CENGAGE

The Practice of Social Research

15th Edition

Earl Babbie

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

The Practice of Social Research

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

A Note from the Author

Earl Babbie

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.

I grew up in small-town Vermont and New Hampshire. When I announced that 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.

While no longer in residence at Chapman University, I maintain an active participation there as an Emeritus Professor. Also, upon my retirement, Chapman established an undergraduate research center, which they generously named the Earl Babbie Research Center. The Center keeps me actively participating with friends and colleagues at Chapman.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

FIFTEENTH EDITION

The Practice of Social Research

Earl Babbie

Chapman University

CENGAGE

Australia • Brazil • Mexico • Singapore • United Kingdom • United States

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

This is an electronic version of the print textbook. Due to electronic rights restrictions, some third party content may be suppressed. Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. The publisher reserves the right to remove content from this title at any time if subsequent rights restrictions require it. For valuable information on pricing, previous editions, changes to current editions, and alternate formats, please visit www.cengage.com/highered to search by ISBN#, author, title, or keyword for materials in your areas of interest.

Important Notice: Media content referenced within the product description or the product text may not be available in the eBook version.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

The Practice of Social Research,
Fifteenth Edition
Earl Babbie

Product Director: Laura Ross

Associate Product Manager: Kori Alexander

Product Assistant: Shelby Blakey

Learning Designer: Emma Guiton

Senior Content Manager: Kathy Sands-Boehmer

Digital Design Lead: Matt Altieri

IP Analyst: Deanna Ettinger

Marketing Manager: Tricia L. Salata

Senior Marketing Development Manager: Nicole Hurst

Art Director: Nadine Ballard

Manufacturing Planner: Karen Hunt

Production Service: MPS Limited

Cover Designer: Nadine Ballard

Cover Image: cigdem/ShutterStock.com

© 2021 Cengage Learning, Inc.

WCN: 02-300

ALL RIGHTS RESERVED. No part of this work covered by the copyright herein may be reproduced or distributed in any form or by any means, except as permitted by U.S. copyright law, without the prior written permission of the copyright owner.

For product information and technology assistance, contact us at
Cengage Customer & Sales Support, 1-800-354-9706
or **support.cengage.com.**

For permission to use material from this text or product, submit all requests online at **www.cengage.com/permissions.**
Further permissions questions can be e-mailed to
permissionrequest@cengage.com.

Library of Congress Control Number: 2020932559

Student Edition:
ISBN 13: 978-0-357-36076-7
ISBN 10: 0-357-36076-1

Loose-leaf Edition:
ISBN: 978-1-305-67711-1

Cengage
200 Pier 4 Boulevard
Boston, MA 02210
USA

Cengage is a leading provider of customized learning solutions with employees residing in nearly 40 different countries and sales in more than 125 countries around the world. Find your local representative at **www.cengage.com.**

Cengage products are represented in Canada by
Nelson Education, Ltd.

To learn more about Cengage platforms and services, register or access your online learning solution, or purchase materials for your course, visit **www.cengage.com.**

Printed in the United States of America
Print Number: 01 Print Year: 2020

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Dedication

Suzanne Babbie

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Contents in Brief

PART 1

An Introduction to Inquiry

1 Human Inquiry and Science 2
2 Paradigms, Theory, and Research 29
3 The Ethics and Politics of Social Research 60

PART 2

The Structuring of Inquiry: Quantitative and Qualitative

4 Research Design 88
5 Conceptualization, Operationalization, and Measurement 124
6 Index, Scales, and Typologies 158
7 The Logic of Sampling 187

PART 3

Modes of Observation

8 Experiments 228
9 Survey Research 249
10 Qualitative Field Research 289
11 Unobtrusive Research 325
12 Evaluation Research 355

PART 4

Analysis of Data: Quantitative and Qualitative

13 Qualitative Data Analysis 384
14 Quantitative Data Analysis 415
15 The Logic of Multivariate Analysis 439
16 Social Statistics 457
17 Reading and Writing Social Research 491

Appendixes

A Using the Library 516
B Random Numbers 523
C Distribution of Chi Square 525
D Normal Curve Areas 527
E Estimated Sampling Error 528

