

# 11 Reporting Findings in the Social Sciences

The social sciences are disciplines based on empirical observations. Researchers in these disciplines collect data and report them to others. Each discipline has methods peculiar to itself and differs from the others in the problems it identifies as within its domain. Despite these differences, however, each discipline has a common commitment to collecting information in an objective, scientific manner. This chapter will deal with the conventions that govern the ways in which you are expected to write up your data.

Here are some examples of assignments that require you to report findings:

- How fast is the world population increasing and what will it be in the year 2100? Or 2200?
- What is a desirable growth rate for the economy and how can that rate best be achieved?
- How does a “fence” avoid arrest for possession of stolen goods?
- What is the special significance of gift giving in Japanese society?
- Do handicapped children learn better in special classes or when integrated in regular classes?
- Will the recently launched advertising campaign for Brand X significantly boost sales?

When you write papers to answer questions like these, you must use the skills described in other chapters as well as the new ones described here. But it is not the purpose of this chapter to teach you how to collect data—you will learn that in your social science course. The focus of this chapter will be on how you write your report of your findings.

## Getting started

Reports of findings follow a pattern that is similar for all the social science disciplines. According to the pattern, a paper has four parts: an introduction, a description of the methods used in gathering data, a description

of the findings, and a statement of the conclusions. Disciplines vary in the degree to which they expect the pattern to be explicit and rigidly adhered to. In fact, experimental psychology requires you to follow the more formalized natural science procedures explained in chapter 14. Some disciplines require that you name each section with a specific subheading. In other disciplines there is a general implicit expectation that the substance of the four parts should be in your paper, but the pattern need not always be explicit. In all cases you will be expected to introduce your paper, describe your methods and findings, and draw some conclusions.

By reading the appropriate professional journals you can learn the degree of formality required for your paper, but you should not be misled by these journals. What appears in them is the final version of a paper, so its structure is that of a final product. The order in which the various elements are presented in the paper need not be the same as the way in which they were initially drafted. Very few social scientists begin writing with a clearly conceived introduction and then move serially through the writing of the paper to the results and the conclusion. Instead, they know generally what kinds of information each section will contain. Knowledge of this general scheme frees them from trying to write the whole report from top to bottom. In fact, professional social scientists often start in the middle. So although we will now describe each part in the order in which it is supposed to appear in the final paper, you should not assume that you must follow this sequence in your own writing process. But whatever order you follow in the composition of your paper, you need to know the purpose for each part of the pattern.

The *introduction* of a report is supposed to accomplish two goals. First, it states the question to which the paper is intended to be the answer. This statement of the question is necessary in the introduction to any paper of a problem-solution format. The second goal is more specific to a social science paper: to show how the question is relevant and important in the context of the social science for which the paper is written. You need to show why a psychologist, a sociologist, or an economist specifically should be concerned with the question. We have earlier discussed ways of generating a controlling question (chapters 6 and 9), and what was said there applies here also. But particularly significant to the introduction section of this kind of paper is the necessity for a general indication of how the question you choose is manageable by the methods of the science within which you are working.

In the *methods* section of the paper you describe how you went about collecting findings or doing the work of the study. Such a description is essential to any scientific study, for one of the fundamental principles of the scientific community is that studies be capable of replication. It must be possible for someone else to repeat your study to check its results. Your description of the methods must be precise enough so that someone else could do the study again, exactly as you did.

Thus, if you observe human subjects, you should describe all the characteristics pertinent to the study: age, intelligence, ethnic group, social class, income level, education, medical history, and so on. If you have used questions in an interview or in a test procedure, then you should list the questions. (If you did not, how could another person replicate the study?) But the finished description of what you did should not be an autobiographical narrative that proceeds step by step through all your activities. Limit the description of methods to what your reader must know to replicate your procedures. The actual historical process by which you came to your conclusions is of little interest to your reader, so plan to revise a first-draft narrative. The reader needs to know what questions you used in your interview; the reader does not need to know when and how it occurred to you to ask question 3.

In some social science projects you will not be collecting information directly from human subjects. Instead, you might consult the census bureau, voting records, statistical abstracts and yearbooks, or presidential reports. The compilation of data from these sources has the same requirement of replication, so you must cite your sources.

The *results* section presents the information you have discovered. The actual form of the presentation can vary, from verbal descriptions to complicated statistical calculations. Later in this chapter we describe in detail the uses of tables and figures to organize your data. You must distinguish between these organized presentations of results and the raw data. If you have carried out a statistical calculation using a computer, the raw data of the study will include the computer printouts and the data you fed the computer. If you have used interviews, your raw data will include the answered questionnaire forms. You do not present these cumbersome items in the results section. You must categorize, classify, or tabulate these raw data in some standard way.

*Conclusions* are the interpretations of those results. These interpretations explain the importance and relevance of the findings to the rest of the field. In order to write a conclusion, you must draw upon the background presented in the introduction.

To sum up the special purpose of each of these four sections of a paper: The introductory section should answer the question "What led you to do this study, and why is it important?" The methods section should answer the question "How did you go about studying this matter?" This question should be answered in a way that allows the reader to repeat what you have done. The results section should answer the question "What did you find out?" The concluding section should answer the question "What do the results mean?"

