

Appendix

Reassurance & Help For the Nervous Novice

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1.1 Goals of this Appendix

Computer technology has permeated every phase of research and experimentation in the social and health sciences; and within related fields such as business and education, the computer has become an indispensable tool, from marketing research and consumer behavior to trend analysis and forecasting.

One of the first and primary uses of the computer for social scientists has been that of **data analysis**. Clearly, it is this single aspect of computing that has enabled social scientists to grasp the truly complex nature of human behavior and social organizations. It is not surprising, then, that as students of statistics, our focus is on the computer's ability to manage, process, and analyze data.

Nevertheless, social and health scientists have come to involve the computer in nearly every component of their research, from the literature search, to the implementation of experiments, and to the writing of the manuscript on a word processor.

There are several elementary goals in this appendix: we first review several basic ideas about the nature of research and different kinds of research. Then we discuss the critical role that computers play in this process. We give you just enough understanding of computer functioning so you can feel computer-literate. Next, we provide a general introduction to statistical software packages used for data analysis. Finally, we explain some of the terminology we use in providing instructions throughout the text and illustrate ways you can access help from within SPSS.

1.2 A Word of Reassurance

For most recent graduates of high school, computers are familiar friends. But for those who seldom use them, computers can be intimidating. The beginner is sometimes fearful of breaking the computer, making errors, ruining or losing important files, or just being confused. Whether or not you're a beginner, as you learn any new application of the computer, you will encounter your share of frustrating situations. In this book, for example, you will learn to use a statistical software package (we'll define that later), and initially, you may find all the steps necessary for creating, modifying, saving, and running files somewhat overwhelming.

In the long run, though, it's easier to learn about these procedures with the guidance of an instructor, classmates, and an instruction text than it is to learn them on your own. To be successful, you will need instruction (provided by your instructor and this book), computer facilities (provided by your institution), and determination (that's your contribution).

But be assured, the skills that you are about to learn here will serve as a valuable asset in many professional jobs and will be essential to successful graduate study in nearly all fields of health and science. If you're a bit apprehensive, you're normal. Just realize that as you begin to use the computer, you will not understand everything at once. So you need to follow two simple rules:

- When you are confused, ask a question. Most questions about computers have relatively simple answers, and you can save a lot of time by asking for help rather than by trying to solve problems on your own. Your instructor is the most obvious source of help, but many of your classmates who have had computing experience will also be glad to help (in fact, you'll find that some students like to demonstrate how much they know!). Your questions will most likely be those of a typical beginner, so don't worry about sounding "stupid."
- Take the time to jot down the answer because otherwise you will soon forget it.

1.3 Bivariate and Multivariate Correlational Research

In any field of science, research represents the way in which predictions are tested, theories are developed, and the knowledge base is expanded. Without research, science would not exist, and so understanding research methodology is the key to understanding how scientists come to know what they do. Only by understanding the research process can you grasp the power of the scientific method while also realizing the limitations (and possibility of errors) inherent in the process.

Scientists use a variety of methodologies in their pursuit of knowledge, and the social and behavioral sciences employ just about all of them. Some social science research is aimed primarily at description - the researcher may be interested in describing people's responses on a number of individual variables. For example, a political scientist may want to characterize attitudes toward the President and his social policies. Or a sociologist may want to describe the characteristics of a particular religious cult. In either case, the researcher would choose a variety of statistical measures, called univariate and multivariate procedures, to describe responses on each of these individual variables.

Typically these statistical measures would include indices of centrality (e.g., a mean or median) and dispersion (e.g., the range or standard deviation). Conceptually, these are not complex statistics; but computation - actually calculating them - may require tedious

(and error-prone) work. Who would want to calculate by hand (or even with a calculator) the mean response to four questions taken from 2,200 people, a sample size not uncommon in some areas of social science research?

Beyond simple description of individual variables, a great deal of research attempts to show that two variables are in some way related to one other. Often, this type of research is also descriptive in nature, but rather than describing single variables, it describes relationships between two or more variables. If the procedure attempts to relate just two variables at a time, we refer to the techniques as **bivariate**. For example, a sociologist might attempt to show that there is a relationship between one's attitudes about a President and one's income level. Or a nutritionist may demonstrate a correlation between one's daily sodium intake and blood pressure. In this type of research, the investigator takes measures on two variables and determines how strongly they are linked and, in some cases, whether they are positively or negatively related.

Common bivariate strategies with which you may be familiar include crosstabulation and correlation. As you may have already learned, although a researcher may be able to demonstrate a strong relationship between variables with correlational methodology, s/he is never justified in concluding causality between variables. Monthly sales of winter coats correlates negatively with the number of building construction injuries, yet obviously there is no causal connection between these two variables. Can you identify the mysterious unknown variable (sometimes called a lurking variable!) that explains the changes in both variables? (Hint: everybody talks about it, but no one ever does anything about it!)

Of course, the correlational approach to understanding behaviors, attitudes, or responses need not be limited to the investigation of just two variables at a time. One's blood pressure (or other measures of cardiovascular health) may be related to many variables besides sodium intake, including exercise, water intake, other dietary factors, family history, medications, and so on. Statistical procedures which determine how several variables might relate to one or more variables of interest (e.g., blood pressure, and perhaps other indices of cardiovascular health) are referred to as **multivariate** procedures. Such procedures can be conceptually quite complex, and computationally, they are nearly impossible to perform without a computer.

1.4 Experimental Research

A third research strategy, called the experimental method, represents the scientist's way of trying to establish a cause-effect relationship between two or more variables. In a classic experimental design, the researcher systematically manipulates or changes the variable presumed to be the *causal agent* (this variable is called the **independent variable**) and then determines whether there are corresponding changes in the variable under observation (the *presumed effect* called the **dependent variable**).

Consider the previous correlational example investigating the relationship between sodium intake and blood pressure. If we should in fact find a correlation between these variables, we might then be interested in trying to establish a causal link between them. The experimenter might randomly assign participants to groups that receive different amounts of daily sodium intake (this represents a way of manipulating or changing the value of the independent variable) and compare blood pressure (the dependent variable) across the groups after a specified period of time.

The experimenter would also attempt to control unwanted or extraneous variables (e.g., family history of cardiovascular disease) which might impact the dependent variable by holding these variables constant (e.g., equating the groups on family history). These are sometimes called **extraneous variables**, or if held constant, they may be called **control variables**. By using the experimental method involving manipulating and independent variable while controlling extraneous variables, the researcher could indeed establish a stronger causal connection between the two variables of interest, in this case, sodium intake and blood pressure. Examples of statistics used in experimental research include the *t*-test and Analysis of Variance (ANOVA).

Just as with correlational procedures, experimental methods need not be restricted to the investigation of two variables at a time. They too may be multivariate, in that the effects of several independent variables may be investigated on one or more dependent variables simultaneously. As you might expect, these procedures can become quite complex, and are invariably simplified with the aid of a computer.

The aforementioned distinctions among descriptive, correlational, and experimental methodologies are convenient categorizations for the beginning student, but in fact these clean distinctions are often lost in actual research situations. Some experimental designs are called quasi experimental because they use independent variables which cannot be manipulated (e.g., race, eye color, or IQ).

These designs are really more correlational than experimental in that they do not permit strong cause-effect conclusions. Some multivariate procedures combine correlational and experimental strategies (an example is a procedure called analysis of covariance). And indeed, some statistical experimental designs may be considered a variation of the "general linear model," one which is most easily conceptualized in terms of multiple regression, a correlational technique.

While this overlap in methodologies is certainly confusing to the beginning student of statistics, one point clearly emerges. Research strategies and ensuing statistical procedures come in all shapes, sizes, and variations. These more subtle distinctions, however, are not critical for the beginning student of science; nevertheless, when dealing with multivariate procedures, their understanding becomes more useful, and so we will reiterate some of these distinctions when we approach those topics.