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Contents in Detail

Preface xix
Acknowledgments xxv
A Letter to Students *from* This Book xxvii

Part 1 An Introduction to Inquiry

CHAPTER 1

Human Inquiry and Science 2

Introduction 3

What do you think? 4

Looking for Reality 4

Knowledge from Agreement Reality 4
Ordinary Human Inquiry 5
Tradition 6
Authority 6
Errors in Inquiry and Some Solutions 7

The Foundations of Social Science 8

Theory, Not Philosophy or Belief 10
Social Regularities 10
Aggregates, Not Individuals 12
Concepts and Variables 13
The Purposes of Social Research 18
The Ethics of Human Inquiry 18

Some Dialectics of Social Research 19

Idiographic and Nomothetic Explanation 19
Inductive and Deductive Theory 22
Determinism versus Agency 24
Qualitative and Quantitative Data 25

What do you think?...Revisited 27

The Research Proposal 27

CHAPTER 2

Paradigms, Theory, and Research 29

Introduction 30

What do you think? 31

Some Social Science Paradigms 32

Macrotheory and Microtheory 33
Early Positivism 33
Conflict Paradigm 34
Symbolic Interactionism 34
Ethnomethodology 35
Structural Functionalism 35
Feminist Paradigms 37
Critical Race Theory 38
Rational Objectivity Reconsidered 39

Elements of Social Theory 41

Two Logical Systems Revisited 43

The Traditional Model of Science 43
Deduction and Induction Compared 47

Deductive Theory Construction 51

Getting Started 51
Constructing Your Theory 51
An Example of Deductive Theory: Distributive Justice 51

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Inductive Theory Construction 53
An Example of Inductive Theory: Why Do People Smoke Marijuana? 54
The Links between Theory and Research 55
The Importance of Theory in the "Real World" 56
Research Ethics and Theory 56
What do you think?...Revisited 57

CHAPTER 3
The Ethics and Politics of Social Research 60
Introduction 61
What do you think? 62
Ethical Issues in Social Research 62
Voluntary Participation 63
No Harm to the Participants 64
Anonymity and Confidentiality 67
Deception 70
Analysis and Reporting 71
Institutional Review Boards 72
Professional Codes of Ethics 74
Two Ethical Controversies 76
Trouble in the Tearoom 77
Observing Human Obedience 77
The Politics of Social Research 79
Objectivity and Ideology 79
Politics with a Little "p" 83
Politics in Perspective 84
What do you think?...Revisited 85

Part 2 The Structuring of Inquiry: Quantitative and Qualitative

CHAPTER 4
Research Design 88
Introduction 89
What do you think? 90
Three Purposes of Research 90
Exploration 91
Description 91
Explanation 92
Idiographic Explanation 92
The Logic of Nomothetic Explanation 93
Criteria for Nomothetic Causality 94
Nomothetic Causal Analysis and Hypothesis Testing 95
False Criteria for Nomothetic Causality 96
Necessary and Sufficient Causes 96
Units of Analysis 97
Individuals 99
Groups 99
Organizations 100
Social Interactions 100
Social Artifacts 100
Units of Analysis in Review 102
Faulty Reasoning about Units of Analysis: The Ecological Fallacy and Reductionism 102
The Time Dimension 105
Cross-Sectional Studies 105
Longitudinal Studies 106
Approximating Longitudinal Studies 109
Examples of Research Strategies 111
Mixed Modes 112
How to Design a Research Project 112
Getting Started 114
Conceptualization 115
Choice of Research Method 115
Operationalization 115
Population and Sampling 115
Observations 116
Data Processing 116
Analysis 116
Application 117
Research Design in Review 117
The Research Proposal 118
Elements of a Research Proposal 118
What do you think?...Revisited 120
The Ethics of Research Design 120

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

CHAPTER 5

Conceptualization, Operationalization, and Measurement 124

Introduction 125
Measuring Anything That Exists 125
What do you think? 126
- Conceptions, Concepts, and Reality 127
- Concepts as Constructs 128

Conceptualization 129
- Indicators and Dimensions 130
- The Interchangeability of Indicators 132
- Real, Nominal, and Operational Definitions 132
- Creating Conceptual Order 134
- An Example of Conceptualization: The Concept of Anomie 135

