



EARL BABBIE

THE  
BASICS OF

# SOCIAL RESEARCH

SEVENTH  
EDITION

# THE BASICS OF SOCIAL RESEARCH

## A Note from the Author

Writing is my joy, sociology my passion. I delight in putting words together in a way that makes people learn or laugh or both. Sociology shows up as a set of words, also. It represents our last, best hope for planet-training our race and finding ways for us to live together. I feel a special excitement at being present when sociology, at last, comes into focus as an idea whose time has come.



Earl Babbie

I grew up in small-town Vermont and New Hampshire. When I announced I wanted to be an auto-body mechanic, my teacher, like my dad, told me I should go to college instead. When young Malcolm Little announced he wanted to be a lawyer, his teacher told him a “colored boy” should be something more like a carpenter. The difference in our experiences says something powerful about the idea of a level playing field. The inequalities among ethnic groups run deep, as Malcolm X would go on to point out.

I ventured into the outer world by way of Harvard, the U.S. Marine Corps, UC Berkeley, and 12 years teaching at the University of Hawaii. I resigned from teaching in 1980 and wrote full time for seven years, until the call of the classroom became too loud to ignore. For me, teaching is like playing jazz. Even if you perform the same number over and over, it never comes out the same way twice and you don’t know exactly what it’ll sound like until you hear it. Teaching is like writing with your voice.

After some 20 years of teaching at Chapman University in southern California, I have now shifted my venue by moving to Arkansas and getting a direct experience of southern/midwestern life. When that’s balanced by periodic returns to my roots in Vermont, I feel well-rounded in my sociological experiences.

SEVENTH EDITION

THE BASICS OF  
SOCIAL  
RESEARCH

EARL BABBIE

Chapman University



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*To Evelyn Fay Babbie and Henry Robert Babbie*





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# Preface

The book in your hands has been about four decades in the making. It began in the classroom, when I was asked to teach a seminar in survey research. Frustrated with the lack of good textbooks on the subject, I began to dream up something I called “A Survey Research Cookbook and Other Fables,” which was published in 1973 with a more sober title: *Survey Research Methods*.

The book was an immediate success. However, there were few courses limited to survey research. Several instructors around the country asked if “the same guy” could write a more general methods book, and *The Practice of Social Research* appeared two years later. The latter book has become a fixture in social research instruction, with the Fourteenth Edition published in 2015. The official two-volume Chinese edition was published in Beijing in 2000.

Over the life of this first book, successive revisions have been based in large part on suggestions, comments, requests, and corrections from my colleagues around the country and, increasingly, around the world. Many also requested a shorter book with a more applied orientation.

Whereas the third quarter of the twentieth century saw a greater emphasis on quantitative, pure research, the century ended with a renaissance of concern for applied sociological research (sometimes called *sociological practice*) and also a renewed interest in qualitative research. *The Basics of Social Research* was first published in 1999 in support of these trends. This Seventh Edition aims at increasing and improving that support.

The book can also be seen as a response to changes in teaching methods and in student demographics. In addition to the emphasis on applied research, some alternative teaching formats have called for a shorter book, and student economics have argued for a paperback. While standard methods courses have continued using

*The Practice of Social Research*, I’ve been delighted to see that the first six editions of *Basics* seem to have satisfied a substantial group of instructors as well. The fine-tuning in this Seventh Edition is intended to help *Basics* serve this group even better than before.

## ■ CHANGES IN THE SEVENTH EDITION

A revision like this depends heavily on the input from students and faculty, who have been using earlier editions. Some of those suggestions resulted in two new features that have been added to every chapter:

### General Changes

- Each chapter begins with a list of numbered learning objectives that are keyed to the relevant discussion in that chapter.
- As with each edition, I have included illustrative data (from the U.S. Census, opinion polls, observational studies) wherever possible. This doesn’t change the methodological purposes for using the data but it keeps the reader in closer touch with the real world.

### Chapter Changes

In addition to those book-wide changes, here are some of the additional updates you’ll find in specific chapters of the book. Many of these changes were made in response to comments and requests from students and faculty.

#### Part One: An Introduction to Inquiry

##### 1 Human Inquiry and Science

- Added a discussion of Arbesman’s “half-life of facts”
- Updated census data on birthrates
- Expanded discussion of probabilistic causation

## 2 Paradigms, Theory, and Research

- Clarified the meaning of disconfirmability in connection with hypotheses
- Tightened the use of paradigm and theory
- Added some bibliographic citations for classic references
- Introductory discussion of logic and rationality

## 3 The Ethics and Politics of Social Research

- Pointed students to the National Institutes of Health course on the ethics of human-subjects research
- Added example of Facebook 2012 study violating informed consent

## Part Two: The Structuring of Inquiry

### 4 Research Design

- Added a box reporting a graduate student's experience in the field
- Expanded the discussion of Figure 4-1
- Expanded the box discussion of determining units of analysis
- Added new figure comparing time variable and different designs
- Cited Peter Lynn book on longitudinal surveys
- Added new section on mixed modes
- Cited Akerlof and Kennedy on the evaluation of environmental degradation studies
- Introduced new trend study of American fears

### 5 Conceptualization, Operationalization, and Measurement

- Discussion of measuring ethnicity in Cornwall County, Britain
- New Applying Concepts in Everyday Life box, "Validity and Social Desirability"
- Added discussion of cognitive interviewing
- Added an example of bullying in the workplace
- Added a test of whether the terms *baby* or *fetus* affected abortion attitudes
- Added discussion of definition of rape and other variables

### 6 Indexes, Scales, and Typologies

- Updated the abortion example of a Guttman scale to 2012 GSS
- Cited Vision of Humanity's global peace index
- Cited the World Economic Forum's "Global Competitiveness Index" for rating 142 economies

## 7 The Logic of Sampling

- Updated presidential election polling
- Introduced term *chain referral*
- Added Michael Brick's prediction of a rebirth of quota sampling
- Discussed FCC rules on calling cell phones
- Expanded discussion of sampling for online surveys
- Revised box on selecting random numbers due to new table in Appendix
- Related box on sampling in Iran to sampling in the USA (or anywhere)
- Cited Nate Silver's FiveThirtyEight.com rating of pollsters

## Part Three: Modes of Observation

### 8 Experiments

- Experiment on impact of race, sex, and parenthood on hiring decisions
- Cited use of chimpanzees or humans in studies of the common cold
- Substituted Muslims for African Americans in running example of reducing prejudice

### 9 Survey Research

- Updated and simplified online analysis of GSS data
- Added example of survey type and sensitive information
- Added discussion of use of ABS (address-based sampling) in conjunction with RDD (random digit dialing) sampling for surveys
- Updated section on web surveys, including the advantages they hold
- Added a comment on "mixed-mode" surveys
- Noted the value of online surveys for targeting groups defined by web participation, like eBay buyers
- Deleted the box on Voice Capture
- Quoted from AAPOR report on mobile devices
- Cited an article on tablet-based surveys

### 10 Qualitative Field Research

- Added discussion of Milner's Freaks, Geeks, and Cool Kids
- Added discussion of the impact of gender in in-depth interviews
- Expanded the discussion of ethics in field research
- Added discussion of voice-centered relational method

- Added study asking subjects to do sketches regarding their vaginal disorders
- Moved box on Pencils and Photos to Chapter 13
- Added example of participatory research in South Africa
- Added citation on uses of video for data collection

### 11 Unobtrusive Research

- Added data on sex discrimination in income
- Added comparative/historical study of fair trade coffee
- Deleted box “Is America Number 1?”
- Deleted box “Suffering around the World”
- Introduced Population Action International mapping website
- Introduced Google Public Data
- Introduced Topsy Social Analytics
- Introduced the Association of Religious Data Archives and their Measurement Wizard
- Discussed Tyler Vigen’s work on spurious correlations among big data

### 12 Evaluation Research

- Updated data on death penalty and murder rates
- Added the example of a qualitative evaluation of a Jamaican radio drama for youth

## Part Four: Analysis of Data

### 13 Qualitative Data Analysis

- Moved box on Pencils and Photos here from Chapter 10
- Added an example of using picture-drawing to study vaginal infections in Australia

### 14 Quantitative Data Analysis

- Illustrated use of bar graphs and pie charts

### 15 Reading and Writing Social Research

- Added citation to my e-book, *Avoiding Plagiarism*

## ■ PEDAGOGICAL FEATURES

Although students and instructors alike have told me that the past editions of this book were effective tools for learning research methods, I see this edition as an opportunity to review the book from a pedagogical standpoint—fine-tuning some elements, adding others. Here’s the resulting package for the Seventh Edition.

- **Learning Objectives:** Each chapter includes learning objectives to guide the student’s understanding and comprehension of the chapter materials.
- **Chapter Introduction:** Each chapter opens with an introduction that lays out the main ideas in that chapter and, importantly, relates them to the content of other chapters in the book.
- **Clear and Provocative Examples:** Students often tell me that the examples—real and hypothetical—have helped them grasp difficult and/or abstract ideas, and this edition has many new examples as well as some that have proved particularly valuable in earlier editions.
- **Full-Color Graphics:** From the first time I took a course in research methods, most of the key concepts have made sense to me in graphical form. Whereas my task here has been to translate those mental pictures into words, I’ve also included some illustrations. Advances in computer graphics have helped me communicate to the Cengage Learning artists what I see in my head and would like to share with students. I’m delighted with the new graphics in this edition.
- **Boxed Examples and Discussions:** Students tell me they like the boxed materials that highlight particular ideas and studies as well as vary the format of the book. In this edition, I’ve updated *Issues and Insights* boxed features to elaborate on the logic of research elements, *How to Do It* boxes to provide practical guidance, and *Applying Concepts in Everyday Life* features to help students see how the ideas they’re reading about apply to real research projects, as well as to their lives.
- **Running Glossary:** There is a running glossary throughout the text. Key terms are highlighted in the text, and the definition for each term is listed at the bottom of the page where it first appears. This makes it easier for students learn the definitions of these terms and to locate them in each chapter so they can review them in context.
- **Main Points:** At the end of each chapter, a concise list of main points provides both a brief chapter summary and a useful review. The main points let students know exactly what ideas they should focus on in each chapter.
- **Key Terms:** A list of key terms follows the main points. These lists reinforce the students’ acquisition of necessary vocabulary. The new vocabulary in these lists is defined in context within the chapters. The terms are boldfaced in the text, are defined in

the running glossary that appears at the bottom of the page throughout the text, and are included in the glossary at the back of the book.

- **Proposing Social Research:** This series of linked exercises invites students to apply what they've learned in each chapter to the development of their own research proposal.
- **Review Questions:** This review aid allows students to test their understanding of the chapter concepts and apply what they've learned.
- **Appendixes:** As in previous editions, a set of appendixes provides students with some research tools, such as a guide to the library, a table of random numbers, and more.
- **Clear and Accessible Writing:** This is perhaps the most important “pedagogical aid” of all. I know that all authors strive to write texts that are clear and accessible, and I take some pride in the fact that this “feature” of the book has been one of its most highly praised attributes through six previous editions. It's the one thing most often mentioned by the students who write to me. For the Seventh Edition, the editors and I have taken special care to reexamine literally every line in the book—pruning, polishing, embellishing, and occasionally restructuring for a maximally “reader-friendly” text. Whether you're new to this book or intimately familiar with previous editions, I invite you to open to any chapter and evaluate the writing for yourself.

## SUPPLEMENTS

*The Basics of Social Research*, Seventh Edition, is accompanied by a wide array of supplements prepared for both the instructor and student to create the best learning environment inside as well as outside the classroom. All the continuing supplements have been thoroughly revised and updated, and several are new to this edition. I invite you to examine and take full advantage of the teaching and learning tools available to you.

**MindTap™: The Personal Learning Experience** MindTap Sociology for Babbie's *The Basics of Social Research* from Cengage Learning represents a new approach to a highly personalized, online learning platform. MindTap combines all of a student's learning tools—the chapter reading, review questions, and Research Tutor modules—into a Learning Path that guides the

student through the research methods course. Instructors personalize the experience by customizing the presentation of these learning tools for their students, even seamlessly introducing their own content into the Learning Path. Learn more at [www.cengage.com/mindtap](http://www.cengage.com/mindtap).

MindTap Sociology for Babbie's *The Basics of Social Research* is easy to use and saves instructors time by allowing them to:

- Customize the course—from tools to text—and make adjustments “on the fly,” making it possible to intertwine breaking news into their lessons and incorporate today's teachable moments;
- Promote personalization by segmenting course content into movable objects, encourage interactivity, and ensure student engagement;
- Integrate multimedia assets, in-context exercises, and supplements; student engagement will increase, leading to better student outcomes;
- Track students' use, activities, and comprehension in real time, providing opportunities for early intervention to influence progress and outcomes;
- Assess knowledge throughout each section: after readings, in activities, homework, and quizzes; and
- Automatically grade homework and quizzes.