1.5 So Where Do Statistics and Computers Fit In?

No matter what scientific methodology is used, the variables under investigation must always be measured in some way or another. And measurement generates numbers - or data - often much more data than we can readily interpret by quickly scanning the individual scores. In multivariate psychological or sociological studies, as many as 50-500 variables on over several hundred participants may be measured in a single study.

As a result, statistical tools have been devised to help the researcher summarize and interpret raw data. Statistical procedures not only provide a way of summarizing data into quick and manageable information (if you're in a hurry, knowing the mean IQ of 100 ninth graders is probably more meaningful than viewing all 100 IQ scores), but they also help the researcher make decisions about whether relationships between two or more variables, such as in our example with blood pressure and sodium intake, are actually real ones.

Just as statistical methods provide us with a tool for transforming data into manageable information, computers enable us to use statistical tools of greater complexity and with greater effectiveness. One can crush ice cubes, for example, by beating them with a rolling pin, or by using the blender--which would you prefer? Computers offer the same type of advantage when one is dealing with the processing of information. Why use a calculator, or rely solely on your own mental capabilities, when computers can achieve the same ends with a lot less agony? Many jobs that require several hours of computer time would require days, even months, of human time. In fact, some tasks, because of their complexity and length, simply could not be performed without the help of the computer.

But another advantage is that computers do not make mistakes. So called computer errors are usually nothing more than human errors (e.g., giving the wrong command, a mistake in the software program, etc.) that are attributed to the computer. In nearly all cases, the computer is merely doing what it has been instructed to do, rather than what it should have been instructed to do. Finally, the computer never tires or complains about tedious or repetitive tasks. Have you ever had to balance several months of check writing in your checkbook? As you know, even these relatively simple tasks can end up being rather arduous, especially if your balance and the bank's balance don't match. Just imagine how tedious the bank's job would be if its staff had to perform all the calculations for the checking accounts by hand, or with calculators!

So, while computers may be sophisticated pieces of machinery beyond your immediate comprehension (you don't really have to know what a chip is or how many bytes are on the hard disk in order to use a computer effectively), they function simply as tools that can help you do your job more easily, efficiently, and effectively. As with any tool, you, the apprentice, may need to understand some general characteristics of the tool in order to use it effectively, and, as you might expect, the more training you have, the easier it will be to master its use.

Now that you know that the computer is a tool, what does this tool work on? Is a computer really analogous to, say, a more conventional tool such as a table saw or blender? In a manner of speaking, yes. Just as these conventional tools can help transform raw material into finished products (wood into a desk, or vegetables into a puree), a computer starts with the raw material of data and produces a transformed product in the form of information. Although computers can also perform a wide range of other functions, the transformation of numbers (data) into information represents the traditional role of computers. This is exactly what you will be doing with the computer when you learn to use a statistical software package.

Consider the simple example of isolated numbers in Table 1.1, Column A. Here we have **raw data**, a series of numbers with no immediate meaning.

| A Score | B Week's High Temperatures |
|--------------------------|---|
| 71 | Monday: 71 degrees |
| 73 | Tuesday: 73 degrees |
| 68 | Wednesday: 68 degrees |
| 61 | Thursday: 61 degrees |
| 65 | Friday: 65 degrees |
| | Week's Average: 67.6 degrees |

But now consider the numbers under Column B. Now that headings have been added, the numbers organized, and the average computed, the numbers take on meaning - they have become **information**. In this case, data were processed (though not necessarily with a computer), with the result being information. Essentially, the computer performs a similar function: it takes a series of symbols and processes them so as to allow a meaningful interpretation.

1.6 Answers to Some Basic Questions about Computers

1.6a How do you make the computer do what you want?

Now that you know some basics about computers, let's talk about how we make the computer process data to produce information. Obviously, we need a way to communicate with the computer to make it do what we want. This basic process is accomplished with the use of software. Software is a program or collection of programs used to perform a function. A program is a set of specific instructions for the computer to execute.

A software package refers to the software program, along with other materials such as manuals. However you decide to use the computer, it is the software that enables you to do so. If you want to use the computer to keep track of various business accounts, you need software that allows you to do that. If you want to use the computer for word processing, or data analysis, or producing graphs, you need software that can be used for each different application. Our primary interest is in learning to use a software program for data analysis, but as part of that process, it is often necessary to learn to use other software systems (e.g., Windows) on your computer as well.

With the advent of the first statistical package for data analysis in the mid 1960's, the task of telling the computer what to do and how to do it became greatly simplified for the person interested in data processing.

1.6b What is a statistical software package?

A statistical software package consists of a series of pre-written and pre-tested programs that perform a number of specified operations on data. For example, the software package may have a program that calculates the mean and median for a set of data. Many statistical software packages are currently available.

Since these packages are merely large software programs, they are purchased separately from the computer and separately from each other. They are then stored on disk as part of the secondary or auxiliary memory of the main computer or server. Or if you're using a single-user (PC) system, they may be stored directly on the hard drive. The cost or annual subscription to these packages may range anywhere from several hundred to thousands of dollars.

Each statistical package has its own set of unique capabilities and commands. However, there are common elements to the logic behind almost all statistical packages, so as you learn one system, you'll also find it easier to work with other systems.

1.6c Overview and characteristics of statistical software packages

The number and types of statistical software packages that are available continue to grow each year. Often these packages are designed to target a particular audience, for example, researchers specifically in the social science researchers, or in biomedical fields, or public health, and so on. Statistical software packages share many common features. For example, most can transform data, create and merge data files, construct new variables, and perform various statistical computations such as means, correlations, t-tests and so on. But not all packages can perform all operations as easily or efficiently, so there may be times when the researcher finds it necessary to use a package with which s/he is not familiar.

A situation like this may arise when the user wants to perform a statistical analysis that is infrequently used by social scientists. Whereas one package may not be capable of

performing this analysis easily, another might have just that capability. But as we've mentioned, once you have learned the logic and rules of one statistical software package, it is usually quite easy to switch to another package.

As explained in Chapter 1, we will be working with the statistical package known as SPSS in this book. In the following, we will describe some of the terminology we will use as we explain the various procedures introduced in the text.

1.7 Terminology used in our instructions

1.7a Understanding our instructions for using SPSS: Drop-Down Menus

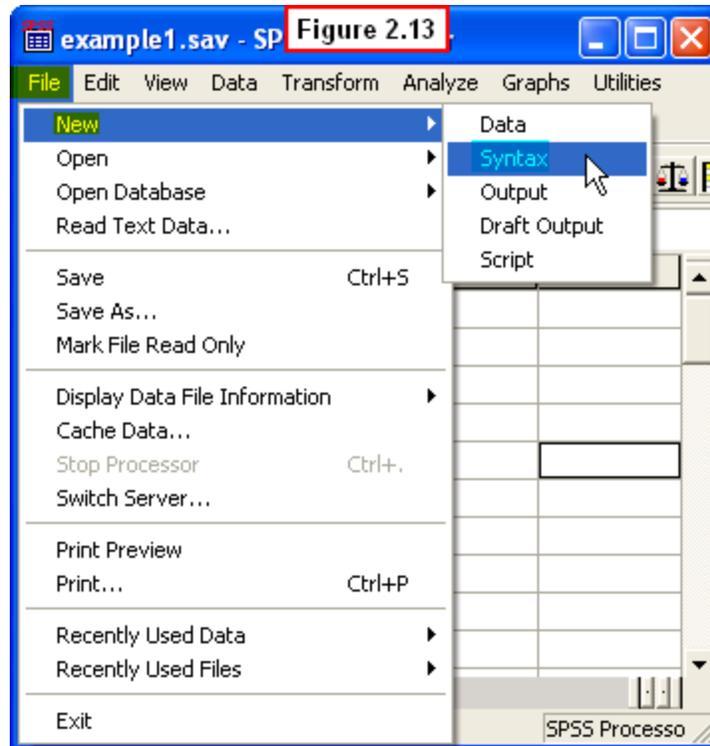
To make sure you understand our instructions in each chapter, note the procedure we will use to explain what you need to do as you use what will be called the **Point-and-Click Method** in the examples in subsequent chapters (another method of using SPSS, called the **Syntax Method**, is briefly introduced in Chapter 2).