### Writing the first draft

Sitting down and writing the paper that describes your findings may seem almost anticlimactic after all the work that you have done in collecting

your findings. You have already planned your research question, looked up some background on it in the library, gathered your data or findings, and armed yourself with knowledge about the different parts of this paper. If statistical analyses are required, you have done them already. And here you are at the beginning again. But if you start your task of writing with the methods section, you may find that you can quite painlessly report your procedure and, by doing so, complete a whole section of your first draft.

#### **Drafting the methods section**

This section of the paper describes how you collected the findings. Understanding the method appropriate to each discipline gets you to the heart of the discipline itself. We do not intend to present an exhaustive classification of methods. But we do present below two examples of widely differing methods for approaching questions in the social sciences:

1 How fast is the world population increasing and what will it be in 2100? In 2200?

*Method:* A mathematical prediction based on statistics, data from demography, and demographic laws.

2 How does a “fence” avoid arrest for possession of stolen goods?

*Method:* Field work with a fence and/or other persons knowledgeable in the area, for example, detectives. Description of method would include characteristics of persons talked to, circumstances in which interviews took place, questions asked, retest strategies, and so on.

Students often find the methods section the easiest one to write because it is based on very concrete elements. On your first draft do not be afraid to use writer-based prose (chapter 1). You can make the transformation to reader-based prose on subsequent drafts. The following passage will serve for a first-draft attempt:

I decided to use the Navajo Indians as my native group because they were the best integrated while still maintaining a separate identity. Then I determined which social role was. . . .

When you revise, you will abstract from this narrative only what the reader needs to know about the effect of your methodological decisions. Your reader does not need to know how or when you decided to do what. In your revision you might simply identify the Navajo Indians as an integrated group that still maintains a separate identity. But the first-draft account of your discovery process may be necessary to you. Once you record your activities in an order that is meaningful to you, you can more easily rearrange these elements in a form that is useful to a reader.

#### **Drafting the results section**

This section contains the description of the findings. The form of presentation and the very definition of findings vary as widely as the content

of the disciplines in the social sciences. Findings may be presented in words, graphs, numbers, tables, flow charts, and formulas. We describe below the most commonly used forms for the report of your findings.

**Words.** You might be surprised to find words included as a form of presentation in a scientific paper. Sometimes students assume that to be scientific is to be numerical, but this is a mistake. It is quite possible to do research and collect information and then present it entirely in prose. The idea that words are somehow unscientific is not only false—for it rules out a great deal of perfectly respectable social science—but this misconception leads to a serious flaw in writing scientific papers: the appearance of uninterpreted numbers and diagrams. When you present your findings in numerical form, you must also explain them to your reader in words. Words are not just an alternative form of presenting the same results. Prose and diagrams and tables of numbers serve different purposes and communicate differently. If you want your reader to grasp the relationship between, say, inflation and war, then it is best to present the data in a graph. If you are presenting geographical information, then the reader needs a map. But neither the graph nor the map can stand by itself. It is an error to present findings in prose alone when a map is called for. The map will communicate more effectively part of the information you wish to communicate. It is equally an error to present the map or graph without sufficient verbal interpretation. The forms should be seen as complementary rather than as exclusive alternatives.

We present below an excerpt from a criminologist's case study of a "fence" (a receiver of stolen goods). Although the criminologist spent two years on his research, nowhere in his book does he use charts, tables, or even percentage points to present his findings. He conducted systematic interviews with the fence and with thieves who dealt with the fence. The criminologist also systematically observed and recorded a full range of pertinent activities. These written records and interviews constitute the criminologist's findings, which must in this case be reported in words. If your own findings are based on close observations and interviews, you may decide to report your findings in words only. If so, reread chapter 10 on case studies, since you will use many techniques similar to those described there.

Vincent is a businessman; he buys and sells merchandise in order to make a profit. Some of his merchandise is stolen; some of it is not. There is only one advantage to trading in stolen goods: one can buy them cheaper than legitimate goods and thus make a greater profit.

At any given moment, roughly eighty percent of the retail stock on Vincent's shelves is legitimate. This does not mean that the merchandise costs the same as it would in a department store. Rather, Vincent prides himself in buying dead stock, damaged merchandise, factory close-outs, overruns, and the like at especially low prices. Having traded legally and illegally for more than twenty

years, Vincent enjoys a large number of contacts in the business world whom he solicits for such buys. For example, Vincent recently bought three cases of name-brand wigs from a friend in a drug distribution center. In drugstores the wigs normally sold for \$7.99, but the drugstores that bought them found them difficult to sell even when they were marked down to \$5.99. Thus the supply house found itself stuck with cases of wigs no one would buy. Vincent bought three cases for \$125. At 120 wigs per case, that represents a wholesale cost to Vincent of 35¢ per wig. Although the price tag on them in his store reads \$6.00, Vincent is selling them quickly at \$4.00.

Vincent has a number of explanations for why he is able to sell legitimate merchandise that a neighborhood drug, clothing, variety, or general merchandise store cannot sell.

• • •

Vincent's aggressive but pleasant salesmanship and his lower prices on legitimate merchandise are important factors in keeping his customers coming back. The fact that his customers know he has stolen merchandise to sell at prices lower than at any legitimate outlet also figures importantly in his trade in legitimate goods.