Definitions in Descriptive and Explanatory Studies 137
Operationalization Choices 138
- Range of Variation 138
- Variations between the Extremes 139
- A Note on Dimensions 140
- Defining Variables and Attributes 140
- Levels of Measurement 141
- Single or Multiple Indicators 145
- Some Illustrations of Operationalization Choices 146
- Operationalization Goes On and On 147

Criteria of Measurement Quality 148
- Precision and Accuracy 148
- Reliability 148
- Validity 151
- Who Decides What's Valid? 153
- Tension between Reliability and Validity 154

What do you think?...Revisited 155
The Ethics of Measurement 155

CHAPTER 6

Index, Scales, and Typologies 158

Introduction 159
What do you think? 160
Indexes versus Scales 160
Index Construction 162
- Item Selection 162
- Examination of Empirical Relationships 163
- Index Scoring 168
- Handling Missing Data 170
- Index Validation 173
- The Status of Women: An Illustration of Index Construction 176

Scale Construction 177
- Bogardus Social Distance Scale 177
- Thurstone Scales 178
- Likert Scaling 179
- Semantic Differential 180
- Guttman Scaling 181

Typologies 183
What do you think?...Revisited 185

CHAPTER 7

The Logic of Sampling 187

Introduction 188
What do you think? 189
A Brief History of Sampling 190
- President Alf Landon 190
- President Thomas E. Dewey 191
- Two Types of Sampling Methods 192

Nonprobability Sampling 192
- Reliance on Available Subjects 192
- Purposive or Judgmental Sampling 193
- Snowball Sampling 193
- Quota Sampling 194
- Selecting Informants 195

The Logic and Techniques of Probability Sampling 196
- Conscious and Subconscious Sampling Bias 197
- Representativeness and Probability of Selection 198
- Random Selection 200
- Probability Theory, Sampling Distributions, and Estimates of Sampling Error 200

Populations and Sampling Frames 208
- Review of Populations and Sampling Frames 212

Types of Sampling Designs 212
- Simple Random Sampling 213

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Systematic Sampling 215
Stratified Sampling 216
Implicit Stratification in Systematic Sampling 218
Illustration: Sampling University Students 218
Sample Modification 218

Multistage Cluster Sampling 219
Multistage Designs and Sampling Error 220
Stratification in Multistage Cluster Sampling 221
Probability Proportionate to Size (PPS) Sampling 222
Disproportionate Sampling and Weighting 223

Probability Sampling in Review 225

The Ethics of Sampling 225

What do you think?...Revisited 226

Part 3 Modes of Observation

CHAPTER 8

Experiments 228

Introduction 229

Topics Appropriate for Experiments 229

What do you think? 230

The Classical Experiment 230
Independent and Dependent Variables 230
Pretesting and Posttesting 231
Experimental and Control Groups 232
The Double-Blind Experiment 233

Selecting Subjects 234
Probability Sampling 234
Randomization 235
Matching 235
Matching or Randomization? 236

Variations on Experimental Design 237
Preexperimental Research Designs 237
Validity Issues in Experimental Research 238

Examples of Experimentation 242

Web-Based Experiments 244

"Natural" Experiments 244

Strengths and Weaknesses of the Experimental Method 246

Ethics and Experiments 246

What do you think?...Revisited 247

CHAPTER 9

Survey Research 249

Introduction 250

Topics Appropriate for Survey Research 250

What do you think? 251

Guidelines for Asking Questions 251
Choose Appropriate Question Forms 252
Make Items Clear 253
Avoid Double-Barreled Questions 253
Respondents Must Be Competent to Answer 253
Respondents Must Be Willing to Answer 254
Questions Should Be Relevant 254
Short Items Are Best 254
Avoid Negative Items 254
Avoid Biased Items and Terms 255

Questionnaire Construction 256
General Questionnaire Format 256
Formats for Respondents 256
Contingency Questions 257
Matrix Questions 258
Ordering Items in a Questionnaire 259
Questionnaire Instructions 259
Pretesting the Questionnaire 260
A Sample Questionnaire 260

Self-Administered Questionnaires 263
Mail Distribution and Return 263
Monitoring Returns 264
Follow-up Mailings 265
Response Rates 265
Compensation for Respondents 266
A Case Study 267

