



SOCIAL SCIENCE

AN INTRODUCTION TO
THE **STUDY OF SOCIETY**

SIXTEENTH EDITION

ELGIN F. HUNT AND DAVID C. COLANDER



Social Science

Social Science: An Introduction to the Study of Society, Sixteenth Edition approaches social science from a common-sense perspective, rather than from a formalistic social science angle. Readers will see how seemingly diverse disciplines intermingle—anthropology and economics, for example. The goal of the book is to teach students critical thought and problem-solving skills that will allow them to approach social issues in an unbiased manner.

New to this edition are significant updates on:

- Race and the police
- More comparison/contrasts of deviance and criminality
- Alternative pathways in criminal justice
- New technology such as self-driving cars
- Gay marriage
- Refugee and immigration issues in Europe and globally
- China's growing power
- New trade initiatives
- "States" in the Middle East
- Nuclear arms control
- Expanded web-based ancillaries for students and teachers

Elgin Hunt is deceased. He was one of the early authors of this book when it began in the 1930s, and took over as sole author in the 1950s. He continued revising the book until the late 1970s, when David Colander took over.

David Colander received his Ph.D. from Columbia University and was the Christian A. Johnson Distinguished Professor of Economics at Middlebury College, Middlebury, Vermont from 1982 until 2013, when he was appointed Distinguished College Professor at Middlebury. In 2001–2 he was the Kelly Professor of Distinguished Teaching at Princeton University. He has authored, co-authored, or edited over 40 books and 100 articles on a wide range of topics. His books have been translated into a number of different languages, including Chinese, Bulgarian, Polish, Italian, and Spanish. He has been president of both the Eastern Economic Association and History of Economic Thought Society and has been on the editorial boards of numerous journals, including the *Journal of Economic Perspectives* and the *Journal of Economic Education*.



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Social Science

An Introduction to the Study of Society

SIXTEENTH EDITION

Elgin F. Hunt

David C. Colander

 **Routledge**
Taylor & Francis Group
NEW YORK AND LONDON

Sixteenth edition published 2017
by Routledge
711 Third Avenue, New York, NY 10017

and by Routledge
2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

Routledge is an imprint of the Taylor & Francis Group, an informa business

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Library of Congress Cataloging in Publication Data

Names: Hunt, Elgin F., author. | Colander, David C., author.

Title: Social science: an introduction to the study of society/Elgin F. Hunt, David C. Colander.

Description: Sixteenth edition. | New York, NY: Routledge, 2016.

Identifiers: LCCN 2016004028 | ISBN 9781138654259 (hardback) | ISBN 9781138654266 (pbk.) | ISBN 9781315623344 (ebook)

Subjects: LCSH: Social sciences.

Classification: LCC H85.H86 2016 | DDC 300–dc23

LC record available at <http://lcn.loc.gov/2016004028>

First edition published 1955 by MacMillan
Fifteenth edition published 2015 by Pearson

ISBN: 978-1-138-65425-9 (hbk)

ISBN: 978-1-315-62334-4 (ebk)

ISBN: 978-1-138-65426-6 (pbk)

Typeset in Minion-Pro
by Sunrise Setting Ltd., Brixham, UK

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Preface

Social science is taught in diverse ways. Some courses take a global perspective, some an anthropological perspective, some a psychological perspective, some a sociological perspective, and some a historical perspective—to name just a few. In my view, although each individual social science perspective has something to offer, what distinguishes the social science course is that it looks at problems from as many different perspectives as possible, relying on the scholar's educated common sense to choose the perspective that is most useful for a particular problem. The educated common sense perspective is the social science perspective.

Social science is an important course. All too often our educational system rushes students into specializations before the students have an overall picture—before they know where they want to go. Once they have an overall picture, specialization is necessary, but to specialize before having an overall picture is unfair to students. Students who specialize too early don't develop a common sense perspective; they aren't sensitive to the interrelationships and resonances among disciplines. At worst, they become slaves of their discipline's approach. At best, they have the wisdom to recognize that there are many approaches to a problem, but their lack of training forces them to recreate the wheel. Knowledge of the other disciplines would have saved them the trouble and been far more efficient.

That's why I am a strong advocate of the social science course and have been urging colleges to merge their various social science departments into one composite department that focuses more on the interrelationships among the various social sciences than is currently done. The general social science course is one of the most important courses students take in college, and in my view it is a necessary prerequisite to taking courses in specific disciplines. It puts those other social science courses in perspective.

New to This Edition

The reason for the revision? The theory of social science changes slowly. Were this book only about theory, new editions wouldn't be needed. But the book is not primarily about theory; it is about reality, and thus data and discussions about how theory relates to current events need updating. While social science theory changes slowly, political and economic issues change fast. A revision is necessary to keep the discussion and data up to date and to account for important political and economic changes.