• • •

Far more important to Vincent's business than the psychological edge his trade in legitimate goods gives him in dealing with retail customers are the multiple advantages that such a legitimate business identity gives to his trade in stolen merchandise. Collectively, these advantages are commonly referred to as a "front." To explain the interplay between illegal and legal trade which constitutes the front, it is necessary to explicate the legal elements of the offense of receiving stolen goods.

Receiving stolen goods can be legally adjudged a crime if and only if it is proven that (1) the goods in question are in fact stolen goods; (2) the accused did in fact have them in his possession; and (3) he had reasonable cause to know they were stolen. In running his fencing business Vincent constantly employs procedures that render the discovery or proof of one or more of these elements difficult or impossible.<sup>1</sup>

The above extract comes from a book that, although directed to other criminologists, was of interest also to a larger audience. The combination of these facts—that it comes from a book and that it has a wider audience—means that its form of writing is not typical of the writing scientists do when addressing one another in professional journals. There the prose is typically more dense than in the above example, and it also typically contains more technical terms. When writing for journals, authors tend to be more conscious of restricted space and so pack their sentences with

<sup>1</sup> Reprinted with permission of Macmillan Publishing Co., Inc. from *The Professional Fence* by Carl B. Klockars. Copyright © 1974 by Carl B. Klockars. Pp. 77-80.

information. Here is an example from a specialized journal in anthropology (the definitions were provided as part of the results of the study):

Examination of residence histories indicates that most couples follow one of three main residence possibilities: (1) a couple establishes immediate neolocality at the outset of marriage and lives in a house separate from their respective families of orientation throughout their marriage. (2) A couple lives in uxori- or virilocality for a number of years and then eventually moves into its own home. (3) A couple lives uxori- or virilocally at the outset of marriage and remains so permanently until the parents die; the younger couple then has the house to itself. In turn, when the next generation marries, one child in each household almost always follows the last pattern of permanent residence at home, while other children will follow pattern 1 or 2 of immediate or eventual neolocality. . . .

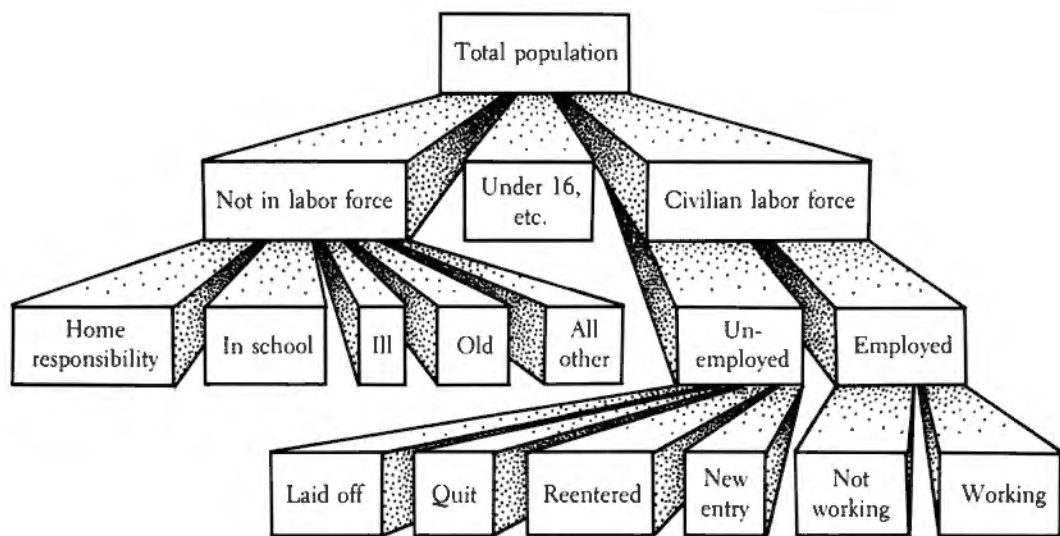
• • •

1. Neolocality: a couple lives in a house separate from the families of either spouse.
2. Uxorilocality: a couple lives with the wife's family (i.e., in the home of the wife's parents).
3. Virilocality: a couple lives with the husband's family (i.e., in his home).
4. Ambilocality: a couple may live either with the wife's or the husband's family, depending on personal choice (which does not preclude the possibility of a later shift to some other form of residence.<sup>2</sup>

*Diagrams using words.* Prose, as exemplified in the previous section, describes the relationship between ideas linearly. That is, you must read from beginning to end, line after line, left to right, over and over again, until you understand the ideas presented. The relationships being explained might take a paragraph or a page to present. For some prose, with long complicated sentences, understanding necessarily comes slowly. Social science writers often aid the reader's comprehension of prose by adding visual representation. A diagram, like a map, shows what items or ideas are related to other ideas. The visual representation alone cannot explain the ideas, but when added to the prose explanation, the visual form illuminates relationships and provides a means of understanding and remembering. The visual presentation may be a diagram, a table of organization, a flow chart, or a schematic drawing. Usually boxes containing words stand for the concepts, and the particular layout—directional arrows, columns—indicates the relationships among the concepts. In the example below, an article on unemployment includes this sentence: "The total population was divided into three categories: those not in the labor force, those under the age of 16 years and in school, and those in the

2 May Ebihara, "Residence Patterns in a Khmer Peasant Village," in *Anthropology and the Climate of Opinion*, ed. Stanley A. Freed, (New York: The New York Academy of Sciences, 1977).