The point-and-click method simply means that the user moves the onscreen cursor using the computer's mouse to point at various items, then to click an item to perform an operation.

For example, in Chapter 2, we provide the following instructions for opening a new Syntax Editor Window (don't worry about terms like Syntax Editor for now - they are explained in various chapters):

To open a new Syntax Editor Window, select **File, New, Syntax** from the drop-down menu at the top of the Data Editor Window.

We have reproduced Figure 2.13 below to illustrate the above commands:



First, note that **Data Editor Window** is one of three different kinds of windows that the SPSS program uses (more on these in Chapter 2), and is the current window open (or active) on your screen. The above statement is instructing you to open a new SPSS window (called the Syntax Editor Window).

Next, note that the phrase, **File, New, Syntax**, means that you are to use your computer's mouse to click on elements of this Data Editor window. Specifically, we mean that you should move your cursor to point to the word, **File**, at the top of the SPSS Data Editor Window and click the left mouse button. A **drop-down menu** will appear when you click on **File**. This is called a drop-down menu because it drops down from the top of the window when you click on File.

The next thing the phrase, **File, New, Syntax**, indicates is that after you have clicked on the word, **File**, you should then slide your cursor down until the word, **New**, is highlighted and click your left mouse button. When you do that, a new drop-down menu appears, and you should slide your cursor to the right and down until the word, **Syntax**, is highlighted. Last, you should click on the word, **Syntax**. After you have done these three things, the new Syntax Editor will open up in a new window.

Depending on your level of computer experience, the above may sound either very basic or very complicated. If you have worked with computers at all, we are sure that you have followed exactly the same sequence of steps before in, say, opening up a new document window in Microsoft Word. We just wanted to make sure that you understand that when we use a phrase such as select **File, New, Syntax**, that we are essentially

saying, "First select and click on 'File,' then select and click on 'New,' then select and click on 'Syntax'.

1.7b Navigating between windows when more than one window is open

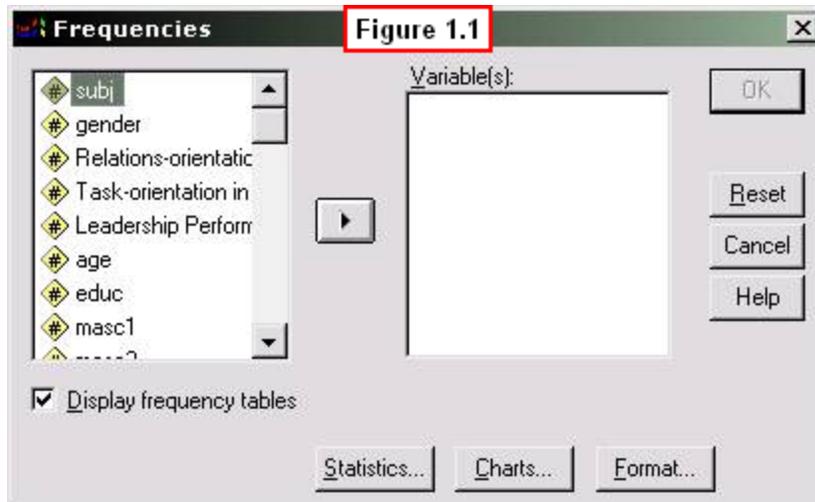
At various points in SPSS procedures, when you click on a selection, a new window will open up in front of the window from which you made your selection (e.g., in the above example, the new Syntax Editor Window opens up, but the original Data Editor Window stays open behind the new window on your computer screen). You will find that there are often several SPSS windows open at the same time.

All currently open windows will be represented with buttons along the **tool bar** at the bottom of your screen (this is the one that has the word, **Start**, on the lower left of your screen). You can navigate back and forth between various open windows by clicking on their respective buttons on the tool bar. Here also, if you have surfed the internet with multiple browser windows open, we are sure you have employed this procedure before.

An alternate way to navigate between windows is to simultaneously press the two keys, **Alt** and **Tab**, on your keyboard. This will cause a little window to open that shows active (i.e., open) windows. You can then select which window you want to be in front of the others by continuing to hold down the **Alt** key while simultaneously tapping the **Tab** key. The window that will be displayed in front will be highlighted, and releasing the **Tab** key will cause that window to move in front of the others.

1.8 Windows, windows, and more windows: Understanding our instructions for using SPSS Dialog Windows

When using the Point-and-Click Method in SPSS, frequently after clicking on a selection, a new window appears on top of the one from which the selection is made. These are called **pop-up dialog windows**, because they pop-up automatically after a selection is made, and because they require some kind of dialog between the user and the software program. This dialog involves the user providing some input that is requested by the program before a procedure can be executed (literally, you have to tell the program what you want it to do by selecting one or more of a list of options the program shows in the pop-up dialog window). An example of such a window is shown in Figure 1.1.



This dialog window requests the user to select which variables s/he wants SPSS to use when it performs the **Frequencies** procedure. In the left panel (sometimes called a pane) of this window is a list of all the variables in the data file that is currently open in SPSS. The right pane is a blank panel labeled **Variable(s):** waiting for input from the user. The user tells SPSS which variables to use in a procedure by moving the desired variables from the left to the right panel.

The little rectangular boxes in this window are actually called **buttons**, because "pushing" them (i.e., clicking on them) causes some action to be performed (just like pushing your power button on your computer causes the action of booting up to be performed). One such button is the **right-arrow** button between the two panels. Clicking it causes the variable that is highlighted in the left panel to be moved over to the empty **Variable(s):** panel on the right. The other buttons in this dialog window (e.g., **OK**, **Reset**, **Cancel** and **Help**) perform the functions indicated by their labels (e.g., clicking on the **Reset** button causes the dialog window to be reset to its original settings).

Note that the three buttons at the bottom of this window all have three dots (...) following their labels. This indicates that if you click on one of these buttons, then a new pop-up dialog window will open requesting additional input. For example, clicking on the **Statistics...** button causes a new pop-up dialog window to appear requesting you to indicate which statistics you want SPSS to compute on the selected variables.

Thus, as we have said, in navigating through a procedure using the Point-and-Click Method, you will often have multiple windows open simultaneously. However, for pop-up dialog windows, once you have made your selections and click the **OK** (or **Continue**) button, the dialogue window automatically closes and returns you to the previous window.

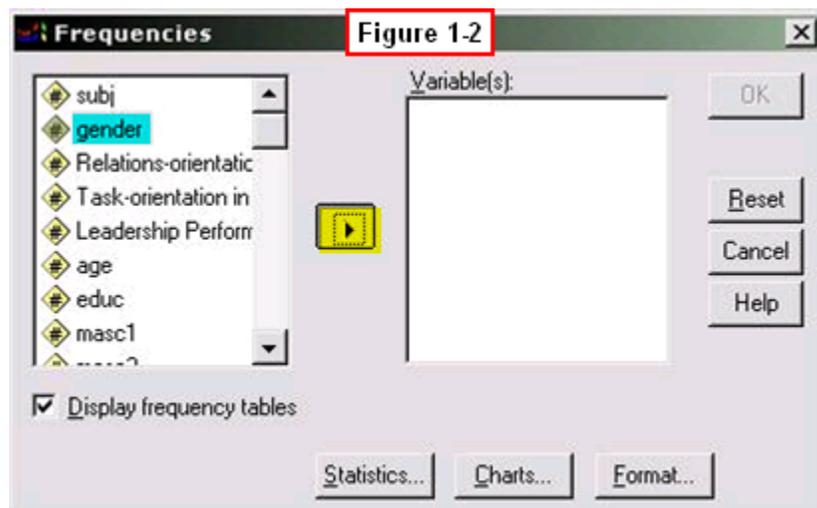
All of the terms we have just described may seem confusing, but once you work with a pop-up dialog window, you will see that the steps are pretty straightforward. In fact, you have undoubtedly worked with pop-up dialog window in other software programs (such

as in choosing **Options** in a computer game or responding to input requested on an internet site) – you just didn't know they were called pop-up dialog windows!