**Online 2014 GSS Data Sets to accompany *The Basics of Social Research*** Over the years, the publisher and I have sought to provide up-to-date computer support for students and instructors. Because there are now many excellent programs for analyzing data, we've provided data to be used with them. With this edition, the data sets will be updated to include the 2014 GSS data. Instructors can access this resource at [login.cengage.com](http://login.cengage.com) to distribute to their students

**Readings in Social Research Methods, Third Edition** The concepts and methodologies of social research come to life in this interesting collection of articles specifically designed to accompany *The Basics of Social Research*. Diane Kholos Wysocki includes an interdisciplinary range of readings from the fields of psychology, sociology, social work, criminal justice, and political science. The articles focus on the important methods and concepts typically covered in the social research course and provide an illustrative advantage. Organized by key concepts, each of the reader's 11 chapters begins with an

introduction highlighting and explaining the research concept that each chapter's readings elucidate.

**Instructor's Manual with Test Bank** This supplement offers the instructor chapter outlines, lecture outlines, behavioral objectives, teaching suggestions and resources, video suggestions, Internet exercises, and questions/activities to guide a research project. In addition, for each chapter of the text, the bank has at least 40 multiple-choice questions, 20–25 true–false questions, and 5 short-answer/essay questions, with answers and page references. All questions are labeled as new, modified, or pickup so instructors know if the question is new to this edition of the test bank, modified but picked up from the previous edition of the test bank, or picked up straight from the previous edition of the test bank.

**Cengage Learning Testing powered by Cognero®** Cengage Learning Testing powered by Cognero is a flexible online system that allows instructors to author, edit, and manage test bank content and quickly create multiple test versions. You can deliver tests from your LMS, your classroom—or wherever you want.

**PowerPoint® Lecture Slides** Helping make your lectures more engaging, these handy Microsoft® PowerPoint slides outline the chapters of the main text in a classroom-ready presentation, making it easy for instructors to assemble, edit, publish, and present custom lectures.

## ■ ACKNOWLEDGMENTS

It would be impossible to acknowledge adequately all the people who have influenced this book. My earlier methods text, *Survey Research Methods*, was dedicated to Samuel Stouffer, Paul Lazarsfeld, and Charles Glock. I again acknowledge my debt to them.

Many colleagues helped me through the several editions of *The Practice of Social Research* and *The Basics of Social Research*. Their contributions are still present in this edition of *Basics*, as are the end results from unsolicited comments and

suggestions from students and faculty around the world.

Over the years, I have become more and more impressed by the important role played by editors in books like this. Since 1973, I've worked with varied sociology editors at Wadsworth, which has involved the kinds of adjustments you might need to make in as many successive marriages. Happily, this edition of the book has greatly profited from my partnership with Jennifer Harrison and Marta Lee-Perriard at Cengage Learning. Perhaps you have to be a textbook author to appreciate how much of a difference editors make in the writing and publishing experience, but I want to report that I have been blessed with great partners.

This is the first book I've revised with John Chell, content developer at Cengage. His expert devotion to the book was only so slightly interrupted by the arrival of daughter, Cassidy.

I have worked with many editors over the years, but my association with Greg Hubit at Bookworks is longer than any other. Greg's job is to put together a team of professionals capable of turning an imperfect manuscript into the kind of book you have in your hands. I wouldn't want to make a textbook without Greg.

In my experience, copy editors are the invisible heroes of publishing, and it has been my good fortune and pleasure to have worked with one of the very best, Marne Evans, for several years and several editions. Among her many gifts, Marne has the uncanny ability to hear what I am trying to say and to find ways to help others hear it.

In recent editions, I have developed a close working relationship with Deb Nichols, who shepherds the edited manuscript into page proofs. Hers are the final critical set of eyes before the book is printed.

I have dedicated this book to my granddaughter, Evelyn Fay Babbie, born during the revision of the Second Edition of the book, and my grandson, Henry Robert Babbie, born during the revision of the Third Edition. They continued to add joy to my life during the revision of the Seventh Edition, and I am committed to their growing up in a more humane and just world than the one they were born into.





# A Letter to Students *from* This Book

I've asked my author and your instructor to chat among themselves so you and I can have a private conversation. Before you start reading this book, I want to let you in on something: I know you may not want me. You may not have chosen to take this course. My guess is that you're reading me because I've been assigned in a required research methods class. In that case, it's a bit like an arranged marriage.

I also know that you likely have some concerns about this course, especially its potential difficulty. If you do, you're not alone. I certainly don't want to *create* such concerns. However, I know from years of personal experience that many students feel anxious at the beginning of a social research course. In this short chat, I want to reassure you that it will not be as bad as you think. You may even enjoy this course. You see, a great many students from all over the world have written to my author to say just that: They were worried about the course at the beginning, but they ended up truly enjoying it.

So, to be clear, I'm not Freddy Krueger or Chucky—some monster plotting to make your college years miserable. I'm not even a dean. It's a little early in our relationship to call myself your *friend*, of course, but I do get called that a lot. I'm confident we can work together.

Benjamin Spock, the renowned author and pediatrician, began his books on child care by assuring new parents that they already knew more about caring for children than they thought they did. I want to begin on a similar note. Before you've read very far, you'll see that you already know a great deal about the practice of social research. In fact, you've been conducting social research all your life. From that perspective, this book aims at helping you sharpen skills you already have and perhaps show you some tricks that may not have occurred to you.

If you're worried about *statistics* in a course like this, I must tell you something. There *are* some statistics. But it's not what you think. It's not just an evil swarm of numbers. Statistics has a logic that allows us to do amazing things. Did you know that questioning around 2,000 people, properly selected, can let us forecast the results of an election in which over 100 million people vote? I think you might find it's worth learning a little statistics in order to understand how that sort of thing works. (In all my years as a textbook, I've never gotten tired of that example.)

Chapter 14 contains quite a bit of statistics, because it deals with quantitative (numerical) data analysis. Frankly, my author has never found a way of teaching students how to do statistical analyses without using some statistics. However, you'll find more emphasis on the *logic* of statistics than on mathematical calculations.

Maybe I should let you in on a little secret: My author never took a basic statistics course!

In his undergraduate major, statistics wasn't required. When he arrived at graduate school, a simple misunderstanding (really, you can't blame him for this) led him to indicate he had already taken introductory statistics when that wasn't, well, *technically* true. He only got an A in the advanced graduate statistics course because it focused on the logic of statistics more than on calculations. Statistics made *sense* to him, even without memorizing the calculations.

Here's a more embarrassing secret that he probably wouldn't want you to know. When he published his first research methods textbook 35 years ago, his chapter on statistics had only three calculations—and he got two of them wrong. (He's gotten much better, by the way. However, if you find any mistakes, please write him. I'm much happier when everything between the covers is in good order.)

The purpose of these confessions is not to downplay the importance of statistical analyses: I shall present them to you with the highest respect. My purpose is to let you know that statistics is not a mystical world that only math wizards enter. Statistics is a powerful tool that will help you understand the world around you. My author and I merely want help you learn enough of it to wield that tool to your advantage.

What can you do if you come across something in this book or in class that you simply don't understand? You have several options:

1. Assume that it will never matter that much, and go on with your life.
2. Decide that you are too stupid to understand such sophisticated ideas.
3. Ask someone else in the course if they understand it.
4. Ask your instructor to clarify it.
5. In case of emergency: e-mail my author at [ebabbie@mac.com](mailto:ebabbie@mac.com).

Options (1) and (2) are *not* good choices. Try (3), (4), and (5)—in that order.

As regards (5), by the way, please realize that tens of thousands of students around the world are using this book, in many languages, every semester, so it may take my author a little while to get back to you. He doesn't have a workshop of methodology elves helping him. Here's a hint: Do not frame your question in the form of a take-home exam, as in "What are three advantages of qualitative research over quantitative research?" My author doesn't answer those sorts of questions. *You* are the one taking the exam. He's taken enough exams already. Besides, he would give answers that leave out all the great material your instructor brings to the course.

Speaking of your instructor, by the way, please know that this is not the easiest course to teach. Even if the statistics are not as heavy as you thought, you'll be asked to open yourself up to new ways of seeing and understanding. That's not necessarily comfortable, and your instructor has taken on the task of guiding you through whatever confusion and/or discomfort you may experience. So, give 'em a break.

Instructors know that this course typically produces lower-than-average teacher evaluations. Personally, I think it's because of the subject matter as well as the fears students bring to the

course. So when it's time for evaluations, please separate your instructor's performance from any concerns you may have had about the material. Of course, you might find yourself thoroughly enjoying the subject of social science research. My author and I do, and so does your instructor. We plan to do everything possible to share that enjoyment with you.

If you're at all concerned about the state of the world (and I think you should be), it's worth knowing that social research is a key to solving most major problems. No joke. Consider the problem of overpopulation, for example. My author is fond of calling it the "mother of all social problems." (You'll get used to his sense of humor as you make your way through my pages. Be sure to check the glossary, by the way.)

Anyway, back to overpopulation. Most simply put, there are more people on the planet than it can sustain, even at the impoverished standard of living many of those people suffer. And if everyone were living like those in the most developed countries, our resources would last about a week and a half and our carbon footprint would crush us like bugs. And the world's population is growing by about 80 million people a year. That's another United States every four years.

Where would you go for an answer to a problem like that? My author is fond of saying that at first people asked, "What causes all the babies?" and they turned to the biologists for help. But when they learned what was causing the babies, that didn't solve the problem. Frankly, they weren't willing to give up sex. So they turned to the rubber industry for help. That made some difference, but the population continued to grow. Finally, people turned to the chemical industry: "Can't we just take a pill and be able to have sex without producing babies?" Soon the pills were developed and they made some difference, but the population still continued to grow.

As I've learned from my author, the key to population growth lies in the social structures that lead people to have more babies than is needed to perpetuate the human species (roughly two babies per couple). Consider, for example, the social belief that a woman is not "really a woman" until she has given birth, or the complementary belief that a man is not "really a man" until he has sired young. Some people feel they should produce children to take care of

them when they are old, or to perpetuate their name (the father's name in most cases). Many other social perspectives promote the production of more than enough babies.

The biologists, chemists, and rubber manufacturers can't address those causes of overpopulation. That is precisely where social researchers come in. Social researchers can discover the most powerful causes of social problems like overpopulation, prejudice, war, and climate change (yes, even climate change) and explore ways of combating them.

The pressing need for well-trained social researchers is what motivates my author and your instructor to do what they do. It also explains why you may be required to take this course—even against your will. We're arming you to make a powerful difference in the world around you. What you do with that new ability is up to you, but we hope you will use it only for the good.

I'll turn you over to my author now. I'll do everything I can to make this a fun and useful course for you.





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# 1

## Human Inquiry and Science

**Learning Objectives** *After studying this chapter, you will be able to...*

- L01** Identify the different ways people decide what's real.
- L02** Be able to explain the fundamental nature of social science.
- L03** Understand the basic options for conducting social science research.



## In this chapter...

### Introduction

#### Looking for Reality

- Knowledge from Agreement Reality
- Ordinary Human Inquiry
- Tradition
- Authority
- Errors in Inquiry and Some Solutions

#### The Foundations of Social Science

- Theory, Not Philosophy or Belief
- Social Regularities
- Aggregates, Not Individuals
- Concepts and Variables
- The Purposes of Social Research
- The Ethics of Human Inquiry

#### Some Dialectics of Social Research

- Idiographic and Nomothetic Explanation
- Inductive and Deductive Theory
- Determinism versus Agency
- Qualitative and Quantitative Data
- The Research Proposal

## ■ INTRODUCTION

This book is about knowing things—not so much *what* we know as *how* we know it. Let's start by examining a few things you probably know already.

You know the world is round. You probably also know it's cold on the dark side of the moon (the side facing away from the sun), and you know people speak Japanese in Japan. You know that vitamin C can prevent colds and that unprotected sex can result in AIDS.

*How* do you know? If you think for a minute, you'll see you know these things because somebody told them to you, and you believed them. You may have read in *National Geographic* that people speak Japanese in Japan, and that made sense to you, so you didn't question it. Perhaps your physics or astronomy instructor told you it was cold on the dark side of the moon, or maybe you heard it on the news.

Some of the things you know seem obvious to you. If I asked you how you know the world is round, you'd probably say, "Everybody knows that." There are a lot of things everybody knows.

## What do you think?



Earl Babbie

The decision to have a baby is deeply personal. No one is in charge of who will have babies in the United States in any given year,

or of how many will be born. Although you must get a license to marry or go fishing, you do not need a license to have a baby. Many couples delay pregnancy, some pregnancies happen by accident, and some pregnancies are planned. Given all these uncertainties and idiosyncrasies, how can baby-food and diaper manufacturers know how much inventory to produce from year to year? By the end of this chapter, you should be able to answer this question.

