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Appendix C:
Supplemental Instructional Materials

Reminder on Reading Tables

- Read the title carefully. (A good title tells exactly what is in the table.)
- Look for headnotes or other explanations of the title.
- Look for any footnotes. Do they apply to the whole table? If not, to what part?
- Evaluate the source of the data. Is it likely to be reliable? Is it up to date?
- Study the column and row headings. What do they mean?
- Look for any overall average or total for the whole table. If the data are percentages, understand how they add to 100 percent.
- Describe some of the numbers in words. (For example, [Number] percent of [100%] are [row or column heading].) Sometimes population numbers are given in thousands, so you need to remember that that means millions.
- Look for patterns. What is the range? (For example, what are the largest and smallest percents?). Are most cases concentrated in one category, or are they more evenly spread out?
- Summarize the main points of the table in words, using figures from the table as examples.

Table C1 -- Marital Status* by Sex, March 1995
***Persons age 18 and over**

Marital Status	Women	Men
Married	59.2	62.7
Widowed	11.1	2.5
Divorced	10.3	8.0
Never Married	19.4	26.8
Total (percent)	100.0	100.0
Total (in thousands)	99,588	92,008

Source: Bureau of the Census. 1996. *Statistical Abstract of the United States:* 1996. Washington

DC: U. S. Government Printing Office. P.55

Sometimes it is not obvious how a table adds to 100%. (See Table C2.) A quick examination shows that it does not add to 100% down or across. (In 1890, 84% male + 18% female would be more than 100%.) To save space, this chart omits the percent of people who are not in the labor force. In 1890, the 84% of the males who were in the labor force plus the 16% of the males who were not in the labor force equals 100%. Similarly, 18% of the females were in the labor force and the rest of them were not in the labor force in 1890.

Table C2 -- Labor Force Participation Rate* by Sex: 1890-1995

*Percent of the noninstitutionalized population who are employed or who are unemployed and looked for work in the last four weeks. (Pre-1947 figures include those age 14 and over, later figures are age 16 and over).

Year	Male	Female
1890	84.3	18.2
1900	85.7	20.0
1920	84.6	22.7
1930	82.1	23.6
1940	82.5	27.9
1950	86.8	33.9
1955	86.2	35.7
1960	84.0	37.8
1965	81.5	39.3
1970	80.6	43.4
1975	78.4	46.4
1980	77.4	51.5
1985	76.3	54.5
1990	76.4	57.5
1995	75.0	58.9

Source: U.S. Bureau of the Census. 1976. *Historical Statistics of the United*

States: Colonial Times to 1970. (Bicentennial Ed.), Part I (1975), Washington DC: U..S. Government Printing Office, pp 131-32; U.S. Bureau of the Census. 1992. *Statistical Abstract of the United States: 1992*. Washington DC: U.S. Government Printing Office, p 383; U.S. Bureau of the Census. 1996. S*tatistical Abstract of the United States: 1996.*Washington DC: U.S. Government Printing Office, p.393.

Reminder and Exercises

Frequency and Percent Distributions, Figures and Graphs

Frequency and percent distributions use only a few numbers to describe data.

Frequency distributions use charts to list the range of possible values and the number of cases in each.

Percent distributions convert the frequencies to percentages. (Remember that the percent is the number per hundred, and the proportion is the part compared to the whole. You may want to review basic math--fractions, decimals, and percents, perhaps *Overcoming Math Anxiety* by Sheila Tobias.)

Exercise 1.a.

Construct a percent distribution using the information from public opinion polls on women's issues described in Chapter 2. Start with the percent who disapproved of a married woman working if her husband could support her.

Tables should have clear labels and definitions, so start your table with a title at the top that describes exactly what it is. Label the columns and rows carefully. Give the source of the data at the bottom of the table using one of the standard reference formats such as those recommended by the American Sociological Association or the American Psychological Association. (Note: Cite the source you used. Give the original source, e.g., Yankelovich, only if you actually looked it up and copied the figures from it. For this exercise, your source is Nelson, Elizabeth and Ed Nelson. 1997. *California Opinions on Women's Issues: 1985-1995.* Unpublished manuscript.

Figures and Graphs

We can present the same information visually as figures or graphs.