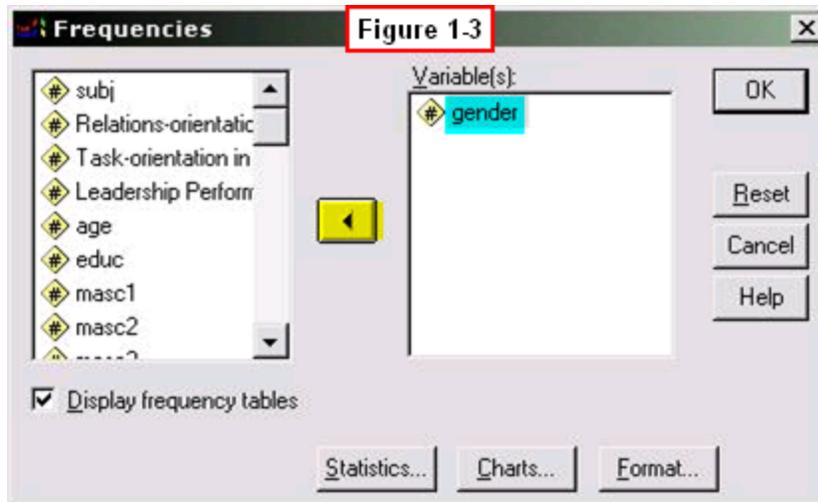
We are simply introducing the terminology and procedures here so that it will be easier for you to understand our instructions in the text chapters. And again, the procedures are fairly intuitive. To return to our example **Frequencies** pop-up dialog window, your input to this dialog request would involve clicking on the variables that you want to select from the left panel and moving them over to the right panel to be analyzed.

As an example, in one chapter we will ask you to select **gender** from the list in the left panel shown in Figure 1.1 in order to have SPSS construct a frequency table of scores on this variable. To do this, we will say: "Highlight **gender** in the left panel and move it to the right panel by clicking the right-arrow button in between the panels."

Figure 1.2 shows what the window would look like after clicking on **gender** to highlight (or select) it, then clicking on the "right-arrow" button in the middle.



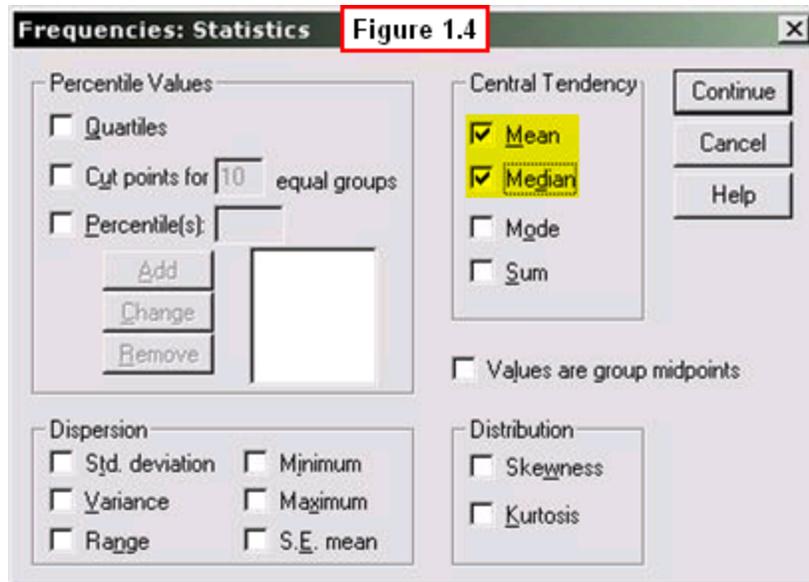
After you have highlighted **gender** and clicked on the right-arrow button, the window will change to look like that shown in Figure 1.3, which now shows **gender** in the right **Variable(s)** panel.



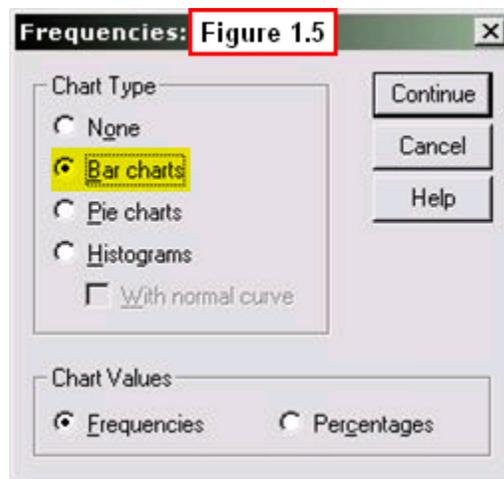
Note that the previous **right-arrow** button in the middle has changed to a **left-arrow** button in Figure 1.3. This is because **gender** is still highlighted in the right panel, and SPSS allows you to move it back to the left panel if you decide not to include it in the requested procedure. Clicking the left-arrow button would move the highlighted **gender** back to the left panel. If instead, you clicked on **subj** in the left panel, then the button would once again change to a right-arrow to allow you to also move **subj** to the right panel.

A few more terms with examples are provided next. Again, most of these will look familiar to you if you have spent much time on the internet filling out forms – we are simply defining the terms used for these elements now so that you will understand them when we use them in book chapters.

Some pop-up dialog windows ask you to click on **Check boxes** to make selections as inputs. These are blank little white boxes, and a **check mark** appears in the box when clicked. An example of this is shown in Figure 1.4, where we have selected the statistics, **Mean** and **Median**, as the measures of Central Tendency we want SPSS to compute when it performs the Frequencies procedure.



Check boxes are employed by SPSS to allow the user to select more than one item (e.g., both the Mean and Median have been selected in Figure 1.4). Sometimes, however, SPSS requires the user to select only one option from a list of alternatives. In these instances, SPSS employs **Radio Buttons**. Radio buttons are similar to check boxes, except they are blank white circles instead of boxes (see Figure 1.5).

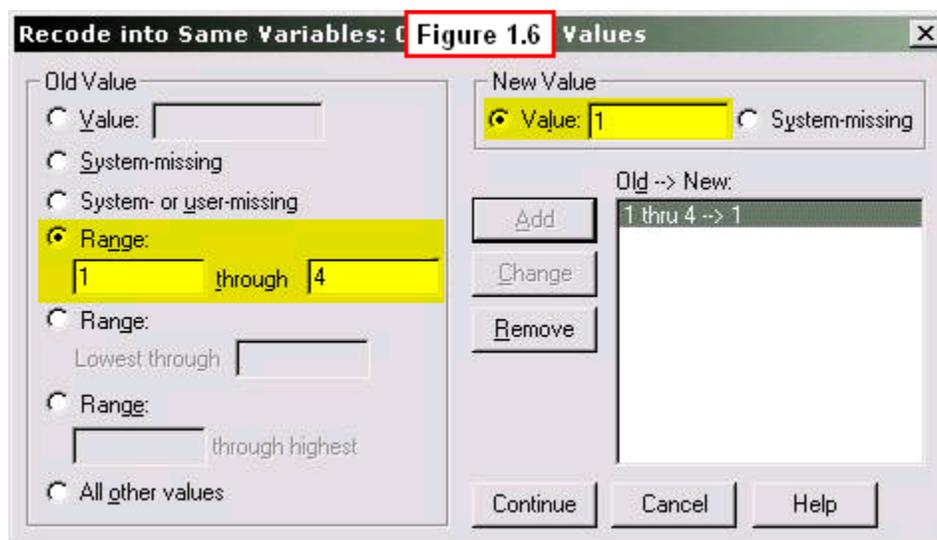


But while the user can click on multiple check boxes, with radio buttons, only one radio button can be selected at any one time in a given panel. For example, in the **Chart Type** panel of Figure 1.5, the **Bar charts** radio button has been selected (a bold dot now appears in the button labeled Bar charts). Once one button has been selected in this panel, if the user clicks on another radio button (e.g., **None**), the new button becomes highlighted, and the previous button returns to a blank white circle.

