and the column is called a cell. Each cell holds the value of a particular case for a particular variable. You can edit values in the Data Editor, as follows:

- ▶ Click in one of the cells with the mouse.

The cell editor displays the value for the selected cell, as shown in Figure 2.15.

Figure 2.15 Data Editor with cell selected



- ▶ Type a number to replace the existing value and press **Enter**.

The new value appears in the cell editor as you type it, but the value in the cell is not updated until you press **Enter**.

- ▶ Change another value in the cell editor, but instead of pressing **Enter**, press **Esc**.

When you press **Esc** rather than **Enter**, the original value in the cell remains unchanged.