Interview Surveys 268
The Role of the Survey Interviewer 268
General Guidelines for Survey Interviewing 269
Coordination and Control 271

Telephone Surveys 273
Positive and Negative Factors 273
Computer-Assisted Telephone Interviewing (CATI) 274
Response Rates in Interview Surveys 275

Online Surveys 275
Online Devices 276
Instrument Design 277
Improving Response Rates 278

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Mixed-Mode Surveys 279
Comparison of the Different Survey Methods 280
Strengths and Weaknesses of Survey Research 281
Secondary Analysis 283
What do you think?...Revisited 286
Ethics and Survey Research 286

CHAPTER 10
Qualitative Field Research 289
Introduction 290
What do you think? 291
Topics Appropriate for Field Research 291
Special Considerations in Qualitative Field Research 294
The Various Roles of the Observer 295
Relations to Subjects 296
Some Qualitative Field Research Paradigms 299
Naturalism 299
Ethnomethodology 301
Grounded Theory 302
Case Studies and the Extended Case Method 305
Institutional Ethnography 307
Participatory Action Research 308
Conducting Qualitative Field Research 311
Preparing for the Field 311
Qualitative Interviewing 313
Focus Groups 316
Recording Observations 318
Strengths and Weaknesses of Qualitative Field Research 320
Validity 321
Reliability 322
Ethics in Qualitative Field Research 322
What do you think?...Revisited 323

CHAPTER 11
Unobtrusive Research 325
Introduction 326
What do you think? 327
Content Analysis 327
Topics Appropriate for Content Analysis 327
Sampling in Content Analysis 328
Coding in Content Analysis 332
Illustrations of Content Analysis 336
Strengths and Weaknesses of Content Analysis 338
Analyzing Existing Statistics 338
Durkheim's Study of Suicide 339
The Consequences of Globalization 340
Units of Analysis 341
Problems of Validity 341
Problems of Reliability 342
Sources of Existing Statistics 343
Comparative and Historical Research 345
Examples of Comparative and Historical Research 345
Sources of Comparative and Historical Data 348
Analytic Techniques 349
Unobtrusive Online Research 351
Ethics and Unobtrusive Measures 352
What do you think?...Revisited 353

CHAPTER 12
Evaluation Research 355
Introduction 356
What do you think? 357
Topics Appropriate for Evaluation Research 358
Formulating the Problem: Issues of Measurement 360
Specifying Outcomes 361
Measuring Experimental Contexts 362
Specifying Interventions 363
Specifying the Population 364
New versus Existing Measures 364
Operationalizing Success/Failure 364
Types of Evaluation Research Designs 365
Experimental Designs 365
Quasi-Experimental Designs 366
Qualitative Evaluations 371
Logistical Problems 372
Use of Research Results 373

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Social Indicators Research 379
The Death Penalty and Deterrence 380
Computer Simulation 380
Ethics and Evaluation Research 381
What do you think?...Revisited 382

Part 4 Analysis of Data: Quantitative and Qualitative

CHAPTER 13
Qualitative Data Analysis 384
Introduction 385
Linking Theory and Analysis 385
What do you think? 386
Discovering Patterns 386
Grounded Theory Method 387
Semiotics 388
Conversation Analysis 390
Qualitative Data Processing 390
Coding 391
Memoing 394
Concept Mapping 395
Computer Programs for Qualitative Data 397
QDA Programs 397
Leviticus as Seen through Qualrus 398
NVivo 401
The Qualitative Analysis of Quantitative Data 408
Evaluating the Quality of Qualitative Research 410
Ethics and Qualitative Data Analysis 412
What do you think?...Revisited 413

CHAPTER 14
Quantitative Data Analysis 415
Introduction 416
Quantification of Data 416
What do you think? 417
Developing Code Categories 417
Codebook Construction 419
Data Entry 420
Univariate Analysis 421
Distributions 421
Central Tendency 422
Dispersion 425
Continuous and Discrete Variables 426
Detail versus Manageability 426
Subgroup Comparisons 426
"Collapsing" Response Categories 427
Handling "Don't Knows" 427
Numerical Descriptions in Qualitative Research 428
Bivariate Analysis 429
Percentaging a Table 430
Constructing and Reading Bivariate Tables 432
Introduction to Multivariate Analysis 433
Sociological Diagnostics 434
Ethics and Quantitative Data Analysis 436
What do you think?...Revisited 437