See the *What do you think? Revisited* box toward the end of the chapter.

Of course, at one time, everyone "knew" the world was flat.

Most of what you know is a matter of agreement and belief. Little of it is based on personal experience and discovery. A big part of growing up in any society, in fact, is the process of learning to accept what everybody around you "knows" is so. If you don't know those same things, you can't really be a part of the group. If you were to question seriously that the world *is* round, you'd quickly find yourself set apart from other people. You might be sent to live in a hospital with others who ask questions like that.

So, most of what you know is a matter of believing what you've been told. Understand that there's nothing wrong with you in that respect. That's simply the way human societies are structured. The basis of knowledge is agreement. Because you can't learn all you need to know through personal experience and discovery



alone, things are set up so you can simply believe what others tell you. You know some things through tradition, others from “experts.” I’m not saying you shouldn’t question this received knowledge; I’m just drawing your attention to the way you and society normally get along regarding what is so.

There are other ways of knowing things, however. In contrast to knowing things through agreement, you can know them through direct experience—through observation. If you dive into a glacial stream flowing through the Canadian Rockies, you don’t need anyone to tell you it’s cold.

When your experience conflicts with what everyone else knows, though, there’s a good chance you’ll surrender your experience in favor of agreement. For example, imagine you’ve come to a party at my house. It’s a high-class affair, and the drinks and food are excellent. In particular, you’re taken by one of the appetizers I bring around on a tray: a breaded, deep-fried tidbit that’s especially zesty. You have a couple—they’re so delicious! You have more. Soon you’re subtly moving around the room to be wherever I am when I arrive with a tray of these nibbles.

Finally, you can contain yourself no longer. “What are they?” you ask. I let you in on the secret: “You’ve been eating breaded, deep-fried worms!” Your response is dramatic: Your stomach rebels, and you promptly throw up all over the living room rug. What a terrible thing to serve guests!

The point of the story is that *both* of your feelings about the appetizer were quite real. Your initial liking for them was certainly real, but so was the feeling you had when you found out what you’d been eating. It should be evident, however, that the disgust you felt was strictly a product of the agreements you have with those around you that worms aren’t fit to eat. That’s an agreement you began the first time your parents found you sitting in a pile of dirt with half of a wriggling worm dangling from your lips. When they pried your mouth open and reached down your throat for the other half of the worm, you learned that worms are not acceptable food in our society.



Earl Bobbie

We learn some things by experience, others by agreement. This young man seems to be learning by personal experience.

Aside from these agreements, what’s wrong with worms? They’re probably high in protein and low in calories. Bite-sized and easily packaged, they’re a distributor’s dream. They are also a delicacy for some people who live in societies that lack our agreement that worms are disgusting. Some people might love the worms but be turned off by the deep-fried breading.

Here’s a question to consider: “Are worms *really* good or *really* bad to eat?” And here’s a more interesting question: “*How could you know* which was really so?” This book is about answering the second question.

## LOOKING FOR REALITY

Reality is a tricky business. You’ve probably long suspected that some of the things you “know” may not be true, but how can you really know what’s real? People have grappled with this question for thousands of years.

L01

### Knowledge from Agreement Reality

One answer that has arisen out of that grappling is science, which offers an approach to both agreement reality and experiential reality. Scientists have certain criteria that must be met before they’ll accept the reality of something they haven’t personally experienced. In general, an assertion must have both *logical* and *empirical* support: It must make sense,

and it must not contradict actual observation. Why do earthbound scientists accept the assertion that it's cold on the dark side of the moon? First, it makes sense, because the surface heat of the moon comes from the sun's rays. Second, the scientific measurements made on the moon's dark side confirm the expectation. So, scientists accept the reality of things they don't personally experience—they accept an **agreement reality**—but they have special standards for doing so.

More to the point of this book, however, science offers a special approach to the discovery of reality through personal experience, that is, to the business of inquiry. **Epistemology** is the science of knowing; **methodology** (a subfield of epistemology) might be called the science of finding out. This book is an examination and presentation of social science methodology, or how social scientists find out about human social life. You'll see that some of the methods coincide with the traditional image of science but others have been specially geared to sociological concerns.

In the rest of this chapter, we'll look at inquiry as an activity. We'll begin by examining inquiry as a natural human activity, something you and I have engaged in every day of our lives. Next, we'll look at some kinds of errors we make in normal inquiry, and we'll conclude by examining what makes science different. We'll see some of the ways science guards against common human errors in inquiry.

The *Issues and Insights* box, "Social Research Making a Difference," gives an example of controlled social research challenging what "everybody knows."

## Ordinary Human Inquiry

Practically all people exhibit a desire to predict their future circumstances. We seem quite willing, moreover, to undertake this task using *causal* and *probabilistic* reasoning. First, we generally recognize that future circumstances

are somehow caused or conditioned by present ones. We learn that swimming beyond the reef may bring an unhappy encounter with a shark. As students we learn that studying hard will result in better grades. Second, we also learn that such patterns of cause and effect are *probabilistic* in nature: The effects occur more often when the causes occur than when the causes are absent—but not always. Thus, students learn that studying hard produces good grades in most instances, but not every time. We recognize the danger of swimming beyond the reef, without believing that every such swim will be fatal.

As we'll see throughout the book, science makes these concepts of causality and probability more explicit and provides techniques for dealing with them more rigorously than does casual human inquiry. It sharpens the skills we already have by making us more conscious, rigorous, and explicit in our inquiries.

In looking at ordinary human inquiry, we need to distinguish between prediction and understanding. Often, we can make predictions without understanding—perhaps you can predict rain when your trick knee aches. And often, even if we don't understand why, we're willing to act on the basis of a demonstrated predictive ability. The racetrack buff who finds that the third-ranked horse in the third race of the day always wins will probably keep betting without knowing, or caring, why it works out that way.

Whatever the primitive drives or instincts motivate human beings, satisfying these urges depends heavily on the ability to predict future circumstances. However, the attempt to predict is often placed in a context of knowledge and understanding. If we can understand *why* things are related to one another, why certain regular patterns occur, we can predict even better than if we simply observe and remember those patterns. Thus, human inquiry aims at answering both "what" and "why" questions, and we pursue these goals by observing and figuring out.

As I suggested earlier, our attempts to learn about the world are only partly linked to direct, personal inquiry or experience. Another, much larger, part comes from the agreed-on knowledge that others give us. This agreement reality both assists and hinders our attempts to find out for

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**agreement reality** Those things we "know" as part and parcel of the culture we share with those around us.

**epistemology** The science of knowing; systems of knowledge.

**methodology** The science of finding out; procedures for scientific investigation.

## ISSUES AND INSIGHTS

## Social Research Making a Difference

Medication errors in U.S. hospitals kill or injure about 770,000 patients each year, and the newly developed Computerized Physician Order Entry (CPOE) systems have been widely acclaimed as the solution to this enormous problem, which stems in part from the traditional system of handwritten prescriptions.

Medical science research has generally supported the new technology, but an article in the *Journal of the American Medical Association* in March 2005 sent a shock wave through the medical community. The sociologist Ross Koppel and colleagues used several of the research techniques you'll be learning in this book to test the effectiveness of

the new technology. Their conclusion: CPOE was not nearly as effective as claimed; it did not prevent errors in medication (Koppel et al. 2005).

As you can imagine, those manufacturing and selling the equipment were not thrilled by the research, and it has generated an ongoing discussion within the healthcare community. At last count, the study had been cited over 20,000 times in other articles, and Koppel has become a sought-after expert in this regard.

*Source:* Kathryn Goldman Schuyler, "Medical Errors: Sociological Research Makes News," *Sociological Practice Newsletter* (American Sociological Association, Section on Sociological Practice), Winter 2006, p. 1.

ourselves. To see how, consider two important sources of our secondhand knowledge—tradition and authority.

## Tradition

Each of us inherits a culture made up, in part, of firmly accepted knowledge about the workings of the world and the values that guide our participation in it. We may learn from others that eating too much candy will decay our teeth, that the circumference of a circle is approximately twenty-two sevenths of its diameter, or that masturbation will make you blind. Ideas about gender, race, religion, and different nations that you learned as you were growing up would fit in this category. We may test a few of these "truths" on our own, but we simply accept the great majority of them, the things that "everybody knows."

Tradition, in this sense of the term, offers some clear advantages to human inquiry. By accepting what everybody knows, we avoid the overwhelming task of starting from scratch in our search for regularities and understanding. Knowledge is cumulative, and an inherited body of knowledge is the jumping-off point for developing more of it. We often speak of

"standing on the shoulders of giants," that is, starting with the knowledge base of previous generations.

At the same time, tradition may be detrimental to human inquiry. If we seek a fresh understanding of something that everybody already understands and has always understood, we may be marked as fools for our efforts. More to the point, however, most of us rarely even think of seeking a different understanding of something we all "know" to be true.

## Authority

Despite the power of tradition, new knowledge appears every day. Aside from our personal inquiries, we benefit throughout life from new discoveries and understandings produced by others. Often, acceptance of these new acquisitions depends on the status of the discoverer. You're more likely to believe the epidemiologist who declares that the common cold can be transmitted through kissing, for example, than to believe your uncle Pete saying the same thing.

Like tradition, authority can both assist and hinder human inquiry. We do well to trust the judgment of the person who has special training,

expertise, and credentials in a given matter, especially in the face of controversy. At the same time, inquiry can be greatly hindered by the legitimate authority who errs within his or her own special province. Biologists, after all, do make mistakes in the field of biology.

Inquiry is also hindered when we depend on the authority of experts speaking outside their realm of expertise. For example, consider the political or religious leader with no biochemical expertise who declares that marijuana is a dangerous drug. The advertising industry plays heavily on this misuse of authority by, for example, having popular athletes discuss the nutritional value of breakfast cereals or movie actors evaluate the performance of automobiles.

Both tradition and authority, then, are double-edged swords in the search for knowledge about the world. Simply put, they provide us with a starting point for our own inquiry, but they can lead us to start at the wrong point and push us off in the wrong direction.

## Errors in Inquiry and Some Solutions

Quite aside from the potential dangers of tradition and authority, we often stumble and fall when we set out to learn for ourselves. Let's look at some of the common errors we make in our casual inquiries and the ways science guards against those errors.

**Inaccurate Observations** Quite frequently, we make mistakes in our observations. For example, what was your methodology instructor wearing on the first day of class? If you have to guess, that's because most of our daily observations are casual and semiconscious. That's why we often disagree about "what really happened."

In contrast to casual human inquiry, scientific observation is a conscious activity. Simply making observation more deliberate can reduce error. If you had to guess what your instructor was wearing the first day of class, you'd probably make a mistake. If you had gone to the first class

meeting with a conscious plan to observe and record what your instructor was wearing, however, you'd likely be more accurate. (You might also need a hobby.)

In many cases, both simple and complex measurement devices help guard against inaccurate observations. Moreover, they add a degree of precision well beyond the capacity of the unassisted human senses. Suppose, for example, that you had taken color photographs of your instructor that day. (See earlier comment about needing a hobby.)

**Overgeneralization** When we look for patterns among the specific things we observe around us, we often assume that a few similar events are evidence of a general pattern. That is, we tend to overgeneralize on the basis of limited observations. This can misdirect or impede inquiry.

Imagine that you're a reporter covering an animal-rights demonstration. You have just two hours to turn in your story. Rushing to the scene, you start interviewing people, asking them why they're demonstrating. If the first two demonstrators you interview give you essentially the same reason, you might simply assume that the other 3,000 would agree. Unfortunately, when your story appeared, your editor could get scores of letters from protesters who were there for an entirely different reason.

Realize, of course, that we must generalize to some extent to survive. It's probably not a good idea to keep asking whether *this* rattlesnake is poisonous. Assume they all are. At the same time, we have a tendency to overgeneralize.

Scientists guard against overgeneralization by seeking a sufficiently large sample of observations. The **replication** of inquiry provides another safeguard. Basically, this means repeating a study and checking to see if the same results occur each time. Then, as a further test, the study can be repeated under slightly varied conditions.

**Selective Observation** One danger of overgeneralization is that it can lead to selective observation. Once you have concluded that a particular pattern exists and have developed a general understanding of why it does, you'll tend to focus on future events and situations

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**replication** Repeating an experiment to expose or reduce error.



that fit the pattern, and you'll ignore those that don't. Racial and ethnic prejudices depend heavily on selective observation for their persistence.