Changes include expanded discussion of conflicts about racial bias and the police, more comparisons/contrasts of deviance and criminality, discussions of alternative pathways in criminal justice, discussions of new technology such as self-driving cars, discussion of gay marriage, American political dynasties, refugees and immigration issues in Europe and globally, China's growing power, new trade initiatives, "states" in the Middle East, and nuclear arms control. We also expanded the web-based ancillaries for students and teachers.

These changes were made to strengthen the presentation and to keep the book current. I also reworked sections that reviewers thought needed work and updated all chapters. I added a new chapter on deviance, crime, and society to incorporate important developments into thinking about the way in which blacks are treated by police, and the serious problems in the U.S. criminal justice system. There were also significant changes in the discussion of technology and its effect on the job market. The goal of the revision was to keep the discussions as up to date as possible, but to avoid fads. Many of the changes in the earlier chapters reflected excellent suggestions by reviewers, who help to keep me on my toes, and the book more relevant for students.

Despite all these changes the book remains what it was in the previous edition—a relatively neutral (at least as neutral as I am able to be) common sense overview and introduction to the social sciences and social science thinking about the major issues of our day.

Acknowledgments

As always, the book benefits from the suggestions of reviewers, colleagues, and students who have e-mailed me. I'd like to thank them all. For this edition, I'd specifically like to thank some great reviewers: Victor J. Ingurgio, University of Oklahoma, Norman; Heather Griffiths, Fayetteville State University; Charles Matzke, Michigan State University; and Ted Williams III, Kennedy-King College, City Colleges of Chicago. In addition to those reviewers I want to thank all the professors who sent in suggestions about the revision, including Martin Evans of the University of Toronto. I would also like to specifically thank Tabitha N. Otieno of Jackson State University who helped with updating the ancillaries for the book, and Isabella Cass, a student at Middlebury College who helped with proofreading, updating ancillaries, and providing answers to end-of-chapter questions.

Over the last few editions the reviewers have included William Plants, University of Rio Grande; David S. Schjott, Northwest Florida State College; Emmanuel Agbolosoo, Navajo Community College; Ali Al-Taie, Shaw University; Verl Beebe, Daytona Beach Community College; John Beineke, Kennesaw State College; Thomas J. Bellows, The University of Texas at San Antonio; Dallas A. Blanchard, University of West Florida; Ducarmel Bocage, Howard University; William K. Callam, Daytona Beach Community College; Pam Crabtree, New York University; Bruce Donlan, Brevard Community College; Anthony Douglas, Lornan, Mississippi; Dr. William M. Downs, Georgia State University; Phil A. Drimmel, Daytona Beach Community College; J. Ross Eshleman, Wayne State University; Dana Fenton, City University of New York, Borough of Manhattan Community College; Cyril Francis, Miami Dade College North Campus; Richard Frye, Neuro-Diagnostic Lab, Winchester Memorial Hospital, Winchester, Virginia; Vikki Gaskin-Butler, University of South Florida St. Petersburg; Judy Gentry, Columbus State Community College; Paul George, Miami Dade College; Don Griffin, University of Oklahoma; Heather Griffiths, Fayetteville State University; Charles F. Gruber, Marshall University; Ghulam M. Haniff, St. Cloud State University (Minnesota); Roberto Hernandez, Miami-Dade New World Center; Charles E. Hurst, The College of Wooster; Sharon B. Johnson, Miami Dade College; Kenneth C. W. Kammeyer, University of Maryland; Rona J. Karasik, St. Cloud State University; Lynnel Kiely, Truman College; H. D. Kirkland, Lake City Community College; Patricia E. Kixmiller, Miami Dade College; D. R. Klee, Kansas City, Missouri; Casimir Kotowski, Harry S. Truman City College; Errol Magidson, Richard J. Daley Community College; James T. Markley, Lord Fairfax Community College; Stephen McDougal, University of Wisconsin-La Crosse; David J. Meyer, Cedarville University; Karen Mitchell, University of Missouri; Catherine Montsinger, Johnson C. Smith University; Lynn Mulkey, Hofstra University; Roy Mumme, University of South Florida; Eleanor J. Myatt, Palm Beach

Junior College; Quentin Newhouse Jr., Howard University; Earl Newman, Henry Ford Community College; Annette Palmer, Howard University; Robin Perrin, Pepperdine University; Joseph Pilkington-Duddle, Highland Beach, Florida; William Primus, Miami Dade College, North Campus; Roger Rolison, Palm Beach Community College; William H. Rosberg, Kirkwood Community College; Dan Selakovich, Oklahoma State University; Henry A. Shockley, Boston University; Julie Smith, Mount Aloysius College; Ruth Smith, Miami Dade College; Scharlene Snowden, City University of New York, Medgar Evers College; Ronald Stubbs, Miami Dade College; Larry R. Stucki, Reading Area Community College; Barry Thompson, University of Rio Grande; Judy Thompson, University of Rio Grande; Elizabeth Trentanelli, Miami Dade College; Margaret Tseng, Marymount University; Edward Uliassi, Northeastern University; Angela Wartel, Lewis Clark State College; David Wells, Glendale Community College; Ted Williams, City College of Chicago; W. M. Wright, Lake City Community College; Norman R. Yetman, The University of Kansas; and George Zgourides Primus, Miami Dade College North Campus.