CHAPTER 15
The Logic of Multivariate Analysis 439
Introduction 440
What do you think? 441
The Origins of the Elaboration Model 441
The Elaboration Paradigm 445
Replication 446
Explanation 447
Interpretation 448
Specification 449
Refinements to the Paradigm 450
Elaboration and Ex Post Facto Hypothesizing 453
What do you think?...Revisited 455

CHAPTER 16
Social Statistics 457
Introduction 458
Descriptive Statistics 458

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Data Reduction 458

What do you think? 459
Measures of Association 459
Regression Analysis 463

Inferential Statistics 467
Univariate Inferences 467
Tests of Statistical Significance 468
The Logic of Statistical Significance 469
Chi Square 473
t-Test 474
Some Words of Caution 476

Other Multivariate Techniques 477
Path Analysis 477
Time-Series Analysis 479
Factor Analysis 480
Analysis of Variance 482
Log-Linear Models 484
Odds-Ratio Analysis 485
Geographic Information Systems (GIS) 485
Demographic Analyses 486

What do you think?...Revisited 489

CHAPTER 17

Reading and Writing Social Research 491

Introduction 492

Reading Social Research 492
Organizing a Review of the Literature 492

What do you think? 493
Reading Journals versus Books 493
Evaluation of Research Reports 495
Using the Internet Wisely 499

Writing Social Research 505
Some Basic Considerations 506
Organization of the Report 507
Guidelines for Reporting Analyses 511
Going Public 511

The Ethics of Reading and Writing Social Research 512

What do you think?...Revisited 513

Appendixes

A Using the Library 516

B Random Numbers 523

C Distribution of Chi Square 525

D Normal Curve Areas 527

E Estimated Sampling Error 528

Glossary 529

Bibliography 540

Index 555

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Boxed Features

Applying Concepts to Everyday Life

Fertility-Rate Implications 14
Independent and Dependent Variables 17
The Power of Paradigms 36
Church Involvement 50
Red Families and Blue Families 104
On to Hollywood 145
Pregnant Chads and Voter Intentions 151
What Is the Best College in the United States? 169
Assessing Women's Status 177
Representative Sampling 199
Serial Drama Research Success 357
Attending an Ivy League College and Success in Later Professional Life 450
Communication Is the Key 506

Issues and Insights

Social Research Making a Difference 6
Hints for Stating Hypotheses 46
Ethical Issues in Research on Human Sexuality 71
Validity and Social Desirability 153
How Healthy Is Your State? 171
Indexing the World 177
Sampling Iran 220
Interview Transcript Annotated with Researcher Memos 319
Testing Soap Operas in Tanzania 374
Chinese Public Opinion 379
Pencils and Photos in the Hands of Research Subjects 396
Why Do Elaboration? 441

How to Do It

Analyzing Data Online with the General Social Survey (GSS) 20
Framing a Hypothesis 44
The Basic Elements of Informed Consent 66
Putting Social Research to Work 93
Identifying the Unit of Analysis 102
Measuring College Satisfaction 147
"Cause" and "Effect" Indicators 165
Using a Table of Random Numbers 213
Conducting an Online Survey 279
Establishing Rapport 313
Reading and Evaluating Documents 349
Positive Deviance 363
Using Google Scholar and Other Online Resources 502
Citing Bibliographic Sources 510

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

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 this Fifteenth Edition. The official two-volume Chinese edition was published in Beijing in 2000, and there are numerous other non-English versions around the world.

Over the life of this 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.