In another example, here's how Lewis Hill recalls growing up in rural Vermont:

Haying began right after the Fourth of July. The farmers in our neighborhood believed that anyone who started earlier was sure to suffer all the storms of late June in addition to those following the holiday which the oldtimers said were caused by all the noise and smoke of gunpowder burning. My mother told me that my grandfather and other Civil War veterans claimed it always rained hard after a big battle. Things didn't always work out the way the older residents promised, of course, but everyone remembered only the times they did. — (2000: 35)

Sometimes a research design will specify in advance the number and kind of observations to be made, as a basis for reaching a conclusion. If you and I wanted to learn whether women were more likely than men to support the legality of abortion, we'd commit ourselves to making a specified number of observations on that question in a research project. We might select a thousand people to be interviewed on the issue. Alternately, when making direct observations of an event, such as an animal-rights demonstration, social scientists make a special effort to find "deviant cases"—those who do not fit into the general pattern.

**Illogical Reasoning** There are other ways in which we often deal with observations that contradict our understanding of the way things are in daily life. Surely one of the most remarkable creations of the human mind is "the exception that proves the rule." That idea doesn't make any sense at all. An exception can draw attention to a rule or to a supposed rule (in its original meaning, "prove" meant "test"), but in no system of logic can it validate the rule it contradicts. Even so, we often use this pithy saying to brush away contradictions with a simple stroke of illogic. This is particularly common in relation to group stereotypes. When a person of color, a woman, or a gay violates the stereotype someone holds for that group, it somehow "proves" that, aside from this one exception, the stereotype remains "valid" for all the rest. For example, a woman

business executive who is kind and feminine is taken as "proof" that all other female executives are mean and masculine.

What statisticians have called the *gambler's fallacy* is another illustration of illogic in day-to-day reasoning. A consistent run of either good or bad luck is presumed to foreshadow its opposite. An evening of bad luck at poker may kindle the belief that a winning hand is just around the corner; many a poker player has stayed in a game much too long because of that mistaken belief. (A more reasonable conclusion is that they are not very good at poker.)

Although all of us sometimes fall into embarrassingly illogical reasoning in daily life, scientists avoid this pitfall by using systems of logic consciously and explicitly. Chapter 2 will examine the logic of science in more depth. For now, it's enough to note that logical reasoning is a conscious activity for scientists, who have colleagues around to keep them honest.

Science, then, attempts to protect us from the common pitfalls of ordinary inquiry. Accurately observing and understanding reality is not an obvious or trivial matter, as we'll see throughout this chapter and this book.

Before moving on, I should caution you that scientific understandings of things are also constantly changing. Any review of the history of science will provide numerous examples of old "knowledge" being supplanted by new "knowledge." It's easy to feel superior to the scientists of a hundred or a thousand years ago, but I fear there is a tendency to think those changes are all behind us. Now, we know the way things are.

In *The Half-Life of Facts* (2012), Samuel Arbesman addresses the question of how long today's scientific "facts" survive reconceptualization, retesting, and new discoveries. For example, half of what medical science knew about hepatitis and cirrhosis of the liver was replaced in 45 years.

The fact that scientific knowledge is constantly changing actually points to a strength of scientific scholarship. Whereas cultural beliefs and superstitions may survive unchallenged for centuries, scientists are committed to achieving an ever better understanding of the world. My purpose in this book is to prepare you to join that undertaking.

## THE FOUNDATIONS OF SOCIAL SCIENCE

The two pillars of science are logic and observation. A scientific understanding of the world must (1) make sense and (2) correspond with what we observe. Both elements are essential to science and relate to three major aspects of the overall scientific enterprise: theory, data collection, and data analysis.

L02

In the most general terms, scientific theory deals with logic; data collection with observation; and data analysis deals with patterns in what is observed and, where appropriate, the comparison of what is logically expected with what is actually observed. Though most of this textbook deals with data collection and data analysis—demonstrating how to conduct empirical research—recognize that social *science* involves all three elements. As such, Chapter 2 of this book concerns the theoretical context of research; Parts 2 and 3 focus on data collection; and Part 4 offers an introduction to the analysis of data. Figure 1-1 offers a schematic view of how this book addresses these three aspects of social science.

Let's turn now to some of the fundamental issues that distinguish social science from other ways of looking at social phenomena.

### Theory, Not Philosophy or Belief

Social science theory has to do with what is, not with what *should* be. For many centuries, however, social theory has combined these two orientations. Social philosophers liberally mixed their observations of what happened around them, their speculations about why, and their *ideas* about how things ought to be. Although modern social scientists may do the same from time to time, realize that social *science* has to do with how things are and why.

This means that scientific **theory**—and science itself—cannot settle debates on value. Science cannot determine whether capitalism is better or worse than socialism except in terms of agreed-on criteria. To determine

**theory** A systematic explanation for the observations that relate to a particular aspect of life: juvenile delinquency, for example, or perhaps social stratification or political revolution.

scientifically whether capitalism or socialism most supports human dignity and freedom, we would first have to agree on some measurable definitions of dignity and freedom. Our conclusions would depend totally on this agreement and would have no general meaning beyond it.

By the same token, if we could agree that suicide rates, say, or giving to charity were good measures of a religion's quality, then we could determine scientifically whether Buddhism or Christianity is the better religion. Again, our conclusion would be inextricably tied to the given criterion. As a practical matter, people seldom agree on criteria for determining issues of value, so science is seldom useful in settling such debates. In fact, questions like these are so much a matter of opinion and belief that scientific inquiry is often viewed as a threat to what is "already known."

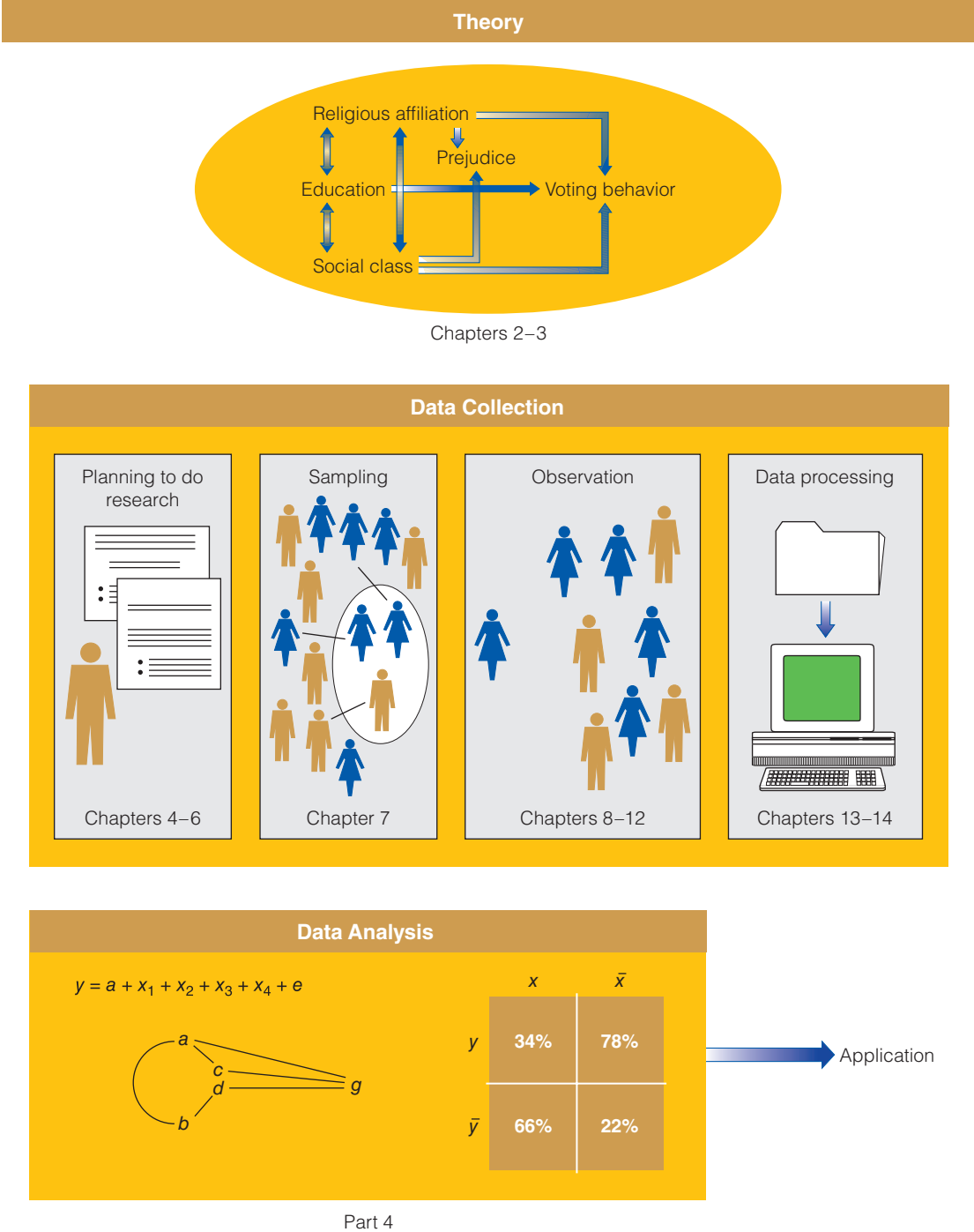
We'll consider this issue in more detail in Chapter 12, when we look at evaluation research. As you'll see, social scientists have become increasingly involved in studying programs that reflect ideological points of view, such as affirmative action or welfare reform. One of the biggest problems researchers face is getting people to agree on criteria of success and failure. Yet such criteria are essential if social science research is to tell us anything useful about matters of value. By analogy, a stopwatch can't tell us if one sprinter is better than another unless we first agree that speed is the critical criterion.

Social science, then, can help us know only what is and why. We can use it to determine what ought to be, but only when people agree on the criteria for deciding what's better than something else—an agreement that seldom occurs. With that understood, let's turn now to some of the fundamental bases upon which social science allows us to develop theories about what is and why.

### Social Regularities

In large part, social science theory aims to find patterns in social life. That aim, of course, applies to all science, but it sometimes presents a barrier to people when they first approach social science.

Actually, the vast number of formal norms in society create a considerable degree of regularity.



**FIGURE 1-1 Social Science = Theory + Data Collection + Data Analysis.** This figure offers a schematic overview of the major stages of social research, indicating where each is discussed in this book.



For example, only people who have reached a certain age can vote in elections. In the U.S. military, until recently only men could participate in combat. Such formal prescriptions, then, regulate, or regularize, social behavior.

Aside from formal prescriptions, we can observe other social norms that create more regularities. Republicans are more likely than Democrats to vote for Republican candidates. University professors tend to earn more money than do unskilled laborers. Men earn more than do women. (We'll look at this pattern in more depth later in the book.) The list of regularities could go on and on.

Three objections are sometimes raised in regard to such social regularities. First, some of the regularities may seem trivial. For example, Republicans vote for Republicans; everyone knows that. Second, contradictory cases may be cited, indicating that the "regularity" isn't totally regular. Some laborers make more money than some professors do. Third, it may be argued that the people involved in the regularity could upset the whole thing if they wanted to.

Let's deal with each of these objections in turn.

**The Charge of Triviality** During World War II, Samuel Stouffer, one of the greatest social science researchers, organized a research branch in the U.S. Army to conduct studies in support of the war effort (Stouffer et al. 1949–1950). Many of the studies focused on the morale among soldiers. Stouffer and his colleagues found there was a great deal of "common wisdom" regarding the bases of military morale. Much of the research undertaken by this organization was devoted to testing these "obvious" truths.

For example, people had long recognized that promotions affect morale in the military. When military personnel get promotions and the promotion system seems fair, morale rises. Moreover, it makes sense that people who are getting promoted will tend to think the system is fair, whereas those passed over will likely think the system is unfair. By extension, it seems sensible that soldiers in units with slow promotion rates will tend to think the system is unfair, and those in units with rapid promotions will think the system is fair. But was this the way they really felt?

Stouffer and his colleagues focused their studies on two units: the Military Police (MPs), which had the slowest promotions in the Army, and the Army Air Corps (forerunner of the U.S. Air Force), which had the fastest promotions. It stood to reason that MPs would say the promotion system was unfair, and the air corpsmen would say it was fair. The studies, however, showed just the opposite.

Notice the dilemma faced by a researcher in a situation such as this. On the one hand, the observations don't seem to make sense. On the other hand, an explanation that makes obvious good sense isn't supported by the facts.

A lesser scientist would have set the problem aside "for further study." Stouffer, however, looked for an explanation for his observations, and eventually he found it. Robert Merton, Alice Kitt (1950), and other sociologists at Columbia University had begun thinking and writing about something they called *reference group theory*. This theory says that people judge their lot in life less by objective conditions than by comparing themselves with others around them—their reference group. For example, if you lived among poor people, a salary of \$50,000 a year would make you feel like a millionaire. But if you lived among people who earned \$500,000 a year, that same \$50,000 salary would make you feel impoverished.