At the end of an earlier edition, I included a sheet for students to grade the book and to send me suggestions for improvement. A number of students did this, and their suggestions have played an important role in shaping the book. Most, I'm happy to say, were highly positive, but a few attacked the book and the course. One particularly memorable student flunked me on just about every chapter and wrote the following:

Until you and this so called science become legitimized I'd rather spend time gorging myself and then vomiting. Guesses, hypotheses, maybes, might be's don't belong in college; they belong in elementary school.

That student obviously read the book, because he is correct: The book doesn't tell the student what is right or wrong, and it does report guesses, hypotheses, and maybes. But that student is wrong about what does and what doesn't belong in college. Guesses, hypotheses, and maybes are precisely what belong in college, because by the time students are in college they can be expected to have the maturity to understand that knowledge is nothing but good guesses, reasonable hypotheses, and logical maybes.

Social science doesn't tell you what's right. It presents the observations and the theories as fairly as it can and lets you decide.

To my knowledge, this is the longest continuing college textbook in the United States. It began in the 1930s when some Chicago professors put together their notes and turned them into a book. It evolved through the 1940s and 1950s into a standard text, and then in the 1960s, Elgin Hunt took it over as the sole author. I took it over in the late 1970s, totally updating and revising it to reflect new developments. I have kept his name on the title to reflect the origins of the book and the fact that it is a collective effort of previous scholars, with a changing group of people working on it.

This edition marked a change in publisher from Pearson to Taylor & Francis. I would like to thank Dean Birkenkamp, Amanda Yee, Darcy Bullock, and Peter Lloyd for their hard work. Finally, I want to thank my family for helping me find the time to work on the book.



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Part I Introduction

Social Science and Its Methods

chapter

1



After reading this chapter, you should be able to:

- Define social science and explain why it is important
- List the various social sciences
- State the nine steps that make up the scientific method
- Discuss some reasonable approaches to problems in social science
- Differentiate the historical method from the case method and the comparative method
- Distinguish educated common sense from common sense
- Explain why a good scientist is always open to new ways of looking at issues

Theories should be as simple as possible, but not more so.

—Albert Einstein

On September 11, 2001, eighteen men boarded airplanes with the intent of crashing them into the World Trade Center, the Pentagon, and the White House or Capitol. They succeeded with three of the planes, causing enormous destruction. The fourth plane crashed, but thanks to passengers who discovered the hijackers' plans and attacked the hijackers, the destruction of the White House or Capitol was prevented. What forces drove the hijackers to undertake such action? What forces led the passengers to organize together to thwart them? What might have prevented the hijackings? Such questions fall under the purview of **social science**—the scientific study of social, cultural, psychological, economic, and political forces that guide individuals in their actions.

Formal social science is relatively new. Nevertheless, a vast amount of information has been accumulated concerning the social life of human beings. This information has been used in building a system of knowledge about the nature, growth, and functioning of human societies. Social science is the name given to that system of knowledge.

All knowledge is (1) knowledge of human beings, including their culture and products, and (2) knowledge of the natural environment. Human culture has been changing, and knowledge about it has been gradually accumulating ever since the far distant time when humans first assumed their distinctively human character. But until rather recent times, this knowledge was not scientific in the modern sense. Scientific knowledge is knowledge that has been systematically gathered, classified, related, and interpreted. Science is concerned with learning the concepts and applying those concepts to particulars, rather than just learning a vast amount of information.

Primitive peoples acquired much of their knowledge unconsciously, just as we today still begin the use of our native language and acquire many of the basic elements in our culture unconsciously. For the most part, they accepted the world as they found it, and if any

Street Smarts and Book Smarts

Many of you are taking this course because you have to as part of your degree requirements. A number of you will be somewhat skeptical about the value of the course, and more broadly, the value of the degree. We are sympathetic to your concerns. There is not a lot in this course that will be directly applicable to finding a job, or increasing your pay. Much of it is simply educated common sense. So why is it required?

The answer is that it provides you with the beginning of “book smarts.” What are “book smarts”? They are the equivalent to “street smarts”—the instinctual knowledge you get about how to operate successfully in your environment. If you put someone in a new environment, he or she will often flounder—say the wrong thing, miss a joke, interpret an action incorrectly. Over time, one gains street smarts by osmosis—by being in the street; you just know this is how you should act. This is how you can push for something.

There is a similar type of business smarts. Kids who grow up in families in business—where parents have good jobs, and come home and talk about what happened at work—absorb business smarts by osmosis. They become part of their interactions. Depending on the nature of the job, business smarts include street smarts, but they also include knowing when to dump the attitude and fit in—to do what the boss thinks needs to be done, even when the boss is, shall we say, stupid. Business smarts also include what might be called book smarts—a knowledge of how to discuss issues and how to make people realize you are smart. This course involves teaching you book smarts. It conveys to you the thinking of individuals who have been most successful in college and who advise governments and businesses.