Changes in the Fifteenth 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.
- Each chapter begins with a "What Do You Think?" puzzle for students to think about. Later in the chapter, there are answers included in "What Do You Think... Revisited."
- 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.
- A letter from the book to the student, something I developed awhile back in *The Basics of Social Research* (a shorter version of this book), and I thought *Practice* readers would enjoy it and benefit from it, too.
- Added a new feature—"What Do You Think?"—which poses a puzzle at the outset of each chapter and answers it later, using the materials covered in the chapter.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Chapter Changes

In addition to those bookwide 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

- Shifted from birth to fertility rates and updated Table 1-1
- Expanded discussion of probabilistic causation
- Added an introduction to the Ethics of Human Inquiry
- Updated GSS table on attitudes toward gays and lesbians to 2014
- Deleted box on "The Hardest Hit"
- Added box on "Social Research Making a Difference"
- Added new Figure 1-1
- Added box on "Fertility Rate Implications"
- Moved "Wheel of Science" figure to Chapter 2
- Clarified "dark side of the moon" comment
- Added box on the role of women in early social research

2 Paradigms, Theory, and Research

- Added some bibliographic citations for classic references
- Added introductory discussion of logic and rationality
- Added box on "The Power of Paradigms"
- Added box on "Framing a Hypothesis"
- Added box on "Church Involvement"
- Moved "Wheel of Science" figure from Chapter 1
- Replaced section on "Links between Theory and Research" with "The Importance of Theory in the 'Real World'"

3 The Ethics and Politics of Social Research

- Added example of Facebook 2012 study violating informed consent and Facebook's creation of an ethics review process
- Added an example on confidentiality and anonymity in qualitative studies
- Pointed readers to the 2015 revision of the AAPOR Code of Ethics

Part Two: The Structuring of Inquiry

4 Research Design

- Added box reporting a graduate student's experience in the field
- Expanded the discussion of Figure 4-1
- 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 (2014 and 2018)
- Discussed panel attrition in qualitative panel studies
- Updated marijuana approval to 2016 GSS
- Updated states legalizing recreational marijuana
- Introduced the concept of statistical significance
- Made comparison of idiographic/Nomothetic less repetitive
- Expanded the explanation of necessary and sufficient causes in Main Points
- Improved the explanation of the ecological fallacy in Main Points
- Dropped an older example to trim section on longitudinal design

5 Conceptualization, Operationalization, and Measurement

- Added discussion of measuring ethnicity in Cornwall County, Britain
- Added discussion of cognitive interviewing
- Added example of bullying in the workplace
- Added test of whether the terms *baby* or *fetus* affected abortion attitudes
- Added discussion of definition of rape and other variables
- Added section on use of cognitive interviewing in Korean language
- Integrated Gender and Race box into text
- Added a box on "Conceptualization"
- Added box "On to Hollywood"
- Added box on "Pregnant Chads and Voter Intentions"

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

- Added example of biased questions with regard to gun control

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
- Updated data on State ratings on health
- Added discussion of research on various Likert formats online
- Added box on "Best College in the United States"
- Added box on "Assessing Women's Status"

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 because of new table in Appendix B
- Added related box on sampling in Iran to sampling in the United States (or anywhere)
- Cited Nate Silver's FiveThirtyEight.com rating of pollsters
- Added study citing problems with snowball sampling
- Critiqued use of polls to pick GOP presidential candidates for 2015–2016 debates and the Democrats in the run-up to their 2020 presidential primary
- Added box on "Representative Sampling"
- Updated data on the extent of wireless phones

Part Three: Modes of Observation

8 Experiments

- Expanded on the introduction to online experiments
- Added example of an online experiment raising ethical questions

9 Survey Research

- Quoted from AAPOR report on mobile devices
- Cited an article on tablet-based surveys
- Cited Nate Silver's 538 rating of pollsters
- Added Pew Center tips on Web surveys
- Added a comparison of low-response telephone surveys and nonprobability online surveys
- Added study of nonresponse impact on univariate and multivariate analyses
- Mentioned Google Forms as an alternative to Survey Monkey

10 Qualitative Field Research

- Added example of participatory research in South Africa
- Added citation on uses of video for data collection
- Added box of evaluation of NGOs
- Added participant comment from Bangladeshi PAR study
- Added Van Cleave study of Crook County courthouse
- Reported an interview study of white supremacists
- Added study using online forums to study menopausal women

11 Unobtrusive Research

- 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
- Added study comparing Mother's and Father's Day cards
- Updated comparison of male and female earnings
- Added *Sociological Perspectives* special issue on ethnography

12 Evaluation Research

- Added box on evaluation research by nonprofit organizations
- Added box on "Solutions without Problems"
- Updated murder rates in states with and without death penalty