**FIGURE 11.1**  
*Population in various employment categories. (From Macroeconomics: Understanding National Income, Inflation, and Unemployment by Edwin G. Dolan with the collaboration of David E. Lindsey. Copyright © 1977 by The Dryden Press, a division of Holt, Rinehart and Winston. Reprinted by permission of Holt, Rinehart and Winston.)*

civilian labor force, whether working at present or not." The information communicated by this sentence is also presented in the diagram in figure 11.1. In little more space than is taken by the sentence, the diagram presents not only the three classes mentioned by the sentence, but also two other levels of classification and thirteen further classes. The diagram provides an instantaneous representation of the concepts, and the reader can see the relationships among concepts all at once.

You may decide that the concepts presented in the above example are simple enough to be explained without the aid of a diagram, and indeed you should be selective about the number of diagrams that you finally present. You will want to use only one or two at most in your finished paper. But, as we point out in chapter 2, diagrams, flow charts, and tables can be useful to you in the draft stage, even if you decide not to use a particular diagram or table in your finished paper. Sometimes you need to see the pertinent relationships graphically before you can write connected prose. Diagrams, flow charts, photographs, maps, tables, graphs, and charts may be helpful to you or to your reader in clarifying complex relationships. Although you do not need to devise a graphic representation for every set of relationships in your findings, you do need to explain every graphic representation in words.

*Photographs and maps.* Social scientists sometimes present findings in the form of photographs and maps. Anthropologists, economists, and, of course, geographers are more likely to use these illustrations. Social scientists use photographs for accurate descriptions, not for aesthetic pleasure, so students must limit the number to a few and use them only when photographs are the best means for clarifying a description. Although you



may see large numbers of photographs or drawings in social science texts, especially in introductory courses, the text has aims different from your paper. The numerous photographs in texts do more than illustrate the content; they are presented to catch the eye of the reader. Do not use photographs or drawings in a report merely to interest the reader. You must assume instead that the reader is interested in the clear presentation of the findings themselves.

The two photographs presented in figure 11.2 illustrate a study of ritualized gift giving in modern Japanese society. In the first picture we see that although the analysis is of present-day activities, the women are wearing the traditional robes, not modern dress, and the gifts are being presented in a ritualistic pose. That pose would be difficult to describe without a picture. In the second photograph we can look at the wrapped packages and try for ourselves to guess the contents of each before we read what the subjects of the experiment guessed. When we do read these findings, they will mean more to us because of our experience with the photograph. Before you read the caption, try to guess the contents of each gift.

As a second example, figure 11.3 is a schematic drawing of a cave, called Shanidar IV. This drawing comes from a paper of just four pages. In earlier papers the author, Solecki, had reported the existence of the cave. In this paper he argues that the inhabitants of the cave must have had a form of religious life because he found materials with pollen content among the Neanderthal remains in the cave. If there were flowers in the cave, he says, then there were funerary rites, and therefore religion. It becomes critical, then, to show exactly the relationship between the location of the bones in the cave and the location of the pollen samples. He shows this relationship with the drawing in figure 11.3.

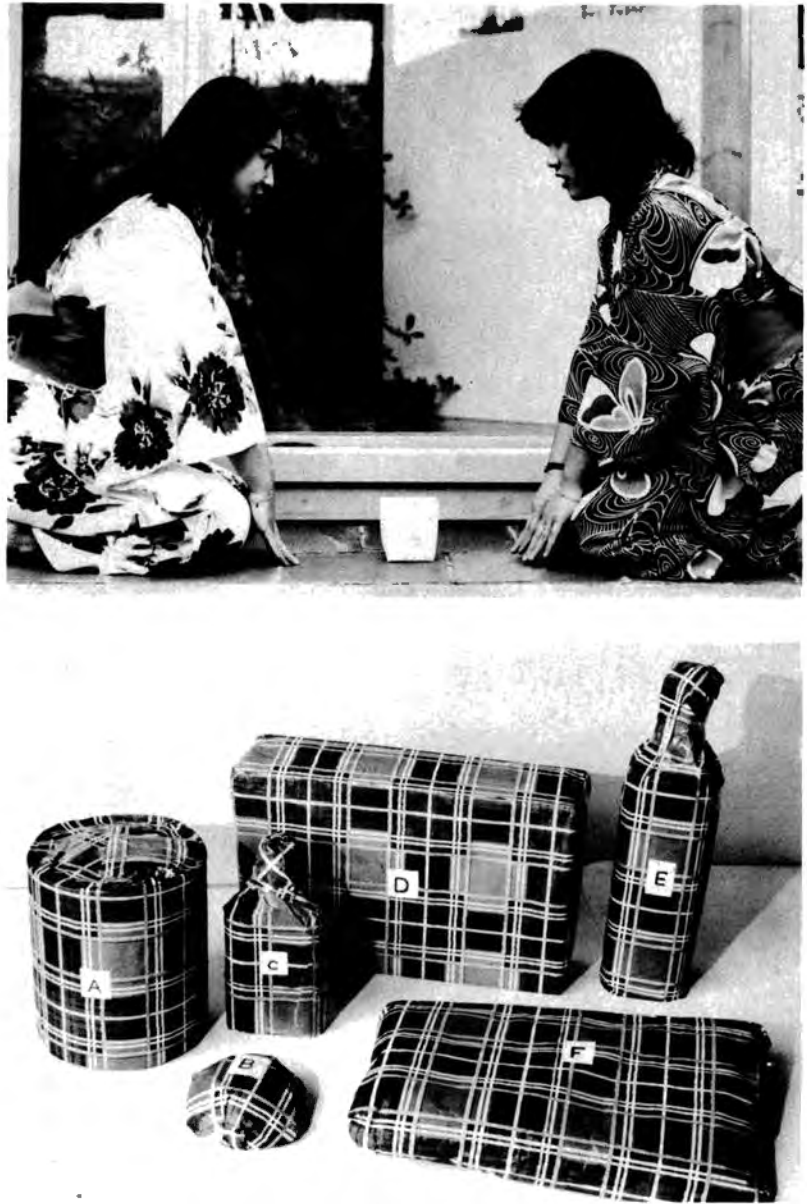
**Tables.** Tables are the most common form for presenting findings. They are used in all disciplines, although their use is greater in economics than in anthropology. Researchers use tables to summarize their findings in numbers or percentages of items in a category. These tables vary in degree of sophistication and complexity. Newspapers or newsletters may publish a table describing the number of children enrolled in each grade in a school district, intending that table to be read by lay people. Or a journal article in the social sciences may publish descriptive research findings in tabular form to communicate with peers in the discipline.