Thus, you must choose which one selection you want with radio buttons - this should make sense, since SPSS could not create bar charts and no charts at the same time!

Note that the same applies to the **Chart Values** panel at the bottom of the pop-up dialog window - the user must decide whether to select the **Frequencies** radio button or the **Percentages** radio button - both cannot be selected at the same time. The term radio button is used because it is much like pushing buttons on your car's radio - you can only tune in one station at a time!

A final type of pop-up dialogue window used in SPSS involves **text entry boxes** for input. That is, instead of clicking on a radio button or check box to make a selection, the user must actually type in the required information. Here also, you are most likely familiar with these from completing online forms (e.g., where you have to type in your e-mail address into a blank box). In most cases, the "text" that we will enter into these boxes will consist of digits, as shown in Figure 1.6.



In the **Old Value** panel on the left of the **Recode into Same Variables:** pop-up dialog window shown in Figure 1.6, we clicked on the **Range:** radio button that originally had blank **text entry boxes** below it. We then typed in the digits **1** and **4** to indicate this is the range of old values to be recoded into the **New Value** panel in the upper right. We typed a **1** in this text entry box to indicate that all scores from 1-4 (the old values) should be recoded to 1 (the new value).

Don't worry if you don't understand the Recode procedure described above - it will be explained in much greater detail in Chapter 5. All that is important now is that you understand that when we use the term, text entry box, this indicates that you will have to type something into the box.

1.9 Final Reassurances & The SPSS Help Features

If you've worked with computers before, much of what has been presented here has been review. But if your use of computers has been limited, you may feel overwhelmed by all the information. Three points you should keep in mind:

- It takes time to learn about the many different aspects of computing.
- As you gain practical experience at the computer, you will have a better framework for the ideas and information that we have been discussing.
- The startup time invested in this learning will yield great dividends in time and effort in the future.

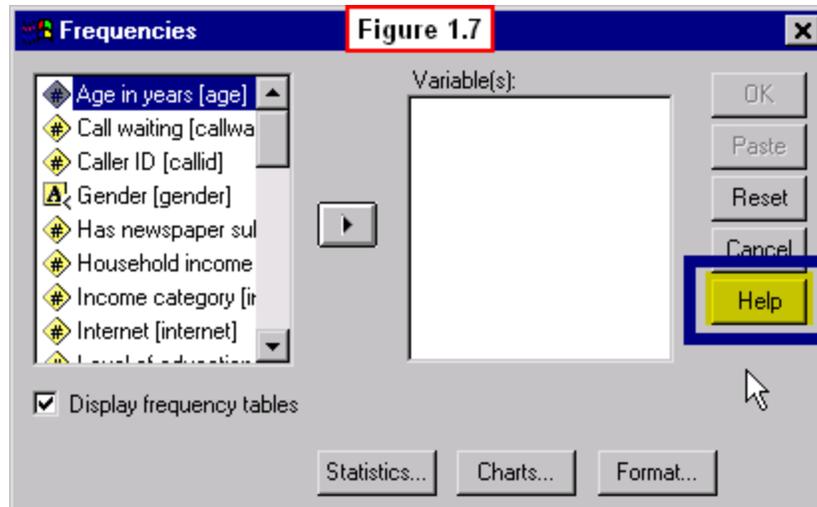
In the meantime, you may want to review the terms in this chapter that are bold-faced, or reread sections after your first session at the computer terminal. You may be surprised to learn how easy it is to use the computer for the purpose of analyzing data. It's merely a matter of acquiring some basic rules, of becoming accustomed to computer jargon, and of overcoming the anxiety that comes with having to learn a new software application that you initially don't understand. Be assured, this anxiety will diminish as you gain hands-on experience.

Perhaps most important of all, don't worry about losing files, making errors, or doing other things that might alter or "ruin" your file. This book is set up so that no catastrophes can occur - every ruined or lost file can be re-established in a matter of minutes, every problem can be easily fixed, and every procedure can be redone if it is not completed correctly the first time. Of course, you will save time and effort if you follow the directions in the chapters carefully.

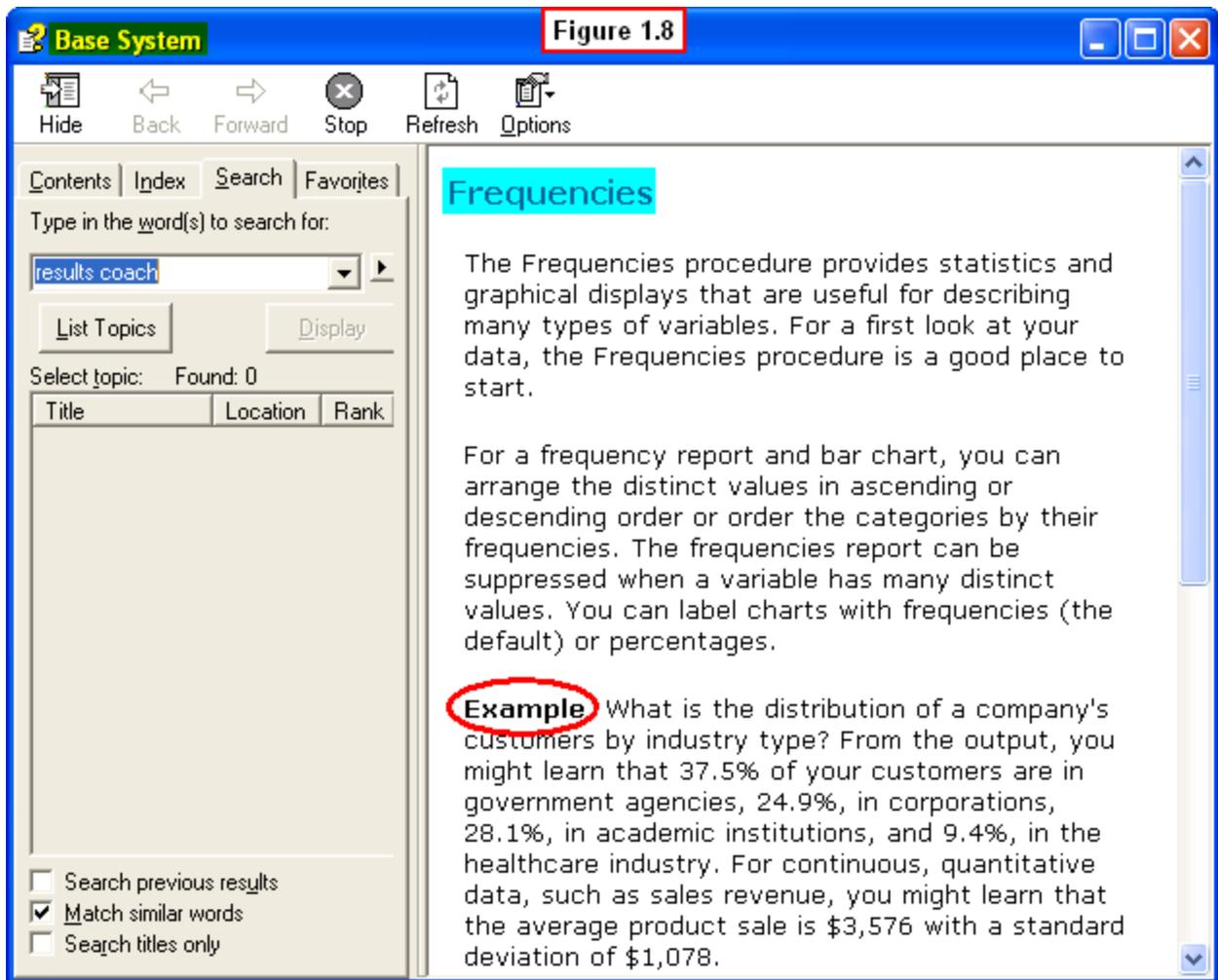
But even though it may take substantial time to learn the procedures the first time around, if you make major errors, you can typically retrace your steps and re-establish your starting point within a matter of minutes. In the remainder of this appendix, we introduce various ways and places you can access the many SPSS help features from within the program.