Learning the individual facts is less important than learning the reasoning approach that these people use—in a way, it is like learning a foreign language. Making it through the course conveys to employers that you understand the process; and when you get an associate or college degree, this signals employers that you have achieved sufficient book smarts to operate in their world, which you have to do if you want a job.

You probably do not want too much book smarts. Business requires a combination of book and street smarts. People with PhDs in some fields, such as English or Humanities, are as problematic for many business management jobs as are those with no degree at all. Those with PhDs analyze things too much for most businesses. In business, what is wanted is people who understand book smarts, but who can integrate those book smarts with street smarts.

How important is such a signal? That depends. If your name is Kareem, Tamika, Rashid, Ebony, Aisha, or Tyrone, you probably need it more than if your name is Kristen, Greg, Neil, Emily, Brett, Anne, or Jill. How do we know that? Because social scientists have shown it through experiments in which they sent out resumes that were identical except for the names. Resumes with “black-sounding” names had only a 6.7 percent chance of receiving a response, while resumes with “white-sounding” names had a 10.1 percent chance. These researchers found the same amount of built-in “name” discrimination in less-skilled jobs, such as cashier and mailroom attendant, as in more heavily skills-based jobs. How do you get around this? By taking a course such as social science and getting a degree, which signals to the employer that you have “book smarts.” We will talk more about these issues in later chapters, but here we just want to point out that it is issues such as these that make up the subject matter of social science.

explanations seemed called for, they invented supernatural ones. Some primitive peoples believed that every stream, tree, and rock contained a spirit that controlled its behavior.

In modern times, our emphasis is on the search for **scientific knowledge**. We have divided human knowledge into a number of areas and fields, and every science represents the systematic collection and study of data in one of these areas, which can be grouped roughly into two major fields—social science and natural science. Each of these fields is subdivided into a number of specialized sciences or disciplines to facilitate more intensive study and deeper understanding. **Social science** is the field of human knowledge that deals with all aspects of the group life of human beings. **Natural science** is concerned with the natural environment in which human beings exist. It includes such sciences as physics and chemistry, which deal with the laws of matter, motion, space, mass, and energy; it also includes the **biological sciences**, which deal with living things. The third field of study is the humanities, which deals with literature, music, art, and philosophy. The **humanities** are closely related to social science in that both deal with humans and their culture. Social science, however, is most concerned with those basic elements of culture that determine the general patterns of human

behavior. The humanities deal with special aspects of human culture and are primarily concerned with our attempts to express spiritual and aesthetic values and to discover the meaning of life. Whereas the social sciences study issues in a systematic, scientific way, the focus of the humanities is more on the emotions and feelings themselves than on the system employed to sharpen that focus.

The importance of social science goes far beyond the specific social sciences. It is social science thinking that underlies much of the law as well as our understanding of international relations and government. All these fields are the natural by-products of social science inquiry. Thus, a knowledge of social science is necessary for anyone trying to understand current world events.

Social Science

No field of study is more important to human beings than the social sciences. It helps us not only understand society, but also helps us avoid conflict and lead more fulfilling lives. Albert Einstein nicely summed it up: “Politics is more difficult than physics and the world is more likely to die from bad politics than from bad physics.”

Because all expressions of human culture are related and interdependent, to gain a real understanding of human society we must have some knowledge of all its major aspects. If we concentrate on some aspects and neglect others, we will have a distorted picture. But social science today is such a vast complex that no one student can hope to master all of it. Thus, social science itself has been broken up into anthropology, sociology, history, geography, economics, political science, and psychology. (The boxes in this chapter provide a brief introduction to each of these disciplines.)

This list of social science disciplines is both too broad and too narrow. It is too broad because parts of the fields of history, geography, and psychology should not be included as social sciences. For instance, parts of history belong in the humanities, and parts of psychology belong in the natural sciences. The list is too narrow because new social sciences are emerging, such as cognitive science and sociobiology, which incorporate new findings and new ways of looking at reality. (See the box on The Evolving Social Sciences.)

Because all knowledge is interrelated, there are inevitable problems in defining and cataloging the social sciences. Often, it is difficult to know where one social science ends and another begins. Not only are the individual social sciences interrelated, but the social sciences as a whole body are also related to the natural sciences and the humanities. The strains of the old song, “The hip bone’s connected to the thigh bone, . . .” are appropriate to the social sciences. To understand history, it is helpful, even necessary, to understand geography; to understand economics, it is necessary to understand psychology. Similar arguments can be made for all of the social sciences.

One of the difficulties in presenting definitions and descriptions of the various social sciences is that social scientists themselves do not agree on what it is they do, or should be doing. In preparing this chapter, we met with groups of social scientists specializing in specific fields and asked them to explain what distinguishes their field from others. There was little agreement among specialists in a particular social science, let alone among all social scientists. A cynic once said, “Economics is what economists do.” If we replaced “economics” and “economists” with any of the other social sciences and its practitioners, we would have as good a definition as possible. Unfortunately, it would not be very helpful to those who do not know what social scientists do.