Stouffer applied this line of reasoning to the soldiers he had studied. Even if a particular MP had not been promoted for a long time, it was unlikely that he knew some less-deserving person who had gotten promoted more quickly. Nobody got promoted in the MPs. Had he been in the Air Corps—even if he had gotten several promotions in rapid succession—he would probably have been able to point to someone less deserving who had gotten even faster promotions. An MP's reference group, then, was his fellow MPs, and the air corpsman compared himself with fellow corpsmen. Ultimately, then, Stouffer reached an understanding of soldiers' attitudes toward the promotion system that (1) made sense and (2) corresponded to the facts.

This story shows that documenting the obvious is a valuable function of any science, physical or social. Charles Darwin coined the phrase *fool's experiment* to describe much of his own research—research in which he tested things that everyone else "already knew." As Darwin

understood, the obvious all too often turns out to be wrong; thus, apparent triviality is not a legitimate objection to any scientific endeavor.

**What about Exceptions?** The objection that there are always exceptions to any social regularity does not mean that the regularity itself is unreal or unimportant. A particular woman may well earn more money than most men, but that provides small consolation to the majority of women, who earn less. The pattern still exists. Social regularities, in other words, are probabilistic patterns, and they are no less real simply because some cases don't fit the general pattern.

This point applies in physical science as well as social science. Subatomic physics, for example, is a science of probabilities. In genetics, the mating of a blue-eyed person with a brown-eyed person will probably result in a brown-eyed offspring. The birth of a blue-eyed child does not destroy the observed regularity, because the geneticist states only that the brown-eyed offspring is more likely and, further, that brown-eyed offspring will be born in a certain percentage of the cases. The social scientist makes a similar, probabilistic prediction—that women overall are likely to earn less than men. Once a pattern like this is observed, the social scientist has grounds for asking why it exists.

**People Could Interfere** Finally, the objection that the conscious will of the actors could upset observed social regularities does not pose a serious challenge to social science. This is true even though a parallel situation does not appear to exist in the physical sciences. (Presumably, physical objects cannot violate the laws of physics, although the probabilistic nature of subatomic physics once led some observers to postulate that electrons had free will.) There is no denying that a religious, right-wing bigot could go to the polls and vote for an agnostic, left-wing African American if he wanted to upset political scientists studying the election. All voters in an election could suddenly switch to the underdog just to frustrate the pollsters. Similarly, workers could go to work early or stay home from work and thereby prevent the expected rush-hour traffic. But these things do not happen often enough to seriously threaten the observation of social regularities.

Social regularities, then, do exist, and social scientists can detect them and observe their effects. When these regularities change over time, social scientists can observe and explain those changes.

There is a slightly different form of human interference that makes social research particularly challenging. Social research has a *recursive* quality, in that what we learn about society can end up changing things so that what we learned is no longer true. For example, every now and then you may come across a study reporting “The Ten Best Places to Live,” or something like that. The touted communities aren't too crowded, yet they have all the stores you'd ever want; the schools and other public facilities are great, crime is low, the ratio of doctors per capita is high, the list goes on. What happens when this information is publicized? People move there, the towns become overcrowded, and, eventually they are not such nice places to live. More simply, imagine what results from a study that culminates in a published list of the least-crowded beaches or fishing spots.

In 2001, the Enron Corporation was fast approaching bankruptcy and some of its top executives were quietly selling their shares in the company. During this period, those very executives were reassuring employees of the corporation's financial solvency and recommending that workers keep their own retirement funds invested in the company. As a consequence of this deception, those employees lost most of their retirement funds at the same time they were becoming unemployed.

The events at Enron led two Stanford business-school faculty, David Larcker and Anastasia Zakolyukina (2010), to see if it would be possible to detect when business executives are lying. Their study analyzed tens of thousands of conference-call transcripts, identified instances of executives fibbing, and looked for speech patterns associated with those departures from the truth. For example, Larcker and Zakolyukina found that when the executives lied, they tended to use exaggerated emotions, for instance, calling business prospects “fantastic” instead of “good.” The research found other tip-offs that executives were lying, such as fewer references to shareholders and fewer references to themselves. Given the type of information

derived from this study—uncovering identifiable characteristics of lying—who do you suppose will profit most from it? Probably the findings will benefit business executives and those people who coach them on how to communicate. There is every reason to believe that a follow-up study of top executives in, say, ten years will find very different speech patterns from those used today.

### Aggregates, Not Individuals

Social regularities do exist, then, and are worthy of theoretical and empirical study. As such, social scientists study primarily social patterns rather than individual ones. These patterns reflect the *aggregate* or collective actions and situations of many individuals. Although social scientists often study motivations and actions that affect individuals, they seldom study the individual per se. That is, they create theories about the nature of group, rather than individual, life. Whereas psychologists focus on what happens *inside* individuals, social scientists study what goes on *between* them: examining everything from couples, to small groups and organizations, on up to whole societies—and even interactions between societies.

Sometimes the collective regularities are amazing. Consider the birthrate, for example. People have babies for an incredibly wide range of personal reasons. Some do it because their parents want them to. Some think of it as a way of completing their womanhood or manhood. Others want to hold their marriages together. Still others have babies by accident.

If you have had a baby, you could probably tell a much more detailed, idiosyncratic story. Why did you have the baby when you did, rather than a year earlier or later? Maybe your house burned down and you had to delay a year before you could afford to have the baby. Maybe you felt that being a family person would demonstrate maturity, which would support a promotion at work.

Everyone who had a baby last year had a different set of reasons for doing so. Yet, despite this vast diversity, despite the idiosyncrasy of each individual's reasons, the overall birthrate in a society (the number of live births per 1,000 population) is remarkably consistent from year to year. See Table 1-1 for recent birthrates in the United States.

**TABLE 1-1 Birthrates, United States: 1980–2008**

1980	15.9
1981	15.8
1982	15.9
1983	15.6
1984	15.6
1985	15.8
1986	15.6
1987	15.7
1988	16.0
1989	16.4
1990	16.7
1991	16.2
1992	15.8
1993	15.4
1994	15.0
1995	14.6
1996	14.4
1997	14.2
1998	14.3
1999	14.2
2000	14.4
2001	14.1
2002	13.9
2003	14.1
2004	14.0
2005	14.0
2006	14.2
2007	14.3
2008	14.0

*Note:* Live births per 1,000 population.

*Source:* U.S. Bureau of the Census, *Statistical Abstract of the United States* (Washington, DC: U.S. Government Printing Office, 2012), p. 65, Table 78.

If the U.S. birthrate were 15.9, 35.6, 7.8, 28.9, and 16.2 in five successive years, demographers would begin dropping like flies. As you can see, however, social life is far more orderly than that. Moreover, this regularity occurs without society-wide regulation. As mentioned earlier, no one plans how many babies will be born or determines who will have them. (See the *Applying Concepts in Everyday Life* box, “Birthrate Implications,” for a look at how the analysis of birthrates can serve many purposes.)

Social science theories try to explain why aggregated patterns of behavior are so regular, even when the individuals participating in them

## APPLYING CONCEPTS IN EVERYDAY LIFE

### Birthrate Implications

Take a minute to reflect on the practical implications of the data you've just seen. The *What do you think?* box for this chapter asked how baby-food and diaper manufacturers could plan production from year to year. The consistency of U.S. birthrates suggests this is not the problem it might have seemed.

Who else might benefit from this kind of analysis? What about healthcare workers and educators? Can you think of anyone else?

What if we organized birthrates by region of the country, by ethnicity, by income level, and so forth? Clearly, these additional analyses could make the data even more useful. As you learn about the options available to social researchers, I think you'll gain an appreciation for the practical value that research can have for the whole society.

may change over time. We could say that social scientists don't seek to explain people per se. They try instead to understand the *systems* in which people operate, which in turn explain why people do what they do. The elements in such a system are not people but *variables*.

### Concepts and Variables

Our most natural attempts at understanding are usually concrete and idiosyncratic. That's just the way we think.

Imagine that someone says to you, "Women ought to get back into the kitchen where they belong." You're likely to hear that comment in terms of what you know about the speaker. If it's your old uncle Harry who is also strongly opposed to daylight saving time, zip codes, and personal computers, you're likely to think his latest pronouncement simply fits into his rather dated point of view about things in general.

If, on the other hand, the statement issues forth from a politician who is trailing a female challenger and who has also begun making statements about women being emotionally unfit for public office and not understanding politics, you may hear his latest comment in the context of this political challenge.

In both examples, you're trying to understand the thoughts of a particular individual. In social science, researchers go beyond that level of understanding to seek insights into classes or types of individuals. Regarding the two examples just described, they might use terms such as *old-fashioned* or *bigot* to describe the kind of person who made the comment. In other words, they try to place the individual in a set of similar individuals, according to a particular, defined concept.

By examining an individual in this way, social scientists can make sense out of more than one person. In understanding what makes the bigoted politician think the way he does, they'll also learn about other people who are "like him." In other words, they have not been studying bigots as much as *bigotry*.

*Bigotry* here is spoken of as a *variable* because it varies. Some people are more bigoted than others. Social scientists are interested in understanding the system of variables that causes bigotry to be high in one instance and low in another.

The idea of a system composed of variables may seem rather strange, so let's look at an analogy. The subject of a physician's attention is the patient. If the patient is ill, the physician's purpose is to help that patient get well. By contrast, a medical researcher's subject matter is different: the variables that cause a disease, for example. The medical researcher may study the physician's patient, but only as a carrier of the disease.

Of course, medical researchers care about real people, but in the actual research, patients are directly relevant only for what they reveal about the disease under study. In fact, when researchers can study a disease meaningfully without involving actual patients, they do so.

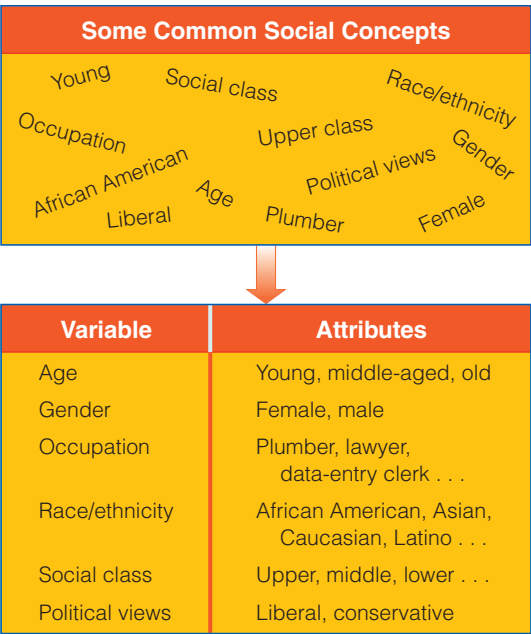
Social research involves the study of variables and the *attributes* that compose them. Social science theories are written in a language of variables, and people get involved only as "carriers" of those variables. Here's a closer look at what social scientists mean by variables and attributes.



**Attributes** or values are characteristics or qualities that describe an object—in this case, a person. Examples include female, Asian, alienated, conservative, dishonest, intelligent, and farmer. Anything you might say to describe yourself or someone else involves an attribute.

**Variables**, on the other hand, are logical sets of attributes. The variable *occupation* is composed of attributes such as farmer, professor, and truck driver. *Social class* is a variable composed of a set of attributes such as upper class, middle class, and lower class. Sometimes it helps to think of attributes as the categories that make up a variable. See Figure 1-2 for a schematic review of what social scientists mean by variables and attributes.

*Sex* and *gender* are examples of variables. These two variables are not synonymous, but distinguishing them can be complicated. I will try to simplify the matter here and abide by that distinction throughout this book.



**FIGURE 1-2 Variables and Attributes.** Variables like *education* and *prejudice* and their attributes (*educated/uneducated*, *prejudiced/unprejudiced*) provide the foundation for examining causal relationships in social research.

**attribute** A characteristic of a person or a thing.  
**variable** A logical set of attributes. The variable *sex* is made up of the attributes *male* and *female*.

Most simply put, *sex* refers to biological/physiological differences, and the attributes comprising this variable are *male* and *female*, *men* and *women*, or *boys* and *girls*.

*Gender*, on the other hand, is a social distinction, referring to what is generally expected of men and women. Notice that these “general expectations” can vary from culture to culture and over time. Note also that some men will exhibit feminine behaviors and characteristics, while some women will exhibit masculine behaviors and characteristics. One set of attributes comprising gender is *masculine* and *feminine*.

However, the real complication comes when women as a class are treated differently from men as a class, but not because of their physical differences. A good example is gender discrimination in income. As we’ll see later in this book, American women overall earn less than men, even when they do the same job and have the same credentials. It has nothing to do with being feminine or masculine, but it is not logically based on their different plumbing, either. The pattern of differential pay for women and men is based, instead, on established social patterns regarding women and men. Traditionally in America, for example, men have been the main breadwinners for their family whereas women typically worked outside the home to provide the family with some supplemental income. Even though this work pattern has changed a good deal, and women’s earnings are often an essential share of the family income, the pattern of monetary compensation—that of men earning more than women—has been slower to change.