1.9a Dialog window help

Although we have endeavored to fully explain all important features of dialog windows for the procedures introduced in this text, there may be times when you forget or become confused when a new dialog window appears. Or you may be just curious about options that we do not discuss. You can obtain more information simply by clicking the Help button (Figure 1.7).



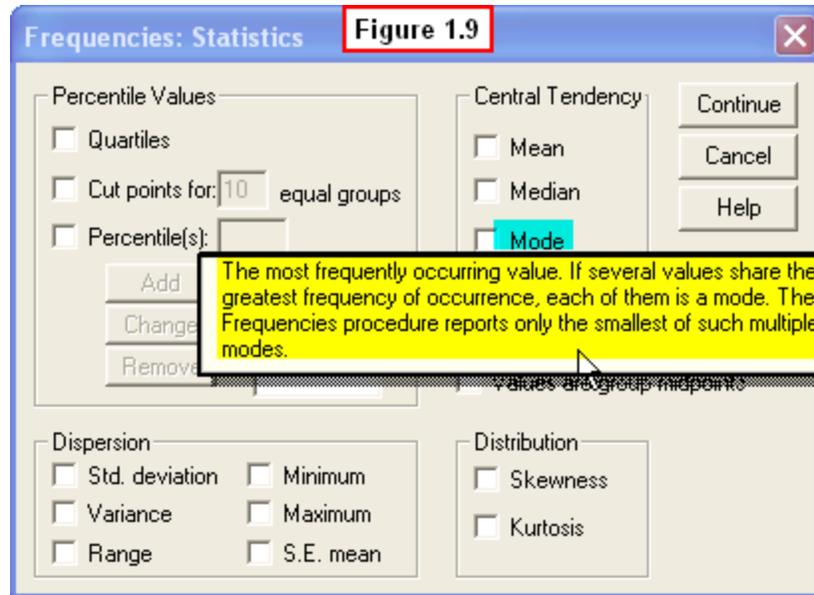
Clicking the Help button opens up a new Base System Help window providing general information about the procedure in the dialog window, along with an example and other helpful information. Figure 1.8 shows the window that opens when the Help button in Figure 1.7 is clicked.



1.9b Context Menu help

You can quickly obtain help about any item in a dialog box (and generally anywhere else in SPSS) by moving your mouse on top of the item and pressing the right button on your mouse (also referred to as **right-clicking** on the item). This causes a **Context Menu** to be activated, so-called because they provide help from anywhere in the context of the window.

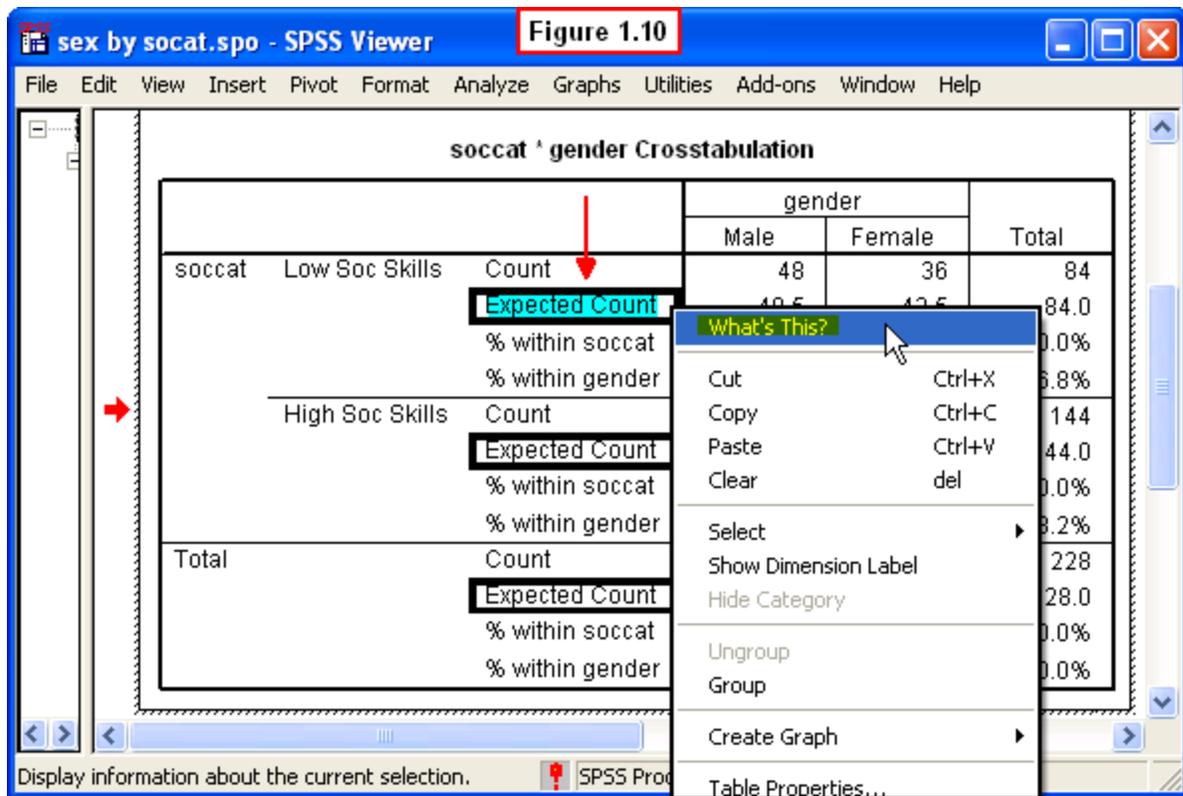
In Figure 1.9 the user has right-clicked on the word, *Mode*, to obtain help. A white text box appears with an explanation of the item that has been selected. Again, context menu help is available in most places in SPSS.