One important difference among the individual social scientists did come out of these discussions: Even when two social scientists are considering the same issue, because their training is different, they focus on different aspects of that problem. Geographers fixate on spaces and spatial relativities, economists on market incentives, and political scientists on

The Evolving Social Sciences

The themes of this book are evolution and change. Thus, it would be surprising if the divisions among the social sciences that currently exist still remain ten years from now. Indeed, with the development of new technology and technological advances in the physical sciences, the distinction among the various sciences is blurring and new sciences are developing. As these fields develop, the boundaries of the various social sciences change.

Interaction among the various social sciences is creating new fields, such as economic psychology, psychological economics, and sociopolitical anthropology. In economics and political science, too, a group of economists is calling for the reintegration of these two fields into political economy, and some schools do have departments of political economy.

Change is also occurring in the natural sciences, and there is interaction between the natural and social sciences. New developments in genetic theory, which will be discussed in Chapter 2, have caused many to believe it is time for a new social science, called cognitive science,

which combines psychology, linguistics, philosophy, social anthropology, and molecular biology. Although it is still in the process of formation, a tentative definition of **cognitive science** is the study of how the mind identifies problems and how it solves those problems. For instance, there are more ways to write the letter *s* than there are people who know how to write that letter (all people who write, plus the printing press and computer software and innumerable typefaces designed for them). Let us identify the problem as how to recognize the letter *s* when we see it. We know the result of the exercise: Everyone who knows how to read can instantly recognize most renditions of the letter *s* (the handwriting of a few college students and some physicians excepted). But we do not currently know *how* we do it. Or, how do you distinguish the face of your roommate from the face of your mother, from the face of the letter carrier, from the face of Brad Pitt? There has been speculation about how the mind works for almost as long as there have been minds, theories, and even experiments, but few specific riddles have been conclusively solved. Cognitive science is making inroads in answering such questions.

group decision making. Thus, although we might not be able to define, unambiguously, the domains of the various social sciences, we can give you a sense of the various approaches as we consider issues from various perspectives throughout the book.

The study of social science is more than the study of the individual social sciences. Although it is true that to be a good social scientist you must know each of those components, you must also know how they interrelate. By specializing too early, social scientists can lose sight of the interrelationships that are so essential to understanding modern problems. That is why it is necessary to have a course covering all the social sciences.

To understand how and when social science broke up, you must study the past. Imagine for a moment that you're a student in 1062, in the Italian city of Bologna, site of one of the first major universities in the Western world. The university has no buildings; it consists merely of a few professors and students. There is no tuition fee. At the end of a professor's lecture, if you like it, you pay. And if you don't like it, the professor finds himself without students and without money. If we go back still earlier, say to Greece in the sixth century B.C., we can see the philosopher Socrates walking around the streets of Athens, arguing with his companions. He asks them questions, and then other questions, leading these people to reason the way he wants them to reason (this became known as the *Socratic method*).

Times have changed since then; universities sprang up throughout the world and created colleges within the universities. Oxford, one of the first universities, now has thirty-eight colleges associated with it, and the development and formalization of educational institutions has changed the roles of both students and faculty. As knowledge accumulated, it became more and more difficult for one person to learn, let alone retain, it all. In the sixteenth century, one could still aspire to know all there was to know, and the definition of the Renaissance man (people were even more sexist then than they are now) was one who was expected to know about everything.

Unfortunately, at least for someone who wants to know everything, the amount of information continues to grow exponentially, while the size of the brain has grown only slightly. The way to deal with the problem is not to try to know everything about everything. Today we must specialize. That is why social science separated from the natural sciences and

why social science, in turn, has been broken down into various subfields, such as anthropology and sociology.

There are advantages and disadvantages to specialization, and many social problems today are dealt with by teams of various social scientists. Each brings his or her specialty to the table. For example, one of the authors is an economist but works on projects with geographers, sociologists, anthropologists, political scientists, and psychologists. He wrote his most recent book with a physicist. More and more interdisciplinary majors are being created; one of the authors of this book teaches in both the economics department and the international politics and economics department at his school. Interdisciplinary graduate schools of public policy have grown enormously. In these programs, students study all the social sciences while specializing in one. Figure 1.1 provides a graphic overview of the evolution of knowledge and the present social sciences starting with Greece; we could have started earlier, since the Greeks took much of their knowledge from the Middle East and Asia, but we had to cut it off somewhere. (The appendix at the end of this chapter expands on the ideas in this diagram.)

Social Science as a System of Rules

Today the amount of knowledge is increasing faster than ever. How, then, can a unified social science theory ever be formulated? The answer is found in abstraction and the ability to discover rules or relationships (rather than simply facts) and rules relating rules to other rules.