Suppose you have collected data about the occupations pursued by graduate students of history after they received their bachelor's degree but before they entered graduate study. You would present those findings as shown in table A. A second example, one that you might present for an economics course, reports the effects of sex and education on income (table B). Tables are used to divide information into various categories; tables A and B use columns and spaces for six occupations, six levels of education, and the two sexes.

One purpose of a table is to help you to make comparisons between

FIGURE 11.2

Two uses of photographs to report findings. The top photo is a recreation based on a photograph in the study. The bottom photograph is from the study and shows wrapped gifts whose contents were guessed by the Glasgow sample. A, Gift box containing tea; B, luxury bath soap; C, small bottle of whiskey; D, box of chocolates; E, large bottle of whiskey; F, bath towel. [From Helmut Morsbach, "The Psychological Importance of Ritualized Gift Exchange in Modern Japan," in *Anthropology and the Climate of Opinion*, ed. Stanley A. Freed (New York: The New York Academy of Sciences, 1977). Used with permission of Dr. H. Morsbach, Glasgow University, Scotland.]



various columns of information. If you had conducted a study of ritual gift-giving like Morsbach's, then you would have collected data on the accuracy with which selected individuals from Tokyo and from Glasgow guessed the contents of the wrapped gifts. You might have percentages of the accurate guesses from each sample group. You would then construct a table showing the percentages of accurate guesses. The table would also show the results of a statistical test determining the significance level of

FIGURE 11.3  
Using a map to report  
findings. [From Ralph  
S. Solecki, "The  
Implications of the  
Shanidar Cave  
Neanderthal Flower  
Burial," in  
Anthropology and the  
Climate of Opinion,  
ed. Stanley A. Freed  
(New York: The New  
York Academy of  
Sciences, 1977), p.  
116. Used with  
permission from The  
New York Academy of  
Sciences and from  
Ralph S. Solecki,  
Columbia University.]

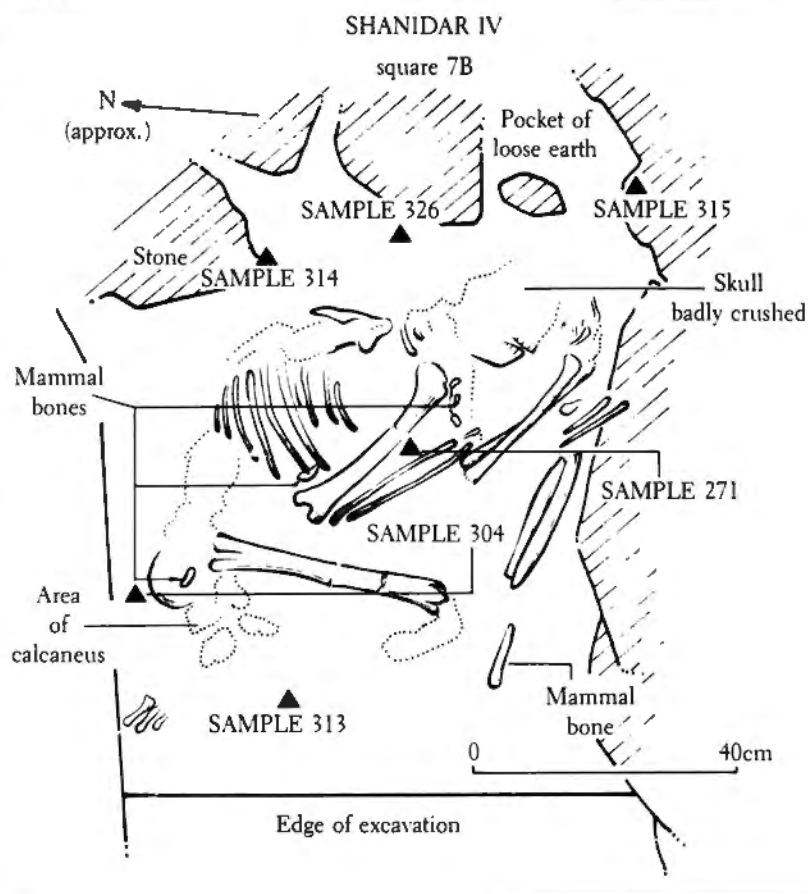


TABLE A  
Occupation Preceding Entry to  
Graduate School in History (in %)