Thus, we shall use the term, *sex*, whenever the distinction between men and women is relevant to biological differences. For example, there is a correlation between sex and height in that men are, on average, taller than women. This is not a social distinction but a physiological one. Most of the times we distinguish men and women in this book, however, will be in reference to social distinctions, such as the example of women being paid less than men, or women being underrepresented in elected political offices. In those cases, we shall use the term *gender*. The attributes *men* and *women* will often be used for both *sex* and *gender*.

The relationship between attributes and variables lies at the heart of both description and explanation in science. For example, we might

describe a college class in terms of the variable *sex* by reporting the observed frequencies of the attributes *male* and *female*: “The class is 60 percent men and 40 percent women.” An unemployment rate can be thought of as a description of the variable *employment status* of a labor force in terms of the attributes *employed* and *unemployed*. Even the report of family income for a city is a summary of attributes composing that variable: \$13,124, \$30,980, \$55,000, and so forth. Sometimes the meanings of the concepts that lie behind social science concepts are fairly clear. Other times they aren’t.

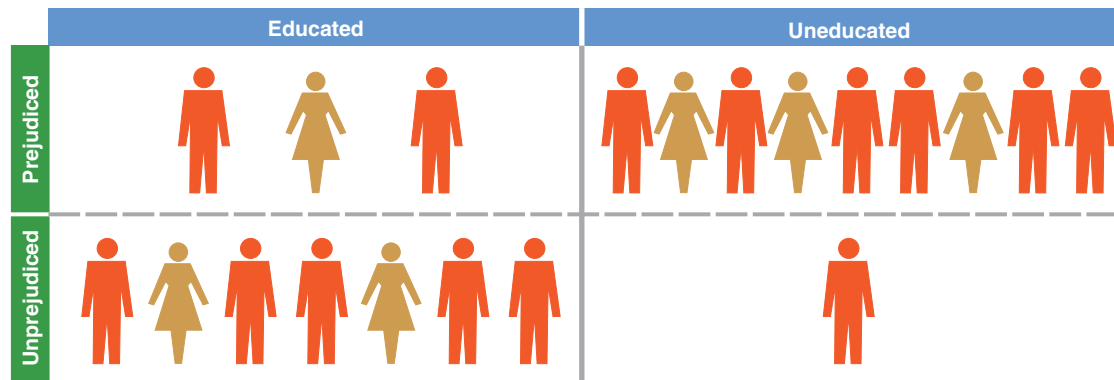
The relationship between attributes and variables is more complicated when we move from description to explanation and it gets to the heart of the variable language of scientific theory.

Here’s a simple example, involving two variables, *education* and *prejudice*. For the sake of simplicity, let’s assume that the variable *education* has only two attributes: *educated* and *uneducated*. (Chapter 5 will address the issue of how such things are defined and measured.) Similarly, let’s give the variable *prejudice* two attributes: *prejudiced* and *unprejudiced*.

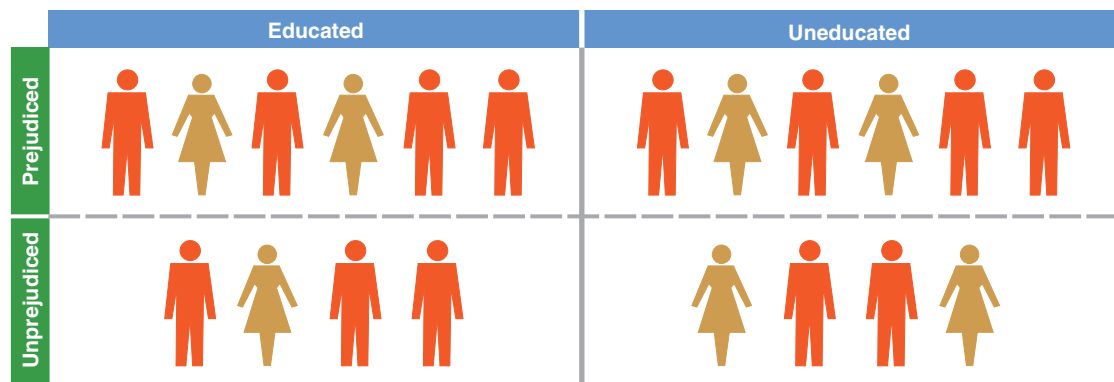
Now let’s suppose that 90 percent of the uneducated are prejudiced, and the other 10 percent are unprejudiced. And let’s suppose that 30 percent of the educated people are prejudiced, and the other 70 percent are unprejudiced. This is illustrated graphically in Figure 1-3a.

Figure 1-3a illustrates a relationship or association between the variables *education* and *prejudice*. This relationship can be seen in terms of the

a. The uneducated are **more** prejudiced than the educated.



b. There is **no** apparent relationship between education and prejudice.



**FIGURE 1-3 Illustration of Relationship between Two Variables (Two Possibilities).** Variables such as *education* and *prejudice* and their attributes (*educated/uneducated*, *prejudiced/unprejudiced*) are the foundation for the examination of causal relationships in social research.

pairings of attributes on the two variables. There are two predominant pairings: (1) those who are educated and unprejudiced and (2) those who are uneducated and prejudiced. Here are two other useful ways of viewing that relationship.

First, let's suppose that we play a game in which we bet on your ability to guess whether a person is prejudiced or unprejudiced. I'll pick the people one at a time (not telling you which ones I've picked), and you have to guess whether each person is prejudiced. We'll do it for all 20 people in Figure 1-3a. Your best strategy in this case would be to guess prejudiced each time, because 12 out of the 20 are categorized that way. Thus, you'll get 12 right and 8 wrong, for a net success of 4.

Now let's suppose that when I pick a person from the figure, I have to tell you whether the person is educated or uneducated. Your best strategy now would be to guess "prejudiced" for each uneducated person and "unprejudiced" for each educated person. If you follow that strategy, you'll get 16 right and 4 wrong. Your improvement in guessing "prejudiced" by knowing education illustrates what it means to say that variables are related.

Second, by contrast, let's consider how the 20 people would be distributed if education and prejudice were unrelated to each other. This is illustrated in Figure 1-3b. Notice that half the people are educated, and half are uneducated. Also notice that 12 of the 20 (60 percent) are prejudiced. Given that 6 of the 10 people in each group are prejudiced, we conclude that the two variables are unrelated to each other. Knowing a person's education would not be of any value

to you in guessing whether that person was prejudiced.

We'll be looking at the nature of relationships among variables in some depth in Part 4 of this book. In particular, we'll see some of the ways relationships can be discovered and interpreted in research analysis. A general understanding of relationships now, however, will help you appreciate the logic of social science theories.

Theories describe the relationships we might logically expect among variables. Often, the expectation involves the idea of *causation*. A person's attributes on one variable are expected to cause, predispose, or encourage a particular attribute on another variable. In Figure 1-3a, something about being educated apparently leads people to be less prejudiced than if they are uneducated.

As I'll further discuss later in the book, *education* and *prejudice* in this example would be regarded as **independent** and **dependent variables**, respectively. Because *prejudice* depends on something, we call it the dependent variable, which depends on an independent variable, in this case *education*. Although the educational levels of the people being studied vary, that variation is independent of prejudice.

Notice, at the same time, that educational variations can be found to depend on something else—such as the educational level of our subjects' parents. People whose parents have a lot of education are more likely to get a lot of education than are those whose parents have little education. In this relationship, the subject's education is the dependent variable, the parents' education the independent variable. We can say the independent variable is the cause, the dependent variable the effect. (See *Applying Concepts in Everyday Life*, "Independent and Dependent Variables," for more.)

At this point, we can see that our discussion of Figure 1-3 involved the interpretation of data. We looked at the distribution of the 20 people in terms of the two variables. In constructing a social science theory, we would derive an expectation regarding the relationship between the two variables, based on what we know about each. We know, for example, that education exposes people to a wide range of cultural variation and to diverse points of view—in short, it broadens their perspectives. Prejudice, on the other hand,

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**independent variable** A variable with values that are not problematical in an analysis but are taken as simply given. An independent variable is presumed to cause or determine a dependent variable. If we discover that religiosity is partly a function of sex—women are more religious than are men—sex is the independent variable and *religiosity* is the dependent variable. Note that any given variable might be treated as independent in one part of an analysis and as dependent in another part of it. *Religiosity* might become an independent variable in an explanation of crime.

**dependent variable** A variable assumed to depend on or be caused by another (called the independent variable). If you find that *income* is partly a function of *amount of formal education*, *income* is being treated as a dependent variable.



### APPLYING CONCEPTS IN EVERYDAY LIFE

#### Independent and Dependent Variables

Let's talk about dating. Some dates are great and some are awful; others are somewhere in between. So the *quality of dates* is a variable and "great," "OK," and "awful" might be the attributes making up that variable. (If dating isn't a relevant activity for you right now, perhaps you can pretend or substitute something similar.)

Now, have you noticed something that seems to affect the quality of different dates? (If you are not dating, perhaps you can recall prior dating or simply imagine it.) Perhaps it will have something to do with the kind of person you dated, your activities on the date, something about your behavior, the amount of money spent, or the like. Can you give it a name that enables you to identify that factor as a variable (e.g., physical attractiveness, punctuality)? Can you identify a set of attributes comprising that variable?

Consider the *quality* or the *characteristics* of the dates: Which is the independent variable and which is the dependent variable? (When we get to Chapter 12, "Evaluation Research," you'll learn ways of determining whether the variable you identified really matters.)

**TABLE 1-2 Education and Antigay Prejudice**

Level of Education	Percent Saying Homosexuality Is Always Wrong
Less than high school graduate	61%
High school graduate	48%
Junior college	46%
Bachelor's degree	37%
Graduate degree	27%

gays and lesbians. Over the years, the General Social Survey (GSS) has asked respondents whether a homosexual relationship between two adults is "always wrong, almost always wrong, sometimes wrong, or not wrong at all." In 2012, 46 percent of those interviewed said that homosexuality was always wrong. However, this response is strongly related to the respondents' education, as Table 1-2 indicates.

Notice that the theory has to do with the two variables *education* and *prejudice*, not with people as such. People are the carriers of those two variables, so we can see the relationship between the variables only when we observe people. Ultimately, however, the theory uses a language of variables. It describes the associations that we might logically expect to exist between particular attributes of different variables. You can do this data analysis for yourself with nothing more than a connection to the Internet. See the *How to Do It* box "Analyzing Data Online with the General Social Survey (GSS)."

### The Purposes of Social Research

Although Chapter 4 will examine the various purposes of social research in some detail, previewing them here will be useful. To begin, sometimes social research is a vehicle for *exploring* something—that is, mapping out a topic that may warrant further study later. This could involve looking into a new political or religious group, learning something about the use of a new street drug, and so forth. The methods vary greatly and the conclusions are usually suggestive rather than definitive. Still, careful exploratory social research can dispel some misconceptions and help focus future research.

represents a narrower perspective. Logically, then, we might expect education and prejudice to be somewhat incompatible. We might therefore arrive at an expectation that increasing education would reduce the occurrence of prejudice, an expectation that our observations would support.

Because Figure 1-3 has illustrated two possibilities—that education reduces the likelihood of prejudice or that it has no effect—you might be interested in knowing what is actually the case. There are, of course, many types of prejudice. For this illustration, let's consider prejudice against

## HOW TO DO IT

## Analyzing Data Online with the General Social Survey (GSS)

You can test the relationship between prejudice and education for yourself if you have a connection to the Internet. We'll come back to this method for analyzing data later, in Chapter 14, but here's a quick peek in case you're interested.

If you go to <http://sda.berkeley.edu/sdaweb/analysis/?dataset=gss12>, you will find yourself at a web page like the one shown in the figure. As you can see, the page is divided into two sections: a column listing variables on the left, and a form containing a variety of filters, options, and fields on the right. I've indicated how you would work your way into the hierarchical list of variables to locate questionnaire items dealing with attitudes about homosexuality. For this example I've selected HOMOSEX.

In the form on the right, I've indicated that we want to analyze differences in attitudes for different educational levels, measured in this case by the variable called "DEGREE." By typing YEAR(2012) into the Selection Filter field, I've indicated that we want to do this analysis using the GSS survey conducted in 2012.

If you are interested in trying this yourself, fill out the form as I have done. Then, click the button marked "Run the Table" at the bottom of the form, and you'll get a colorful table with the results. Once you've done that, try substituting other variables you might be interested in. Or see if the relationship between HOMOSEX and DEGREE was pretty much the same in, say, 1996.