To understand the importance of knowing rules, think back to grade school when you learned addition. You didn't memorize the sum of 127 and 1,448. Instead you learned an algorithm (a fancy name for a rule) about adding ($7 + 8 = 15$; write down the 5 and carry the 1...). Then you had to memorize only a few relationships. By changing the number system from a base ten system to a binary system (0 and 1 are the only numbers), you cut substantially the amount of memorization (all you need to know is $0 + 0 = 0$; $0 + 1 = 1$; and $1 + 1 = 10$) and you could apply the same rule again and again, adding all possible numbers (an insight that played an important role in the development of the computer). Knowing the rules saved you from enormous amounts of memorization, but nonetheless gave you access to a large amount of information.

Another way to look at the problem is to think of the library. If you have a small library, you can know nearly everything in it, but once your library gets larger, you will quickly find that having more books makes it harder to know what's in there. However, if you put in place a filing system, such as the Dewey decimal system or the Library of Congress system, you can access the books through a filing system. The rules of the filing system give you the key to great amounts of information, just as the rules of addition, subtraction, or algebra do. General rules, once learned, can be applied to large numbers of particulars. The higher you go (rules about rules about rules), the more you can know with less memorization.¹

Anthropology

Anthropology is the study of the relationship between biological traits and socially acquired characteristics. Sometimes called the study of humans, it consists of two broad fields:

1. Physical anthropology
2. Cultural anthropology

Some of the concerns of physical anthropology are:

- Influence of the evolution of the natural environment on the physical characteristics of humans
- Human evolution: how modern *homo sapiens* evolved from earlier species

Some of the concerns of cultural anthropology are:

- Archaeology, or the remains of extinct civilizations that left no written records
- Organization of preliterate societies
- Characteristics of subgroups or subcultures within contemporary society

Among the topics that interest anthropologists are excavation of formerly inhabited sites, fossils, the gene pool, technology and artifacts, linguistics, values, and kinship.

¹ It was an architect, Ludwig Mies van der Rohe, who compressed such exposition into a famous statement, "Less is more."