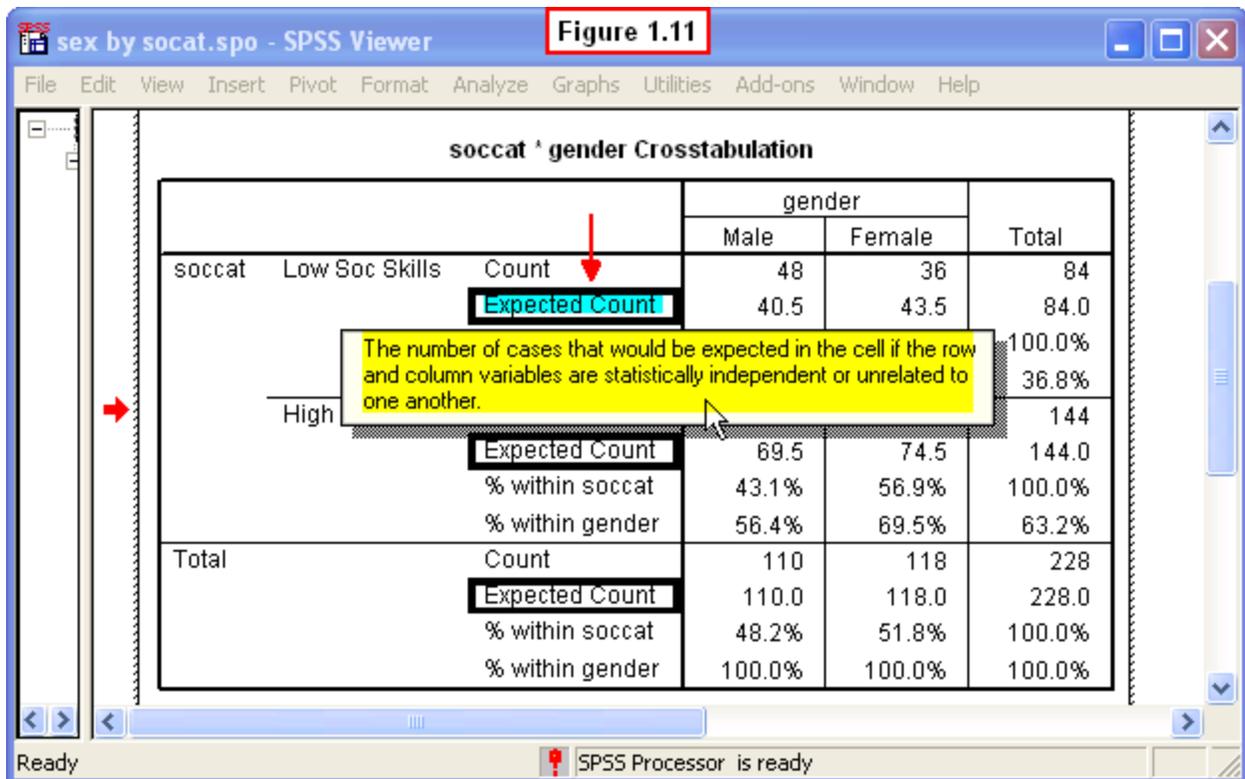
- **Note about Left and Right Mouse Button Clicks:** in the video below, **red circles** around the cursor indicate a **left-click**, while **blue circles** indicate a **right-click** of the mouse.

1.9c Help within output tables

SPSS uses yet another type of window to display results of statistical analyses (called an **SPSS Viewer** window). If you are confused about any item in the output file, you can use the context menu help in this window also. Figure 1.10 gives an example of such context help menu in an output file of the results of a crosstabulation procedure. The user has right-clicked the term, *Expected Count*, then left-clicked *What's this?*



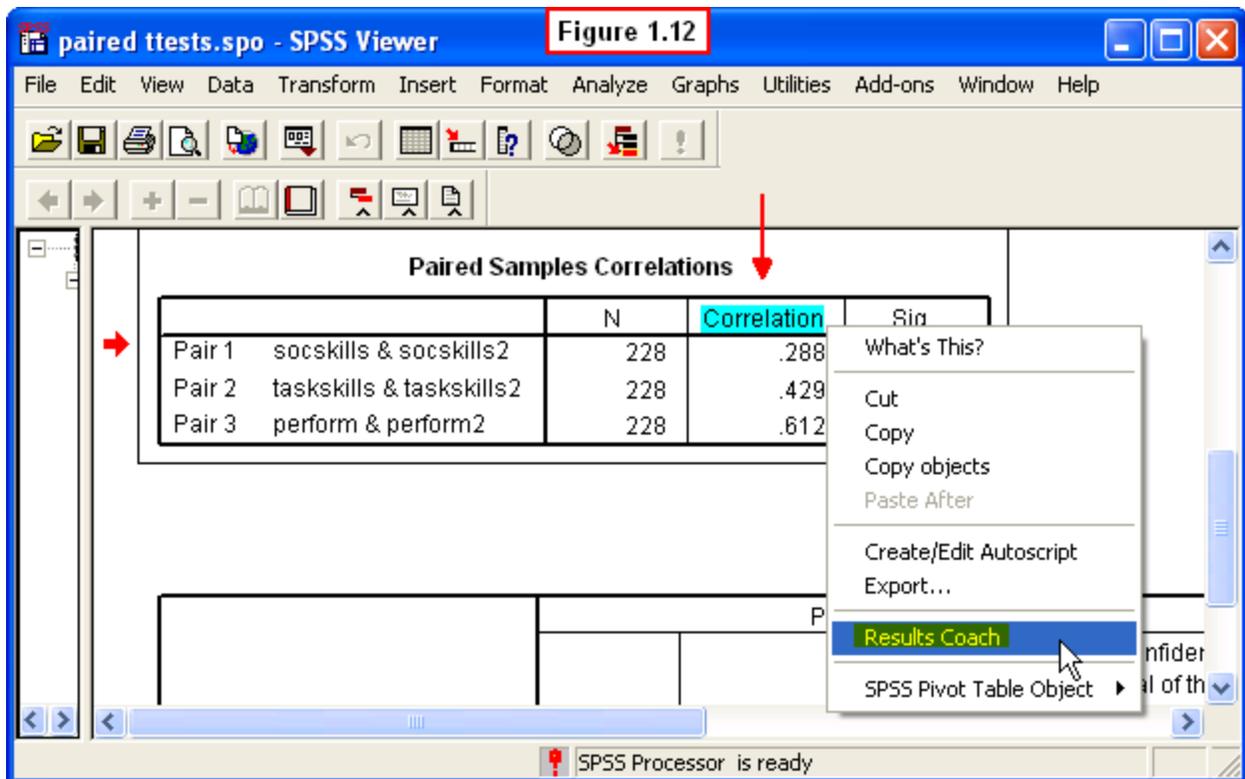
A text box appears giving an explanation of the term *Expected Count* (Figure 1.11). These boxes can be very helpful if you are having trouble understanding any part of the output of an analysis.



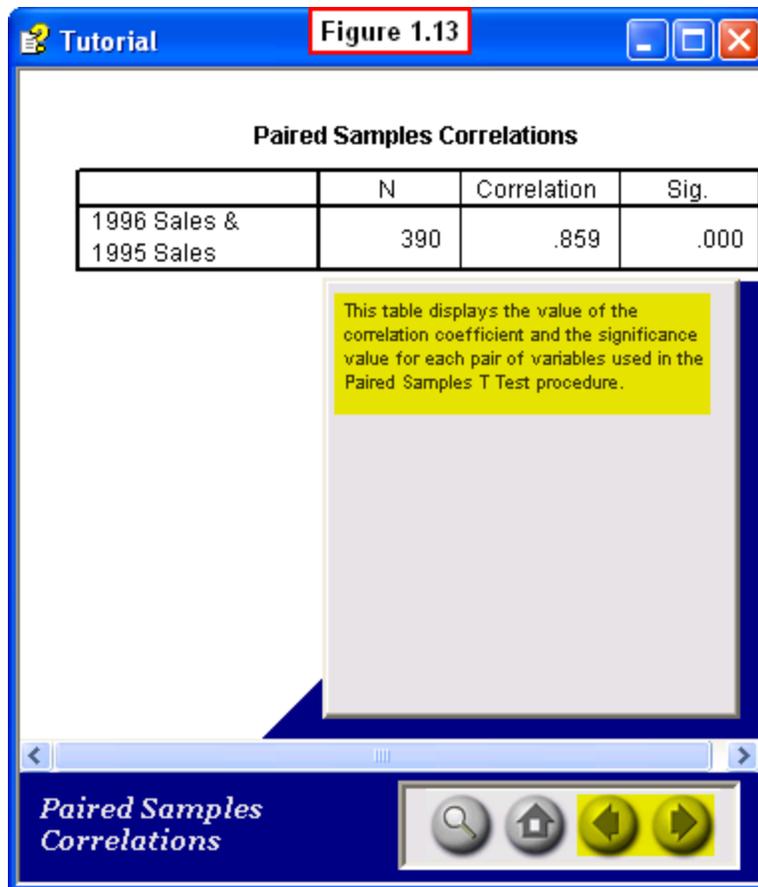
- **Note about Left and Right Mouse Button Clicks:** in the video below, **red circles** around the cursor indicate a **left-click**, while **blue circles** indicate a **right-click** of the mouse.