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Part Four: Analysis of Data

13 Qualitative Data Analysis

- Updated election maps to 2016
- Added dedoose to QDA list

14 Quantitative Data Analysis

- Updated GSS data on church attendance
- Updated table on marijuana use and age
- Updated table on gender and church attendance
- Updated table exploring explanations for gender differences in pay

15 The Logic of Multivariate Analysis

- No changes

16 Social Statistics

- Deleted section on "Discriminant Analysis"
- Updated figure on election results to 2016
- Added section on Demographic Analyses

17 Reading and Writing Social Research

- Added citation to my e-book, *Avoiding Plagiarism*
- Gave an example of URL reference citation

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 and adding others. Here's the resulting package for the Fifteenth 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

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

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 fourteen previous editions. It's the one thing most often mentioned by the students who write to me. For the Fifteenth 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 Practice of Social Research, Fifteenth 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.

The Practice of Social Research MindTap represents a new approach to a highly personalized, online learning platform. It combines all of a student's learning tools—the chapter reading, Practice activities within APLIA, Explore activities and new Create activities—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.

Digital Resources

The MindTap digital platform offers:

- An interactive eBook, in which students can highlight key text, add notes, and create custom flashcards.
- Practice activities that empower students toward authentic and thoughtful learning experiences.
- Explore activities that allow students to interact with hypothetical social experiments in a scenario-based learning activity.
- Create activities asking students to piece together the different stages of the research process in each chapter and that will help them build up to a capstone project at the end of the course.
- A capstone project that can serve as a term paper or final project.
- A digital test bank, which includes multiple-choice, true/false, and essay questions for each chapter.
- A fully mobile experience via the MindTap mobile app, so students can read or listen to textbooks and study with the aid of instructor notifications and flashcards.

Instructor's Manual

This supplement offers the instructor chapter outlines, lecture outlines, behavioral objectives, teaching suggestions and resources, video suggestions, and questions/activities to guide a research project.

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

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

quickly create multiple test versions. You can deliver tests from your LMS, your classroom—or wherever you want.

PowerPoint® Slides

Helping make your lectures more engaging, 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 PowerPoint slides.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

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 my shorter text, *The Basics of Social Research.* Their contributions are still present in this edition of *Practice*, 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.

Although my name appears on the spine of this book and elsewhere in it, I want you to know that a volume like this can only appear by virtue of the work of a team of publishing professionals. Among the many whose hands have stroked this book along the way, I especially want to name Product Manager Kori Alexander, Learning Designer Emma Guiton, Content Manager Kathy Sands-Boehmer, Art Director Nadine Ballard, Digital Lead Matt Altieri, Product Assistant Shelby Blakey and Copy Editor Debbie Stone. Without their time and thoughtful attention, this book would remain a dream residing in my computer. Thank you.

I have dedicated this book to my soulmate, best friend, and wife, Suzanne Babbie. I see in Suze those things I am most proud of in myself, except I see purer versions of those qualities in her. She ennobles what is possible in a human being, and I become a better person because of her example.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

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 some 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.)

Chapters 14 to 16 contain quite a bit of statistics, because they deal 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

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

in 1973, 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 my 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 to 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.

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

With regard to number (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. 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.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

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 that 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.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

CHAPTER 1

Human Inquiry and Science

CHAPTER OVERVIEW

All of us try to understand and predict the social world. Scientific inquiries—and social research in particular—are designed to avoid the pitfalls of ordinary human inquiry.

© Monkey Business Images/Shutterstock.com

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

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s).
Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

PART 1 An Introduction to Inquiry

Learning Objectives

After studying this chapter, you will be able to . . .

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

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. 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 that 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 and 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 nibblies.

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

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s).
Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

What do you think?

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.

Earl Babbie

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.

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.

Earl Babbie

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

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 actually know what's real? People have grappled with this question for thousands of years.

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 (away from the sun)? First, it makes sense, because the surface heat of the moon comes from the sun's rays. Second, the scientific measurements made on

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

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.

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

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.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

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 using 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 his 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 health-care 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.

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 a 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

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

us with a starting point for our own inquiry, but they can lead us to start at the wrong point and can 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 appears, 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 in order 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 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 old-timers 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.*
>
> *(Hill, 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

replication Repeating an experiment to expose or reduce error.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

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. Alternatively, 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.