Occupation	Male	Female
Unemployed	11	38
Waiting Tables	14	14
Other Blue Collar	33	24
Clerical	5	8
Professional	7	5
Self-employed	30	11

(The numbers presented here do not represent real data.)

**TABLE B**  
**Median Earned Income of People 22 and Older**  
**(Rounded to the nearest \$100)**

Level of Education Completed	Male	Female
1-8 years	3,900	3,400
9-11 years	9,700	6,300
12 years	13,700	9,200
1-2 years of college	14,000	11,600
3 years	18,300	13,200
4 or more years of college	20,400	15,100

(The numbers presented here do not represent real data.)

the difference between the groups. The statistical test indicates whether the differences are statistically significant or not. Table 11.1, which comes from Morsbach, is a model of a table you might have constructed from your findings.

The table you construct must have two labels: the table number corresponding to the sequence of tables in the paper, and the title of the table. Also, each column has a subtitle describing it. Even though the table presents a great deal of information, you must explain that graphic information in the body of your paper. You must not assume that the table is self-evident. A table should never stand alone. Sometimes a reader just wants a quick look at your tables to determine, for instance, how your groups differed. Sometimes the reader may want to read a description of all your results. In your results section you might provide a prose explanation of your table:

As table 11.1 indicates, the Japanese adults guessed more accurately than the Scots the

**TABLE 11.1**  
*Accuracy of guessing  
the contents of  
wrapped gifts*

Items	Percentage correct		Significance level*	Group more accurate
	Tokyo sample (n = 26)	Glasgow sample (n = 38)		
Large bottle of whiskey	92%	69%	$p < .001$	Tokyo
Gift box containing tea	4%	3%	n.s.	—
Bath towel	92%	24%	$p < .001$	Tokyo
Small bottle of whiskey	12%	42%	$p < .10$	Glasgow
Luxury bath soap	73%	32%	$p < .01$	Tokyo

Source: Helmut Morsbach, "The Psychological Importance of Ritualized Gift Exchange in Modern Japan," in *Anthropology and the Climate of Opinion*, ed. Stanley A. Freed (New York: The New York Academy of Sciences, 1977), p. 106.

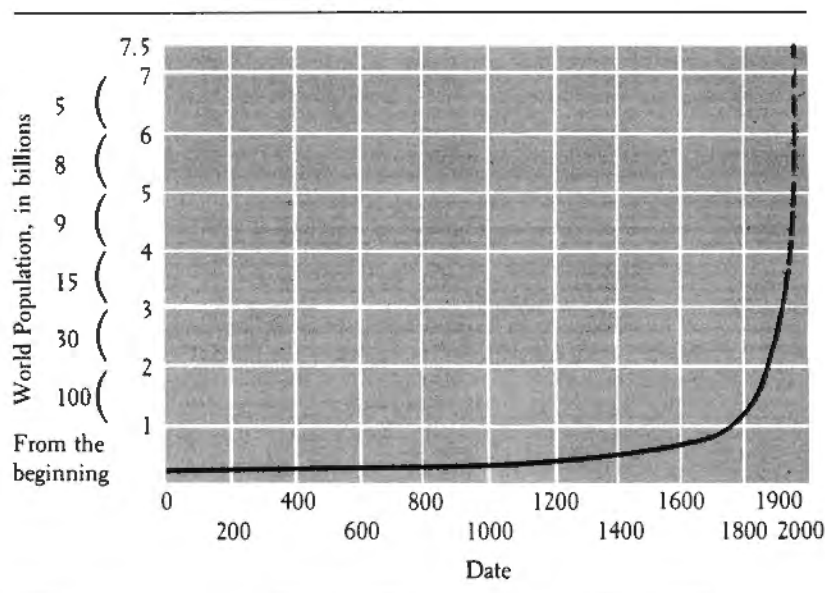
\*Chi-square test or Fisher exact probability test.

packages containing the large bottle of whiskey, the bath towel, and the luxury soap. In contrast, the Scottish adults guessed the small bottle of whiskey slightly more accurately than the Japanese, and the tea was not guessed accurately by either group. The Japanese had a particularly high (92 percent) level of accuracy when guessing the large whiskey and the bath towel; the Scots did not guess any gift at the same high rate, although their most accurate guessing was on the large bottle of whiskey.

*Graphs and charts.* Researchers also make extensive use of graphs to present their findings. Graphs show the relationship between two or more variables. Suppose you were studying the relationship between historical time and world population. First you want to show the steady population figure for many hundreds of years and then the rapid increase since 1900. Then you want to project the world population in the year 2000. You would present the information you accumulated in a graph with one variable, years, on the horizontal axis and the other variable, world population, on the vertical axis. The relationships between these two variables are described by the line, increasing very, very gradually at first, and then extremely rapidly. See figure 11.4.