1.9d The Results Coach

SPSS provides coaches that take you step-by-step through the process of interpreting results or deciding which statistical analyses to choose by providing helpful examples. In Figure 1.12, the user has right-clicked the word, *Correlation*, and left-clicked the **Results Coach** option to get help with this term.



An SPSS Tutorial window will then appear (Figure 1.13). Clicking the right-arrow button in this window will take the reader through a series of explanations of this statistic. As we have mentioned, in this text we provide detailed explanations of outputs from the examples used, but the Results Coach is always there if you forget or get confused.

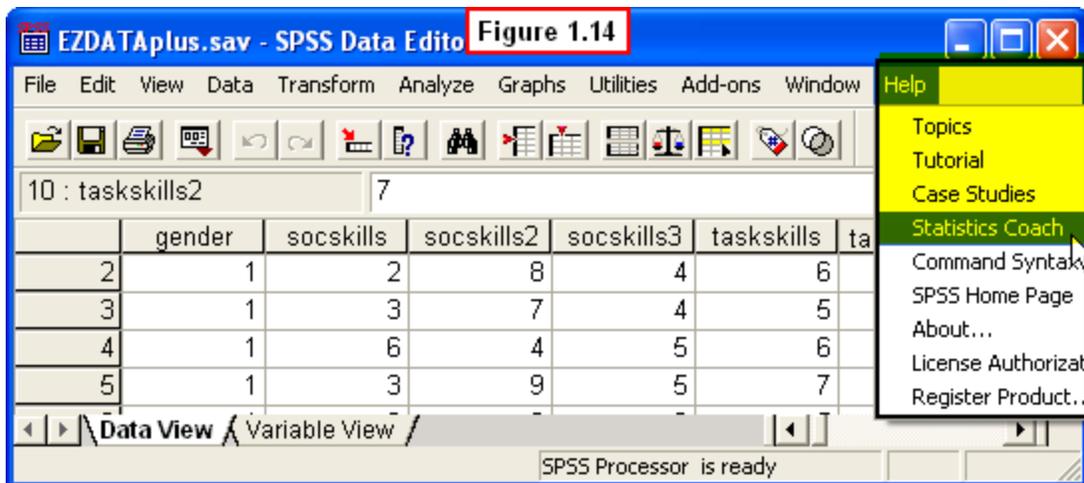


- **Note about Left and Right Mouse Button Clicks:** in the video below, **red circles** around the cursor indicate a **left-click**, while **blue circles** indicate a **right-click** of the mouse.

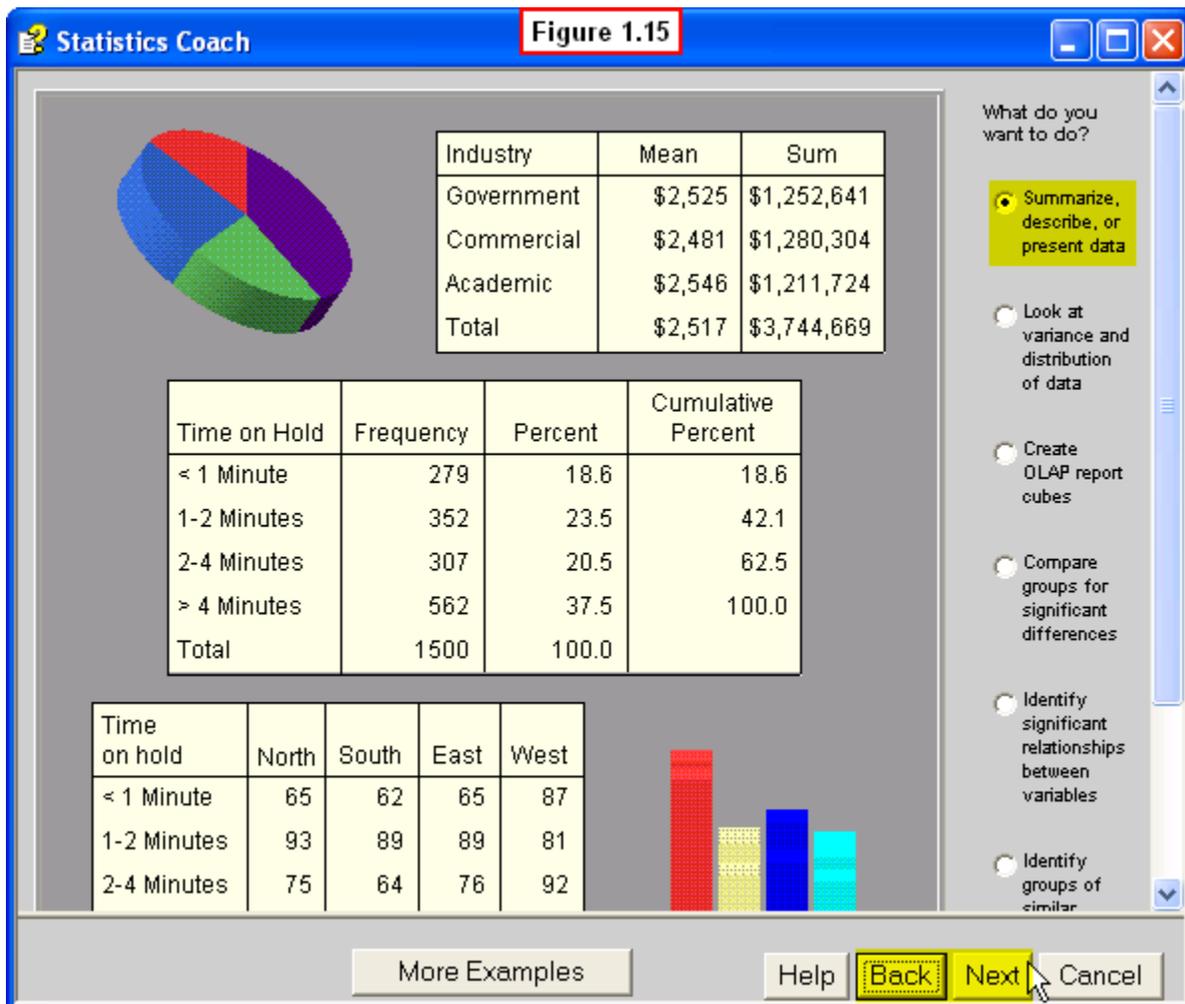
1.9e The Statistics Coach

In all the examples in this book, we specify what analyses to run. But if you are curious or have questions about what statistical procedure is appropriate to use on some future data set, you can also use the **Statistics Coach**.

Figure 1.14 shows how to access the Statistics Coach. The user has left-clicked the **Help** drop-down menu in the Data Editor window, then clicked on the **Statistics Coach** menu option.



An SPSS Help dialog window then appears (Figure 1.15) In this figure, the user has selected *Summarize, describe...* in response to the question "What do you want to do?"



1.10 Exercise

Take some time to make certain you understand the terms listed below. If you need to, refer back to the section of the appendix where the concept is discussed.

Bivariate - 1.3

Buttons - 1.8

Check Boxes - 1.8

Context Menu Help - 1.9b

Correlation - 1.3

Data - 1.5

Descriptive - 1.3

Dialog Windows - 1.8

Dialog Window Help - 1.9a

Drop-Down Menus - 1.7

Experimental Method - 1.4

Information - 1.5

Multivariate - 1.3

Output Table Help - 1.9c

Radio Buttons - 1.8

Results Coach - 1.9d

Software - 1.6

Statistical Package - 1.6

Statistics Coach - 1.9e

Text Entry Boxes - 1.8

Univariate - 1.3