The National Opinion Research Center (NORC) at the University of Chicago conducts

a periodic national survey of American public opinion for the purpose of making such data available for analysis by the social research community. This comprehensive project is called the General Social Survey.

Beginning in 1972, large national samples were surveyed annually in face-to-face interviews; that frequency was reduced to every other year starting in 1994. Though conducted less often, the GSS interviews are lengthy and each takes over an hour to complete, making it possible to obtain a wide range of information about the demography and the opinions of the American population. The number of topics covered in a given survey is further increased by presenting different questions to different subsets of the overall sample. In the successive surveys, some questions are always asked while others are repeated from time to time. Thus, it is possible to track changes in such things as political orientations, attendance at religious services, or attitudes toward abortion.

The General Social Survey is a powerful resource for social scientists, since everyone from undergraduates through faculty members has access to a vast data set that would otherwise be limited to only a few. In the early years of the GSS, data were made available to the research community by mailing physical datasets (cards or tapes) to researchers. Many data examples in this book come from that source. You can learn more about the GSS at the official website maintained by the University of Michigan.

Some social research is done for the purpose of *describing* the state of social affairs: What is the unemployment rate? What is the racial composition of a city? What percentage of the population holds a particular political view or plans to vote for a certain candidate? Careful empirical description takes the place of speculation and impressions.

Often, social research aims at *explaining* something—providing reasons for phenomena,

in terms of causal relationships. Why do some cities have higher unemployment rates than others? Why are some people more prejudiced than others? Why are women likely to earn less than men for doing the same job? Ordinary, everyday discourse offers an abundance of answers to such questions, but some of those answers are simply wrong. Explanatory social research provides explanations that are more trustworthy.

SDA 4.0 Selected Study: GSS 1972-2012 Cumulative Datafile

Analysis Create Variables Download Custom Subset Search Standard Codebook Codebook by Year of Interview

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**Variable Selection**

Selected:  View

Copy to: Row Col Ctrl Filter

Mode: ☐ Append ☒ Replace

- ▶ CASE IDENTIFICATION AND YEAR
- ▶ RESPONDENT BACKGROUND VARIABLES
- ▶ PERSONAL AND FAMILY INFORMATION
- ▶ ATTITUDINAL MEASURES - NATIONAL PROBLEMS
- ▶ PERSONAL CONCERNS
- ▶ SOCIETAL CONCERNS
- ▶ WORKPLACE AND ECONOMIC CONCERNS
- ▶ CONTROVERSIAL SOCIAL ISSUES
  - ▶ Gender Issues
  - ▶ Abortion
  - ▶ Family Planning, Sex, and Contraception
    - ▶ CHLDIDEL - IDEAL NUMBER OF CHILDREN
    - ▶ CHLDMORE - EXPECT MORE CHILDREN
    - ▶ CHLDNUM - HOW MANY CHILDREN EXPECTED
    - ▶ CHLDSON - CHILDREN EXPECTED IN 5 YEAR
    - ▶ PILL - BIRTH CONTROL INFORMATION
    - ▶ TEENPILL - BIRTH CONTROL INFORMATION TO
    - ▶ PILLOK - BIRTH CONTROL TO TEENAGERS 14-
    - ▶ PILLOK - BIRTH CONTROL TO TEENAGERS 14-
    - ▶ SEXEDUC - SEX EDUCATION IN PUBLIC SCHO
    - ▶ DIVLAW - DIVORCE LAWS
    - ▶ DIVLAWY - DIVORCE LAWS-VERSION Y
    - ▶ SPDUE - EVER ENTITLED TO ALIMONY OR CH
    - ▶ SPAPID - REGULARLY RECEIVED ALIMONY - C
    - ▶ PREMARSX - SEX BEFORE MARRIAGE
    - ▶ TEENSEX - SEX BEFORE MARRIAGE - TEENS
    - ▶ XMARSEX - SEX WITH PERSON OTHER THAN
    - ▶ HOMOSEX - HOMOSEXUAL SEX RELATIONS
    - ▶ HOMOCHNG - HOMOSEXUALITY: INHERENT O
- ▶ Pornography
- ▶ Child Discipline
- ▶ Suicide
- ▶ Activism
- ▶ Violent Experiences
- ▶ Media Exposure
- ▶ Interviewer Observations
- ▶ Experimental Variables
- ▶ Abortion Part Two
- ▶ Working Mothers
- ▶ Women's Rights
- ▶ Race Part Two
- ▶ How Often Think About Topics
- ▶ Recent Traumatic Events
- ▶ Social Issues Scales
- ▶ Important Life Aspects
- ▶ Personal Concerns
- ▶ MILITARY ISSUES
- ▶ OBLIGATIONS AND RESPONSIBILITIES
- ▶ CONFIDENTIALITY AND SOCIAL NETWORKING

**Tables** Means Correl. matrix Comp. correl. Regression Logit/Probit List values

SDA Frequencies/Crosstabulation Program  
Help: [General](#) / [Recoding Variables](#)

Row:  (Required)

Column:

Control:

Selection Filter(s):

Weight:

**Output Options**

Cell contents:  
 Percentaging: ☒ Column ☐ Row ☐ Total

Sample design: ☒ Complex ☐ SRS

☐ Confidence intervals - Level: 95 percent

☐ Standard error of each percent

☐ Design effect (defl) for each percent ☐ Z-statistic

☐ Unweighted N ☒ Weighted N

Other options:  
☐ Summary statistics ☐ Question text ☒ Color coding

☐ Suppress table ☐ Include missing-data values

Title:

**Chart Options**

**Decimal Options**

Run the Table Clear Fields

While some studies focus on one of these three purposes, a given study often has elements of all three. For example, when Kathleen A. Bogle (2008) undertook in-depth interviews of college students to study the phenomenon of “hooking up,” she uncovered some aspects that might not have been expected, fulfilling an exploratory purpose. When two people “hook up,” does that mean they have sex? Bogle found substantial ambiguities in that regard; some students felt

that sex was part of the definition of that dating form, whereas others did not.

Her study also provides excellent descriptions of the students’ various experiences of hooking up. While her in-depth interviews with 76 students at two universities in one region of the country do not allow us to draw quantitative conclusions about all college students in the United States, they provide an excellent qualitative description of the phenomenon, not just

norms but wild variations as well. Not everyone will have interviewee Stephen's experience of his partner throwing up on him during sex, or having her call him Anthony instead of Stephen at a critical moment. (You'll learn more about the difference between "qualitative" and "quantitative" research later.)

Bogel's interviews also point to some of the causes, or explanations, of different kinds of hooking up. For example, the students' *beliefs* about their peers' behavior strongly influenced how they hooked up. Thus, it would be difficult to categorize this study as exploratory, descriptive, or explanatory, as it has elements of all three.

It's worth noting here that the purpose of some research is limited to understanding, whereas other research efforts are deliberately intended to bring about social change, creating a more workable or a more just society.

## The Ethics of Human Inquiry

Most of this book is devoted to the logic and techniques of doing social research, but you'll soon discover an ethical dimension running throughout the discussion. You'll learn that medical, social, and other studies of human beings have often used methods later condemned as unethical. In Chapter 3 and throughout the book, we examine the various concerns that distinguish ethical from unethical research.

The ethical concerns will make more sense to you as you learn more about the actual techniques of doing research. Be sure to consider this important issue as you read each chapter.

## SOME DIALECTICS OF SOCIAL RESEARCH

There is no one way to do social research. (If there were, this would be a much shorter book.) In fact, much of the power and potential of social research lies in the many valid approaches it comprises.

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**idiographic** An approach to explanation in which we seek to exhaust the idiosyncratic causes of a particular condition or event. Imagine trying to list all the reasons why you chose to attend your particular college. Given all those reasons, it's difficult to imagine your making any other choice.

Four broad and interrelated distinctions underlie these approaches. Though these distinctions can be seen as competing choices, a good social researcher thoroughly learns each. This is what I mean by the "dialectics" of social research: a fruitful tension between these complementary concepts.

## Idiographic and Nomothetic Explanation

All of us go through life explaining things. We do it every day. You explain why you did poorly or well on an exam, why your favorite team is winning or losing, why you may be having trouble getting dates. In our everyday explanations, we engage in two distinct forms of causal reasoning, though we do not ordinarily distinguish them.

Sometimes we attempt to explain a single situation in idiosyncratic detail. Thus, for example, you may have done poorly on an exam because (1) you had forgotten there was an exam that day, (2) it was in your worst subject, (3) a traffic jam made you late for class, (4) your roommate had kept you up the night before the exam with loud music, (5) the police kept you until dawn demanding to know what you had done with your roommate's stereo—and with your roommate, for that matter—and (6) a band of coyotes ate your textbook. Given all these circumstances, it is no wonder that you did poorly.

This type of causal reasoning is called an **idiographic** explanation. *Idio* in this context means unique, separate, peculiar, or distinct, as in the word *idiosyncrasy*. When we have completed an idiographic explanation, we feel that we fully understand the causes of what happened in this particular instance. At the same time, the scope of our explanation is limited to the case at hand. Although parts of the idiographic explanation might apply to other situations, our intention is to explain one case fully.

Now consider a different kind of explanation. Every time you study with a group, you do better on an exam than when you study alone. Your favorite team does better at home than on the road. Athletes get more dates than do members of the biology club. Notice that this type of explanation is more general, covering a wider range of experience or observation. It speaks implicitly of the relationship between variables: for



example, (1) whether or not you study in a group and (2) how well you do on the exam. This type of explanation—labeled **nomothetic**—seeks to explain a class of situations or events rather than a single one. Moreover, it seeks to explain “economically,” using only one or just a few explanatory factors. Finally, it settles for a partial rather than a full explanation.

In each of these examples, you might qualify your causal statements with *on the whole, usually, all else being equal*, and the like. Thus, you usually do better on exams when you’ve studied in a group, but not always. Similarly, your team has won some games on the road and lost some at home. And the gorgeous head of the biology club may get lots of dates, while the defensive lineman Pigpen-the-Terminator may spend a lot of Saturday nights alone punching heavy farm equipment. Such exceptions are acceptable within a broader range of overall explanation. As we noted earlier, patterns are real and important even when they are not perfect.

Both the idiographic and the nomothetic approaches to understanding can serve you in your daily life. The nomothetic patterns you discover might offer a good guide for planning your study habits, but the idiographic explanation is more convincing to your parole officer.

By the same token, both idiographic and nomothetic reasoning are powerful tools for social research. Researchers who seek an exhaustive understanding of the inner workings of a particular juvenile gang or the corporate leadership of a particular multinational conglomerate engage in idiographic research: They try to understand that particular group as fully as possible.

A. Libin and J. Cohen-Mansfield (2000) have contrasted the way these two approaches are used in studies of the elderly (gerontology). Some studies focus on the experiences of individuals in the totality of their life situations, whereas other studies look for statistical patterns describing the elderly in general. The authors then suggest ways to combine idiographic and nomothetic approaches in gerontology.

Much social research involves the analysis of masses of statistical data. As valuable as the examination of overall patterns can be, it can come at the risk of losing sight of the individual men and women those data represent. Both

the “macro” and the “micro” are important to our grasp of social dynamics, and some social research focuses specifically on the detailed particulars of real lives at the ground level of society. Throughout this book, I’ll highlight recent studies that reflect this approach to understanding social life.

Statistically, unwed childbirth, especially among the poor in America, is likely to lead to a host of problems in the years that follow. Both the child and the mother are likely to struggle and suffer. The children are less likely to do well in school and later in life, and the mothers are likely to struggle in low-paying jobs or may reconcile themselves to living on welfare. The trend toward unwed births has increased dramatically in recent decades, especially among the poor. As a reaction to these problems, in 2005 the Bush administration launched a “Healthy Marriage Initiative,” aimed at encouraging childbearing couples to marry. Voices for and against the program were raised with vigor.

In *Promises I Can Keep: Why Poor Women Put Motherhood before Marriage* (Berkeley: University of California Press, 2005), Kathryn Edin and Maria Kefalas raise a question that, perhaps, should have been asked before a solution to the perceived problem was promoted: Why do poor women bear children outside of wedlock? The two social scientists spent five years speaking one-on-one with many young women who had borne children out of wedlock. Some of the things the researchers learned dramatically contradicted various common assumptions. Whereas many Americans have bemoaned the abandonment of marriage among the poor, for example, the women interviewed tended to speak highly of the institution, indicating that they hoped to be married one day. Many, however, were willing to settle down only with someone trustworthy and stable. Better to remain unmarried than to enter a bad marriage.

At the same time, these young women felt strongly that their ultimate worth as women centered on their bearing children. Most preferred

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**nomothetic** An approach to explanation in which we seek to identify a few causal factors that generally impact a class of conditions or events. Imagine the two or three key factors that determine which colleges students choose, such as proximity, reputation, and so forth.

being an unmarried mother to being a childless woman, the real tragedy in their eyes. This was only one finding among many that contradicts common assumptions, perhaps even some of your own.