The visual representation of the dramatic change in population at the turn of the century can best be presented by a graph, not by words alone.

**FIGURE 11.4**  
Using line graphs to present findings.  
[Based on UNA-USA National Policy Panel on World Population, World Population: A Challenge to the United Nations and Its System of Agencies (New York: United Nations Association of the USA, 1969), p. 12.]

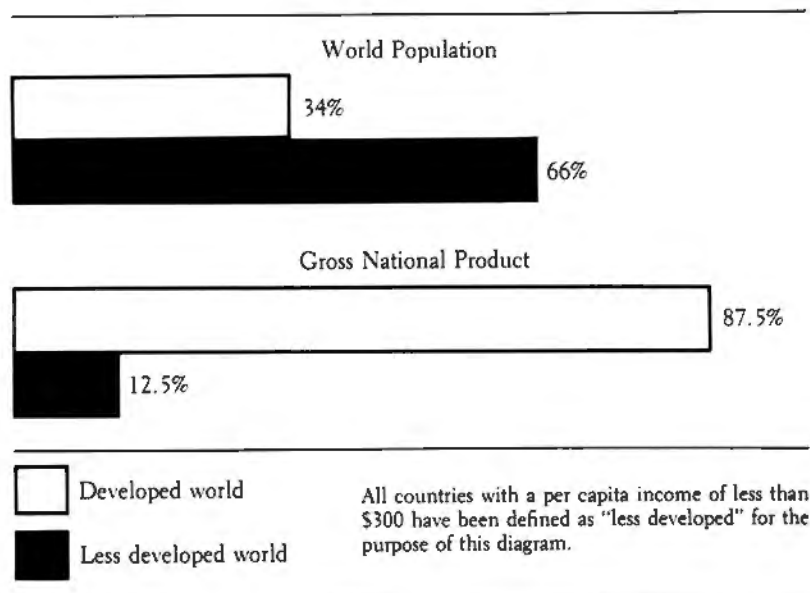


In a single rapid movement of the eye as we look at the graph in figure 11.4, we see the dimensions of change in world population, a concept that would require many words to describe.

Researchers also use a figure known as a bar graph to show relationships between variables. If you were comparing population and gross national product in developed countries and less developed ones, you would have obtained information that you could present in percentages or fractions. (See figure 11.5.) Using a bar graph with differences in the shading and length of the bars, you could show that developed countries have a smaller percent of the world population and a much larger percent of the gross product of the world. In contrast, the less developed countries have a larger percent of world population and a very small percent of the world's gross product. Thus, compared to the developed countries, the less developed countries have more people sharing a much smaller gross national product. This comparison of the countries gives us an inverse relationship. Even a reader not accustomed to interpreting graphic figures can understand these obvious differences in shading and length. A bar graph can clarify your findings.

After you have made a preliminary decision about the verbal and graphic means that you will use to present your results, you should next examine your findings in comparison with your original expectations. When you look at your original hypothesis, which should be carefully recorded in your notes, you may discover that your findings do not fit exactly with your earlier expectations. Don't worry! Even in the work of professional social scientists, findings don't fit expectations exactly. If

**FIGURE 11.5**  
Using bar graphs to  
present findings.  
[Based on UNA-USA  
National Policy Panel  
on World Population,  
World Population: A  
Challenge to the  
United Nations and  
Its System of Agencies  
(New York: United  
Nations Association of  
the USA, 1969), p.  
27.]



social scientists could predict human and societal behavior perfectly, they would design crystal balls, not research techniques.

Then you must examine your raw data again. To gain a new perspective, try some of the strategies explained in chapter 2. Reexamine the findings from a viewpoint different from your original research question. Focus on another variable, for example. Frequently, students have raw data that they do not use fully, so be sure you have been thorough in converting pertinent findings into paragraphs, tables, graphs, or statistical analyses.

As you begin writing the *results* section, make a list of the findings. You have several options in presenting them. You may want to group those that are most closely related. If you have extensive findings, they may call for subtitles and subsections. You may decide to present the more mundane findings first and build up to your most important or surprising results, devoting more space to what is more important. Or you may prefer to begin with what is most important and then go on to present the rest of your data.

If you have used statistical tests on your findings, subordinate the description of these tests. When you first try a social science report, you may be tempted to make the statistical test the focus of the results section. This tendency is understandable because it is natural to feel that the correct application of a statistical test is by itself a significant achievement. Still, that inappropriate focus is a subtle violation of the conventions of scientific reports. Here is an example of a student's first attempt to record his use of statistical tests:

Several chi-square tests of differences between samples were performed comparing the Scottish and Japanese samples for each gift.

More experienced writers emphasize the findings and use a more subtle way to present the statistical test.

The following example conforms to the convention that the prose in the results section should emphasize the data, not the statistical tests. The chi-square statistical test can be put in a footnote or in a subordinate part of the sentence.

Table 11.1 shows that the guesses of Japanese students about the contents of 3 of the wrapped gifts were correct significantly more often than the guesses of the Scottish students ( $\chi^2 = \underline{a}$ ,  $p < .05$ ).<sup>\*</sup> In contrast, the Scottish students were significantly more adept at guessing the contents of the packages containing the small bottle of whiskey. Both groups were inaccurate in their guesses about the contents of the packages



which contained tea. Here the difference between the two groups was not significant.