In the most general terms, scientific theory deals with logic, data collection with observation, and data analysis 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.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.

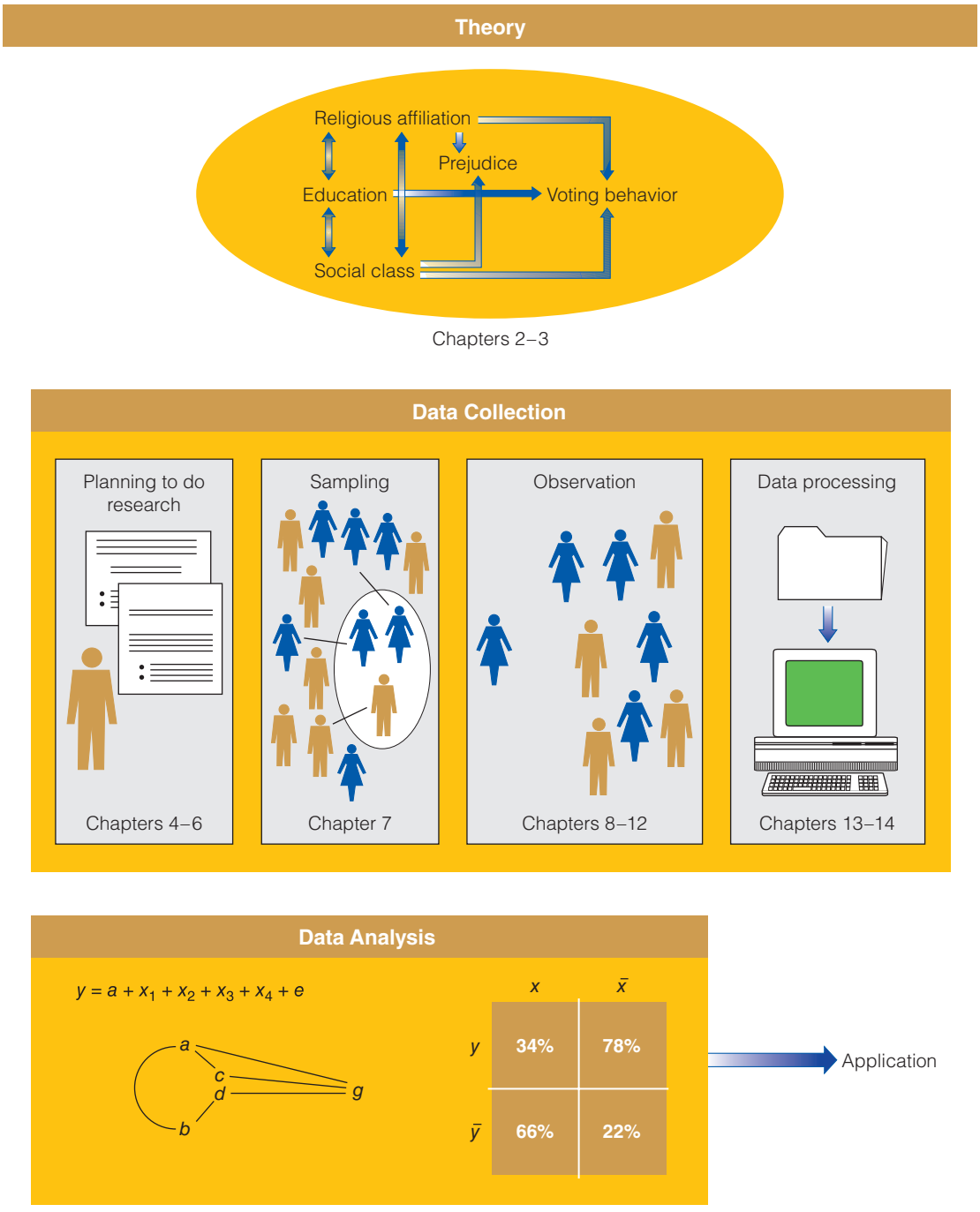

FIGURE 1-1

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.

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. WCN 02-200-322

Copyright 2021 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s). Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.