Bar graphs and Histograms use rectangles to show the number or percent in each interval. The intervals are marked along the horizontal axis (the bottom) and the frequencies or percents along the vertical axis (the left side), so zero for both scales is in the lower-left corner.

Histograms are used with ordered, discrete or continuous data. Since age in years can be ordered and is continuous from birth to old age, we would put the bars right next to each other.

Bar graphs use separate rectangles for each unit of nonordered, discrete data. For example, marital status--married or single--cannot be quantified or ordered, so we would use a separate bar for each category.

Frequency Polygons use dots at the midpoints of each interval in a similar way. Notice that it would make sense to use a frequency polygon with ordered data such as age but not for nonordered data such as race.

Exercise 1.b.

Construct a histogram or bar chart using the same data as exercise 1.a. Remember that frequencies or percents are usually marked along the left side of the chart with the smallest numbers at the bottom and the values on the base start with the lowest values and go from left to right so both scales use the same zero.

The overall impression produced by a graph depends on the ratio of the measurements of the horizontal and vertical scales. It is important to communicate these quantitative relationships accurately. Experiment with different scales on scratch paper to find one that seems to be a useful way to illustrate your data. Connect the midpoints of the bars so you can see a frequency polygon. Again, be sure to use clear labels. Usually the title of a figure or graph (called the legend) is on the bottom. Include the source of your data in American Sociological Association or American Psychological Association style.

Example with Frequency Distribution, Percent Distribution, Dummy Table, and Crosstab

Frequency and percent distributions use a few numbers to describe the data. **Frequency distributions** use charts to list the range of possible values and the number of cases in each category. **Percent distributions** are similar but convert the numbers to percentages. (Remember that the percent is the number per hundred, and the proportion is the part compared to the whole. You may want to review

basic math--fractions, decimals, and percents, perhaps *Overcoming Math Anxiety* by Sheila Tobias.) With the percent distribution, we can make comparisons even when the actual numbers are different.

This example comes from a study of opinions and behavior of California State University Students in 1994. The question related to the students' knowledge of pregnancy facts.

Table C3 -- Frequency and Percent Distribution of CSU Students' Responses to "At What Time in Her Monthly Cycle is a Woman Most Likely to become Pregnant?"

	Number	**Percent**
Beginning	545	27.0
Middle	1,113	55.1
End	361	17.9
Total	**2,019**	**100.0**

Source: Survey of California State University Students conducted by James Ross (1994)

The percentages show that over half (55%) of the CSU students answered the question correctly. (A woman is most fertile in the middle of the monthly cycle.)

Crosstabulation

To **analyze** means to break something down into its component parts and study them in order to gain a better understanding of the whole. We can look at these responses in more detail to gain a better understanding of students' knowledge of this rather important part of human life. **Crosstabulation** uses tables showing the number and percentage of cases in each combination of categories of the data. We might expect that students would have better understanding of health information related to their own bodies, so female students might be more likely than the male students to answer correctly. So, we hypothesize that females will be more likely to answer "middle." We can make a dummy table showing what we would expect is the hypothesis were supported by the data.

Dummy Table C4 -- Frequency and Percent Distribution of CSU Students' Responses to "At What Time in Her Monthly Cycle is a Woman Most Likely to Become Pregnant?"

	Male		Female
Beginning	a	>	b
Middle	c	<	d
End	e	>	f

The next table is a crosstabulation of the responses by sex, so we can look at similarities and differences in the responses of males and females. To crosstabulate by sex, we construct separate frequency and percent distributions for each sex, calculating the percentages down so we can compare across.

Table C5 -- Frequency and Percent Distribution of CSU Students' Responses to "At What Time in Her Monthly Cycle is a Woman Most Likely to Become Pregnant?" by Sex

	Male		**Female**		**Total**	
	Number	Percent	Number	Percent	Number	Percent
Beginning	279	30.8	266	23.9	545	27.0
Middle	448	49.4	665	59.7	1,113	55.1
End	179	19.8	182	16.4	361	17.9
Total	906	100.0	1,113	100.0	2,019	100.0

Source: Survey of California State University students conducted by James Ross (1994)

Women students were more likely than male students to answer correctly (60% of the women compared to 50% of the men answered that a woman is most likely to become pregnant in the middle of her monthly cycle).