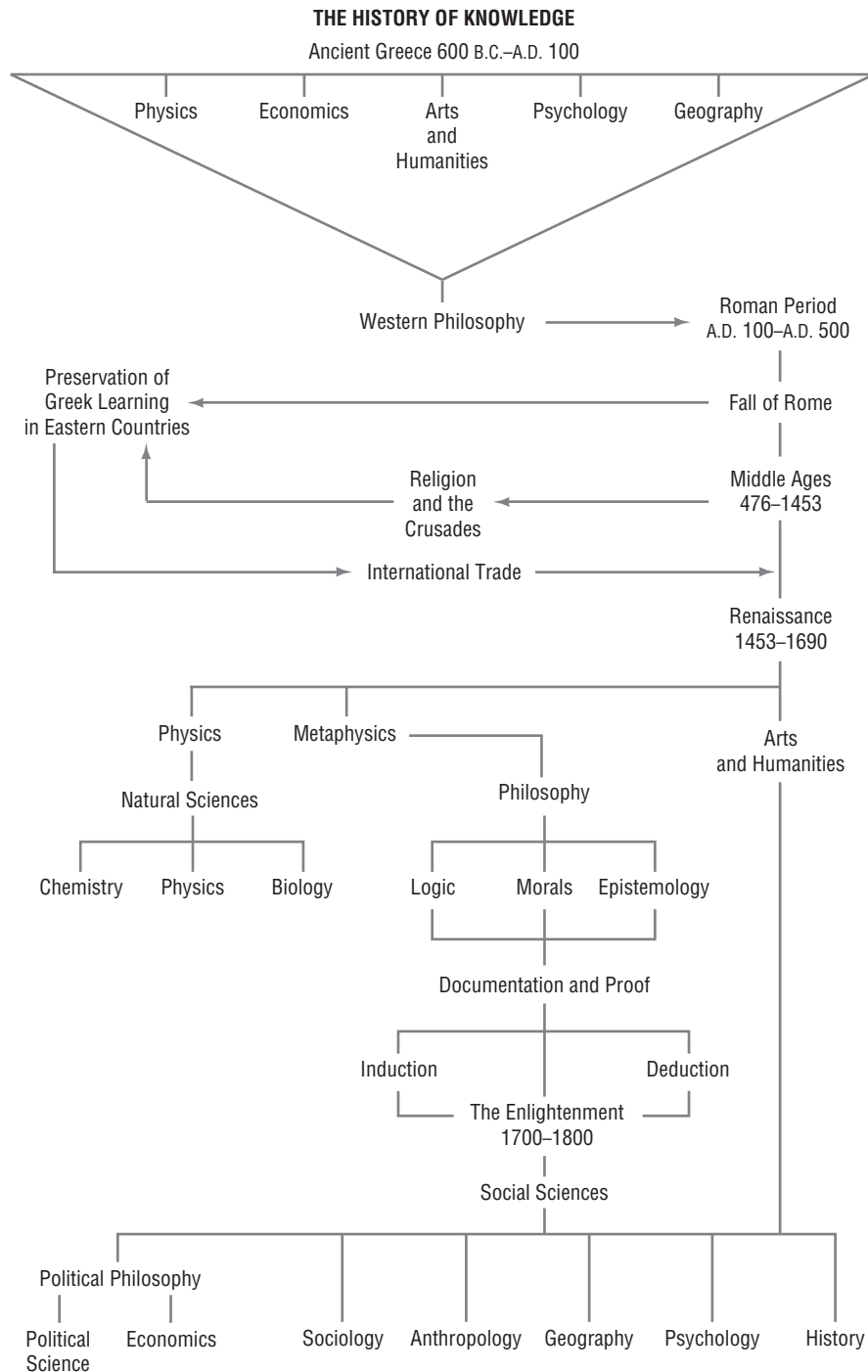


Figure 1.1

Knowledge at a glance. The development of knowledge is messy, but assuming that a picture is worth a thousand words, we offer this sketch of the development of knowledge. Maybe it's worth five hundred words.

Sociology

Sociology is the systematic study of relationships among people. Sociologists assume that behavior is influenced by people's social, political, occupational, and intellectual groupings and by the particular settings in which they find themselves at one time or another. Sociologists differ in their approach. Their three major choices are:

1. Functionalism
2. Conflict
3. Interactionism

Sociology's vast subject matter can be identified as a study of people:

- Where they collect
- How they socialize and organize
- Whom they include in and exclude from their groups
- What they do to their environment
- When they confront formulas for control, such as politics, law, finance, religion, education, and social pressures
- Why they change

Geography

Geography is the study of the natural environment and how the spatial interactions of individuals influence social and cultural development. Some of the concerns of geography are:

- Ecology
- Climate
- Resources
- Accessibility
- Demography

Geography has practical applications manifest in:

- Maps
- Trade patterns
- Industrial and agricultural decisions
- Settlement of population
- Aggression and acquisition

All this is relevant to social science because social science is held together by rules or relationships. If there is to be a unified social science theory, it will be because some student started thinking about rules and how the rules of the various social sciences can fit together. If you understand the general concepts, you can apply them in a variety of circumstances. Thus the future "unified social scientists" will not necessarily know all the facts of a particular social science. Each of the specialties will retain its identity and will likely become even more specialized. But as that specialization occurs, it creates the need for a new specialization that concentrates on tying together the various component parts of social science. The new unified social scientists will know the general rules of the individual social sciences and the rules of how one social science interacts with another, but they will not know all the specific facts of any one of them.

The preceding argument is a heavy one to throw at you in the first pages of a textbook because it asks you not only to know the lessons of the individual social sciences, but also to go beyond and strive for an understanding of their synthesis. Going beyond is ultimately what learning is all about and what makes it so challenging. We would like to be able to say that we can guide you to a unified social science theory, but the truth is that all we can do is give you a boost and encouragement. After surveying the social sciences, you can decide in which one, if any, you want to specialize; whether you should work toward tying them all together; or whether you should bag the whole approach and go into a pre-med program.

The Scientific Method and Its Application

The **scientific method** is a set of rules about how to establish rules. The use of the scientific method is perhaps the most important tool you can have in studying social science because it enables you not only to learn the lessons of the individual social sciences, but also to go beyond and strive for an understanding of their synthesis.

Conditions Favorable to Scientific Inquiry. Scientific inquiry is possible only in a society in which certain attitudes are developed or tolerated. Successful scientific investigation requires from the investigator not only intelligence but certain mental attitudes as well. One of these is curiosity, which makes people ask

two questions: Why? and How? Another is skepticism, which makes people reexamine past explanations and reevaluate past evidence. To reexamine and reevaluate, investigators need objectivity, which enables them to seek impartially for the truth, to make every effort not to

History

History is the study of past events. It is a social science in the sense that it is a systematic attempt to learn about and verify past events and to relate them to one another and to the present. Every event has a historical context within which we commonly say the event must be studied. The subject matter of history is everything that has already happened. The study of history involves:

- Identifying
- Classifying
- Arranging
- Patterning

The fruits of the study of history are:

- Imposition of order
- Appreciation of variety
- Possibilities of prediction
- Realization of limitation

allow personal preconceptions, prejudices, or desires to color the observed facts or influence the interpretation of those facts. When these three attitudes—curiosity, skepticism, and objectivity—come together, scientific inquiry can flourish.

In preliterate tribal societies, the obstacles to the development of scientific methods of inquiry are very great. Such societies are much more bound by custom and tradition than are modern societies. The traditional way of doing things is regarded as the only right way. Moreover, any serious deviation from established procedures is likely to be regarded as a danger to the group.

We cannot classify Europe in the Middle Ages as either preliterate or tribal. Nevertheless, respect for tradition, for ancient authorities, and for religious dictates was so strong then that the growth of a scientific spirit was stunted. The free development of modern science had to wait until such events as the Crusades, the Renaissance, the great voyages of discovery, and the Reformation had loosened the hold of tradition.