As you can see, social scientists can access two distinct kinds of explanation. Just as physicists treat light as a particle in some experiments and as a wave in others, social scientists can search for relatively superficial universals today and probe the narrowly particular tomorrow. Both are good science, both are rewarding, and both can be fun.

## Inductive and Deductive Theory

Like idiographic and nomothetic forms of explanation, inductive and deductive thinking both play a role in our daily lives. They, too, represent an important variation in social research.

There are two routes to the conclusion that you do better on exams if you study with others. On the one hand, you might find yourself puzzling, halfway through your college career, about why you do so well on exams sometimes but so poorly at other times. You might list all the exams you've taken, noting how well you did on each. Then you might try to recall any circumstances shared by all the good exams and all the poor ones. Did you do better on multiple-choice exams or essay exams? Morning exams or afternoon exams? Exams in the natural sciences, the humanities, or the social sciences? Times when you studied alone or...BAM! It occurs to you that you have almost always done best on exams when you studied with others. This mode of inquiry is known as **induction**.

Inductive reasoning moves from the particular to the general, from a set of specific observations to the discovery of a pattern that

represents some degree of order among all the given events. Notice, incidentally, that your discovery doesn't necessarily tell you *why* the pattern exists—just that it does.

Here's a very different way you might have arrived at the same conclusion about studying for exams. Imagine approaching your first set of exams in college. You wonder about the best ways to study—how much to review, how much to focus on class notes. You learn that some students prepare by rewriting their notes in an orderly fashion. Then you consider whether to study at a measured pace or pull an all-nighter just before the exam. Among these musings, you might ask whether you should get together with other students in the class or just study on your own. You could evaluate the pros and cons of both options.

Studying with others might not be as efficient, because a lot of time might be spent on things you already understand. On the other hand, you can understand something better when you've explained it to someone else. And other students might understand parts of the course you haven't gotten yet. Several minds can reveal perspectives that might have escaped you. Also, your commitment to study with others makes it more likely that you'll study rather than watch the special retrospective.

In this fashion, you might add up the pros and cons and conclude, logically, that you'd benefit from studying with others. It seems reasonable to you, the way it seems reasonable that you'll do better if you study rather than not. Sometimes we say things like this are true "in theory." To complete the process, we test whether they're true in practice. For a complete test, you might study alone for half your exams and study with others for the rest. This procedure would test your logical reasoning.

This second mode of inquiry, **deduction**, moves from the general to the specific. It moves from (1) a pattern that might be logically or theoretically expected to (2) observations that test whether the expected pattern actually occurs. Notice that deduction begins with "why" and moves to "whether," whereas induction moves in the opposite direction.

As you'll see later in this book, these two very different approaches present equally valid avenues for science. Each can stimulate the

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**induction** The logical model in which general principles are developed from specific observations. Having noted that Jews and Catholics are more likely to vote Democratic than are Protestants, you might conclude that religious minorities in the United States are more affiliated with the Democratic party, and then your task is to explain why.

**deduction** The logical model in which specific expectations of hypotheses are developed on the basis of general principles. Starting from the general principle that all deans are meanies, you might anticipate that this one won't let you change courses. This anticipation would be the result of deduction.

research process, prompting the researcher to take on specific questions and to frame the manner in which they are addressed. Moreover, you'll see how induction and deduction work together to provide ever more powerful and complete understandings.

Notice, by the way, that the distinction between the deductive and inductive is not necessarily linked to the nomothetic and idiographic modes. For example, idiographically and deductively, you might prepare for a particular date by taking into account everything you know about the person you're dating, trying to anticipate logically how you can prepare—what kinds of clothing, behavior, hairstyle, oral hygiene, and so forth will likely produce a successful date. Or, idiographically and inductively, you might try to figure out what it was exactly that caused your last date to call 911. A nomothetic, deductive approach arises when you coach others on your “rules of dating,” wisely explaining why their dates will be impressed to hear them expound on the dangers of satanic messages concealed in rock and roll lyrics. When you later review your life and wonder why you didn't date more musicians, you might engage in nomothetic induction. Thus, there are four possible approaches, which are used as much in life as in research.

We'll return to induction and deduction later in the book. At this point, let's turn to a third broad distinction that generates rich variations in social research.

## Determinism versus Agency

The two preceding sections are based implicitly on a more fundamental issue. As you pursue your studies of social research methods, particularly when you examine causation and explanation in data analysis, you will come face to face with one of the most nagging dilemmas in the territory bridging social research and social philosophy: determinism versus agency. As you explore examples of causal social research, this issue comes to a head.

Imagine that you have a research grant to study the causes of racial prejudice. Having created a reasonable measure of prejudice so you can distinguish those with higher or lower degrees of prejudice, you will be able to explore

its causes. You may find, for example, that people living in certain regions of the country are, overall, more prejudiced than those living in other regions. Certain political orientations seem to promote prejudice, as do certain religious orientations. Economic insecurities may increase prejudice and result in the search for scapegoats. Or, if you are able to determine something about your subjects' upbringing—the degree of prejudice expressed by their parents, for example—you may discover more causes of prejudice.

Typically, none of these “causes” will be definitive, but each adds to the likelihood of a subject being prejudiced. Imagine, for example, a woman who was raised in a generally prejudiced region by prejudiced parents. She now holds political and religious views that support such prejudice, and feels at risk of losing her job. When you put all those causes together, the likelihood of such a person being prejudiced is very high.

Notice the significance of the word *likelihood* in this discussion. As indicated earlier in this chapter, social researchers deal with a probabilistic causation. Thus the convergence of all the causes of prejudice just mentioned would produce a high probability that the person in question would appear prejudiced in our measurements. Even though the determinism involved in this approach is not perfect, it is deterministic all the same.

Missing in this analysis is what is variously called “choice,” “free will,” or, as social researchers tend to prefer, “agency.” What happened to the individual? How do you feel about the prospect of being a subject in such an analysis? Let's say you consider yourself an unprejudiced person; are you willing to say you were destined to turn out that way because of forces and factors beyond your control? Probably not, and yet that's the implicit logic behind the causal analyses that social researchers so often engage in.

The philosophical question here is whether humans are determined by their particular environment or whether they feel and act out of their personal choice or agency. I cannot pretend to offer an ultimate answer to this question, which has challenged philosophers and others throughout the history of human consciousness. But I can share the working conclusion I have reached as a result of observing and analyzing human behavior over a few decades.



I've tentatively concluded that (1) each of us possess considerable free choice or agency, but (2) we readily allow ourselves to be controlled by environmental forces and factors, such as those described earlier in the example of prejudice. As you explore the many examples of causal analysis in this book and elsewhere in the social research literature, this giving away of agency will become obvious.

More shocking, if you pay attention to the conversations of daily life—yours as well as those of others—you will find that we constantly deny having choice or agency. Consider these few examples:

“I couldn’t date someone who smokes.”  
 “I couldn’t tell my mother that.”  
 “I couldn’t work in an industry that manufactures nuclear weapons.”

The list could go on for pages, but I hope this makes the point. In terms of human agency, you *could* do any of these things, although you might *choose* not to. However, you rarely explain your behavior or feeling on the basis of choice. If your classmates suggest you join them at a party or the movies and you reply, “I can’t. I have an exam tomorrow,” in fact, you could blow off the exam and join them; but you choose not to. (Right?) However, you rarely take responsibility for such a decision. You blame it on external forces: Why did the professor have to give an exam the day after the big party?

This situation is very clear in the case of love. Which of us ever *chooses* to love someone, or to be in love? Instead, we speak of “falling in love,” sort of like catching a cold or falling in a ditch. The iconic anthem for this point of view is the set of 1913 lyrics, courtesy of songwriter, Joseph McCarthy:

You made me love you.  
 I didn’t want to do it.

As I said at the outset of this discussion, the dilemma of determinism versus agency continues to bedevil philosophers, and you will find its head poking up from time to time throughout

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**tolerance for ambiguity** The ability to hold conflicting ideas in your mind simultaneously, without denying or dismissing any of them.

this book. I can’t give you an ultimate answer to it, but I wanted to alert you to its presence.

The question of *responsibility* is an important aspect of this issue. Although it lies outside the realm of this book, I would like to bring it up briefly. Social research occurs in the context of a sociopolitical debate concerning who is responsible for a person’s situation and their experiences in life. If you are poor, for example, are you responsible for your low socioeconomic status or does the responsibility lie with other people, organizations, or institutions?

Social research typically looks for ways that social structures (from interaction patterns to whole societies), affect the experiences and situations of individual members of society. Thus, your poverty might be a consequence of being born into a very poor family and having little opportunity for advancement. Or the closing of a business, exporting jobs overseas, or a global recession might lie at the root of your poverty.

Notice that this approach works against the notion of agency that we have discussed. Moreover, while social scientists tend to feel social problems should be solved at the societal level—through legislation, for example—this is a disempowering view for an individual. If you take the point of view that your poverty, bad grade, or rejected job application is the result of forces beyond your control, then you are conceding that you have no power. There is more power in assuming you have it than in assuming you are the helpless victim of circumstances. You can do this without denying the power of social forces around you. In fact, you may exercise your individual responsibility by setting out to change the social forces that have an impact on your life. This complex view calls for a healthy **tolerance for ambiguity**, which is an important ability in the world of social research.

## Qualitative and Quantitative Data

The distinction between quantitative and qualitative data in social research is essentially the distinction between numerical and nonnumerical data. When we say someone is intelligent, we’ve made a qualitative assertion. When psychologists and others measure intelligence by IQ scores, they are attempting to quantify such a qualitative assessment. For example, a

psychologist might say that a person has an IQ of 120.

Every observation is qualitative at the outset, whether it be your experience of someone's intelligence, the location of a pointer on a measuring scale, or a check mark entered in a questionnaire. None of these things is inherently numerical or quantitative, but converting them to a numerical form is useful at times. (Chapter 14 deals specifically with the quantification of data.)

Quantification often makes our observations more explicit. It can also make aggregating and summarizing data easier. Further, it opens up the possibility of statistical analyses, ranging from simple averages to complex formulas and mathematical models. Thus, a social researcher might ask whether you tend to date people older or younger than yourself. A quantitative answer to this seems easily attained. The researcher asks how old each of your dates has been and calculates an average. Case closed.

Or is it? Although "age" here represents the number of years people have been alive, sometimes people use the term differently; perhaps for some people "age" really means "maturity." Though your dates may tend to be a little older than you, they may act more immaturely and thus represent the same "age." Or someone might see "age" as how young or old your dates look or maybe the degree of variation in their life experiences, their worldliness. These latter meanings would be lost in the quantitative calculation of average age. Qualitative data are richer in meaning and detail than are quantified data. This is implicit in the cliché, "He is older than his years." The poetic meaning of this expression would be lost in attempts to specify how much older.

This richness of meaning stems in part from ambiguity. If the expression means something to you when you read it, that particular meaning arises from your own experiences, from people you've known who might fit the description of being "older than their years" or perhaps the times you've heard others use that expression. Two things about this phrase are certain: (1) You and I probably don't mean exactly the same thing when we say it, and (2) if I say it, you don't know exactly what I mean, and vice versa.

It might be possible to quantify this concept, however. For example, we might establish a list

of life experiences that would contribute to what we mean by *worldliness*:

- Getting married
- Getting divorced
- Having a parent die
- Seeing a murder committed
- Being arrested
- Being exiled
- Being fired from a job
- Running away with the circus

We might quantify people's worldliness as the number of such experiences they've had: the more such experiences, the more worldly we'd say they were. If we thought of some experiences as more powerful than others, we could give those experiences more points. Once we had made our list and point system, scoring people and comparing their worldliness would be pretty straightforward. We would have no difficulty agreeing on who had more points than whom.

To quantify a concept like worldliness, we need to be explicit about what we mean. By focusing specifically on what we'll include in our measurement of the concept, however, we also exclude any other meanings. Inevitably, then, we face a trade-off: Any explicated, quantitative measure will be more superficial than the corresponding qualitative description.

What a dilemma! Which approach should we choose? Which is more appropriate to social research?

The good news is that we don't need to choose. In fact, we shouldn't. Both qualitative and quantitative methods are useful and legitimate in social research. Some research situations and topics are amenable mostly to qualitative examination, others mostly to quantification. We need both.

However, because these two approaches call for different skills and procedures, you may feel more comfortable with and become more adept in one mode than the other. You'll be a stronger researcher, however, to the extent that you can learn both approaches. At the very least, you should recognize the legitimacy of both.

Finally, you may have noticed that the qualitative approach seems more aligned with idiographic explanations, whereas nomothetic explanations are more easily achieved through quantification. Though this is true, these relationships are not absolute. Moreover, both