---

\* $\chi^2$  means the statistical test used to calculate the degree of difference in the responses of the Scottish and Japanese groups.  $a$  is the number obtained by performing the  $\chi^2$  tests on guesses for each gift.  $p$  means the probability that  $a$  is not this large merely because of chance. This probability must be less than 5 chances out of 100 ( $< .05$ ). When researchers obtain a probability level  $< .05$ , they consider the difference to be "significant."

**Drafting the introduction**

First write a statement describing the purpose of the study. Many students overlook this step, probably because their purpose is so obvious to them. But consider your readers. They need a clear statement of purpose right away if they are to have a context in which to read your paper.

You must next present a review of relevant background material. It may help to view your introduction as a mini term paper, presenting what other researchers have found about the problem that you address in your study. Consequently, rereading chapter 9 may be useful at this point. Before you collected your own findings, you did a great deal of reading and recording in the library. Now that you know the results of your own study, use your own findings to guide you in selecting and ordering this library material. You may even have to return to the library to look up background information on findings that you did not expect to have and about which you therefore did not collect any background material.

**Drafting the conclusion**

This section has two purposes. One is to summarize your findings in a sentence or two without all the more technical aides—visual and statistical—you used in describing them in the results section, which precedes this one. The second purpose is to discuss the implications of your findings. What do your results mean? Why are they important? In discussing the implications, you are concerned with linking your particular results to the background information you cited in the introduction. You should suggest that your findings give further support for and/or disagree with some previous research. In addition, you should link your findings to the theoretical orientation from which both your work and the other cited work grow. In making this connection you may use techniques of comparison and contrast, discussed fully in chapter 8.

And finally, you should put both the theoretical position and the findings in some larger social science context. Reread pages 201–204 of chapter 8 on papers of speculation. As you write your conclusion, you are

actually speculating about the relevance of your own work to general problems in the discipline.

## Revising

You have written a first draft of four different sections of a paper. Now you must shape these fragments into one coherent paper. Although we have emphasized the four separate sections of this paper to make writing the first draft a more manageable task, the paper must be a readable single unit when you complete the finished product.

Frequently papers of this type are not long. Papers that report findings do not include (unless they are doctoral dissertations) an exhaustive review of the literature on the subject. Rather, you are writing the paper to report and explain your own findings. In revising your paper, be sure that everything in the paper is related to those findings. You may be particularly tempted to include too much in your introduction. Avoid going off on tangents—even interesting ones. Be sure that you show the relationship of all background material to the study at hand.

Be sure that you convert writer-based prose to reader-based prose (chapter 1). Check your methods and results sections in particular to transform the narrative of what you did and why you did it into an account of what the reader needs to know about your procedures and about your findings.

Next check for the following courtesies, which will convey to your reader that you know how professional social scientists behave when they present their research:

- 1 Use headings for your tables, graphs, and photographs. Use both “Table 1” or “Figure 1” numbered sequentially throughout your paper and a *title* for your graphic representation, e.g., “Present-day gift exchange.”
- 2 Be sure that you explain all tables and figures in the body of your paper. Like the bride on the wedding cake, tables and figures never stand alone.
- 3 Title your paper in a way that makes clear what your study is about.
- 4 Use section titles. Instructors in almost all social science disciplines expect to find subheadings for at least the main sections of your paper: Introduction, Methods, and so forth. In some disciplines, you are expected to divide each section further with pertinent subheadings. Look at the form of the papers you have read during your research. The actual practice of these social scientists is a helpful guide for your decisions.
- 5 Use the proper form of documentation (chapter 5) to write your reference list.
- 6 Write a brief (often only a 100-word) summary, using the guidelines in chapters 5 and 13. Instructors in many social science fields will expect this abstract to accompany your full paper.

7 Use your dictionary and grammar handbook to check your paper for accuracy in typing and spelling, punctuation, and conformity to standard usage. You may have been meticulous in the procedures you used for collecting your data, but you will finally look sloppy if your finished draft is sprinkled with many misspellings and typographical errors.

Drafting and revising your report in the ways we have described will help you to analyze what you have found and then to report that analysis to other apprentice social scientists.

- QUESTIONS**
- 1 What is the standard structure for writing up your findings in a social science paper? Why is it often useful to draft the sections in an order different from the final order?
  - 2 What are the differences between the results section and the discussion section?
  - 3 When are visual presentations most useful? Give examples.
  - 4 What is accomplished by the use of the photographs in figure 11.2?

- EXERCISES**
- 1 Consider the six sample questions given at the beginning of the chapter and try to identify the research methods that would be required to answer each.
  - 2 Read the selection on the “fence.” From reading this passage, can you tell anything about the methods that the researcher used?
  - 3 In this chapter we have drawn inferences from figures 11.1, 11.4, 11.5, and tables 11.1, A, and B. Study these visual presentations and try to infer other information from them. Make a list of the inferences that you think can be made from the figures and tables and compare them with lists made by classmates.
  - 4 Using the definitions that are provided, rewrite the passage from the journal article on page 242 so that a classmate could easily understand it.