Nature of the Scientific Method. Modern science is based on the assumption that this is an orderly universe, ruled by the law of cause and effect. Any given set of circumstances always produces the same result. If seemingly identical situations have different results, they were not really alike; some significant difference existed and was overlooked. Further investigation should disclose what this difference was.

Science offers no final explanations of the universe and its phenomena. Time, space, matter, energy—existence itself—are mysteries the ultimate nature of which is probably forever beyond the grasp of the human search. But an accepted scientific theory may be regarded as an explanation, up to a certain point, of a scientific law.

Scientific investigation is seldom simple. Each field of knowledge has its special problems, and investigators must always adjust their methods to the peculiarities of the situation they are dealing with. A method of investigation that is of great importance in some fields is the setting up and carrying out of controlled experiments.

The Experimental Method and Its Limitations. The **experimental method** is a method of separating out causal factors. It consists of running an experiment many times with only one variant. If the results of the experiments are different, that one variant is most likely the cause.² In chemistry, physics, and biology, such controlled experiments play an important role in discovering facts and testing hypotheses. In these sciences, an investigator can create a situation in which all the significant factors that bear on a problem can be controlled.

There are, however, limits to the use of the experimental method when a scientist cannot control the situations that are significant for the solution of problems. In the social sciences, less use can be made of the method of controlled experiment, except in dealing with certain relationships that involve rather small groups, because the investigator cannot control the situations. For example, one way to prove or disprove the proposition that high tariffs bring prosperity would be to apply very heavy tariffs to all goods entering the United States for a

² But it is always possible that some other factor was not “held constant.” If you remember chemistry experiments in high school, you know how hard it is to keep all other things constant.

The Saga of Hans, the Thinking Horse

The scientific method can be seen in the saga of Hans, the Thinking Horse. Around 1900, according to reports published in a Berlin, Germany, newspaper, there was a horse that was good at math, and when his owner asked him math questions, the horse could answer by tapping out the correct number with one of his front hooves. People who witnessed the horse's ability were puzzled, and they called in a number of social scientists to investigate the phenomenon. To their amazement, they found that not only could Clever Hans, as he was known, add and subtract when his owner asked him, but he also could calculate square roots. The social scientists were convinced that, against all odds, they had indeed been shown a thinking horse.

Another social scientist, though, a skeptical young psychologist by the name of Oskar Pfungst, had a different idea. He retested Hans, asking a set of questions to which Pfungst himself did not know the answers. He discovered that although Hans succeeded on nearly every question if the questioner knew the answer, the horse failed nearly every question when the questioner did not know the

answer. A social scientist's skepticism had shown that Hans could not really reason, even though it seemed as if he could. This true story demonstrates the important trait of skepticism. The scientific community declared that Hans was just a horse.

But a quality those scientists did not show was imagination. Even though Hans could not think and reason, he had an amazing ability: He could almost read minds. When it came to people who knew the answers to the questions they were asking, he could monitor changes in his questioners' posture, their breathing, their facial expressions, and their inflections and speech patterns. He could interpret the signals they were sending and then provide the responses they wanted. This is an ability that some humans have—although generally to a lesser degree than Hans—and it is an ability that can supplement thinking. Yet it was only at the end of the twentieth century that comparative psychologists showed the imagination to start analyzing this kind of ability in detail.

The lack of imagination exhibited by some scientists in the past limited the scope of the scientific programs they followed. A good scientist must have both skepticism and imagination.

considerable period of time, while holding constant all other factors affecting business activity. If a sustained increase in prosperity followed, we would then have substantial evidence to support the thesis that high duties are a cause of prosperity. No investigator, let us say an economist, can control the country's tariff policy; and even if she could, while the high tariff was in effect many other social changes would be taking place, such as strikes, the establishment of new industries, and perhaps even wars. Some of these other changes would doubtless have much more influence on the state of national prosperity than would the high tariff and would make it impossible to separate out the effects of the high tariff from the effects of all these other events.

Most problems of interest to social scientists involve very large groups of people, often society as a whole. Controlled experiments cannot be used to solve such problems. When, however, social scientists can gain insight into a problem through laboratory and field experiments, they can, at least partially, control the environment. For example, often firms on Google use field experiments, randomly varying the way an advertisement is presented to people. One ad might state "one-half off"; the other might state "50 percent off." Although these have the same meaning, the way people respond to them is not necessarily the same. The firms then analyze the results and structure future ads to reflect the presentation that was most effective. Every time you are on the Internet, you provide opportunities for firms to conduct field experiments to figure out how to make more money off you. Social scientists also study natural experiments, which occur when two similar areas or entities choose different policies, and the effects of the different policies can be systematically studied. With natural experiments, researchers do not get perfect control, but they get some.

Additionally, social scientists use laboratory experiments, in which they have people come into the lab, where they study their behavior, and then relate that behavior to other information they can find about them. One of the most famous of these is known as the Stanford Marshmallow Experiment, in which psychologists studied 4-year-olds' ability to