



Contents

List of Figures	page xiii
List of Tables	xvii
Preface to the Third Edition	xxi
Acknowledgments to the Third Edition	xxiii
Acknowledgments to the Second Edition	xxv
Acknowledgments to the First Edition	xxvii



1 The Scientific Study of Politics	1
Overview	1
1.1 Political <i>Science</i> ?	1
1.2 Approaching Politics Scientifically: the Search for Causal Explanations	3
1.3 Thinking about the World in Terms of Variables and Causal Explanations	7
1.4 Models of Politics	16
1.5 Rules of the Road to Scientific Knowledge about Politics	17
1.5.1 Focus on Causality	17
1.5.2 Don't Let Data Alone Drive Your Theories	17
1.5.3 Consider Only Empirical Evidence	18
1.5.4 Check Your Ideology at the Door and Avoid Normative Statements	19
1.5.5 Pursue Both Generality and Parsimony	20
1.6 A Quick Look Ahead	20
Concepts Introduced in This Chapter	21
Exercises	22



2 The Art of Theory Building	25
Overview	25
2.1 Good Theories Come from Good Theory-Building Strategies	25
2.2 Promising Theories Offer Answers to Interesting Research Questions	26

2.3	Identifying Interesting Variation	27
2.3.1	Cross-Sectional Example	28
2.3.2	Time-Series Example	30
2.4	Learning to Use Your Knowledge	31
2.4.1	Moving from a Specific Event to More General Theories	31
2.4.2	Know Local, Think Global: Can You Drop the Proper Nouns?	32
2.5	Three Strategies toward Developing an Original Theory	33
2.5.1	Theory Type 1: a New Y (and Some X)	34
2.5.2	Project Type 2: an Existing Y and a New X	35
2.5.3	A New Z which Modifies an Established $X \rightarrow Y$	36
2.6	Using the Literature without Getting Buried in It	38
2.6.1	Identifying the Important Work on a Subject – Using Citation Counts	38
2.6.2	Oh No! Someone Else Has Already Done What I Was Planning to Do. What Do I Do Now?	39
2.6.3	Critically Examining Previous Research to Develop an Original Theory	39
2.7	Think Formally about the Causes that Lead to Variation in Your Dependent Variable	42
2.7.1	Utility and Expected Utility	43
2.7.2	The Puzzle of Turnout	45
2.8	Think about the Institutions: the Rules Usually Matter	47
2.8.1	Legislative Rules	48
2.8.2	The Rules Matter!	49
2.8.3	Extensions	51
2.9	Conclusion	51
	Concepts Introduced in This Chapter	51
	Exercises	52
3	Evaluating Causal Relationships	56
	Overview	56
3.1	Causality and Everyday Language	56
3.2	Four Hurdles along the Route to Establishing Causal Relationships	60
3.2.1	Putting It All Together – Adding Up the Answers to Our Four Questions	63
3.2.2	Identifying Causal Claims Is an Essential Thinking Skill	65
3.2.3	What Are the Consequences of Failing to Control for Other Possible Causes?	68
3.3	Why Is Studying Causality So Important? Three Examples from Political Science	69
3.3.1	Life Satisfaction and Democratic Stability	69
3.3.2	Race and Political Participation in the United States	70
3.3.3	Evaluating Whether “Head Start” Is Effective	72
3.4	Wrapping Up	73
	Concepts Introduced in This Chapter	74
	Exercises	74

4	Research Design	77
	Overview	77
	4.1 Comparison as the Key to Establishing Causal Relationships	77
	4.2 Experimental Research Designs	78
	4.2.1 Experimental Designs and the Four Causal Hurdles	84
	4.2.2 “Random Assignment” versus “Random Sampling”	85
	4.2.3 Varieties of Experiments and Near-Experiments	86
	4.2.4 Are There Drawbacks to Experimental Research Designs?	88
	4.3 Observational Studies (in Two Flavors)	92
	4.3.1 Datum, Data, Data Set	95
	4.3.2 Cross-Sectional Observational Studies	95
	4.3.3 Time-Series Observational Studies	97
	4.3.4 The Major Difficulty with Observational Studies	98
	4.4 Dissecting the Research by Other Scholars	99
	4.5 Summary	100
	Concepts Introduced in This Chapter	100
	Exercises	102
5	Measuring Concepts of Interest	104
	Overview	104
	5.1 Getting to Know Your Data	104
	5.2 Social Science Measurement: the Varying Challenges of Quantifying Human Behavior	106
	5.3 Problems in Measuring Concepts of Interest	111
	5.3.1 Conceptual Clarity	111
	5.3.2 Reliability	112
	5.3.3 Measurement Bias and Reliability	113
	5.3.4 Validity	114
	5.3.5 The Relationship between Validity and Reliability	115
	5.4 Controversy 1: Measuring Democracy	116
	5.5 Controversy 2: Measuring Political Tolerance	120
	5.6 Are There Consequences to Poor Measurement?	122
	5.7 Conclusions	122
	Concepts Introduced in This Chapter	123
	Exercises	123
6	Getting to Know Your Data	125
	Overview	125
	6.1 Getting to Know Your Data Statistically	125
	6.2 What Is the Variable’s Measurement Metric?	126
	6.2.1 Categorical Variables	127
	6.2.2 Ordinal Variables	127
	6.2.3 Continuous Variables	129
	6.2.4 Variable Types and Statistical Analyses	130
	6.3 Describing Categorical Variables	130

6.4	Describing Continuous Variables	132
6.4.1	Rank Statistics	133
6.4.2	Moments	136
6.5	Limitations of Descriptive Statistics and Graphs	139
6.6	Conclusions	139
	Concepts Introduced in This Chapter	140
	Exercises	141

7 Probability and Statistical Inference 143

	Overview	143
7.1	Populations and Samples	143
7.2	Some Basics of Probability Theory	145
7.3	Learning about the Population from a Sample: the Central Limit Theorem	148
7.3.1	The Normal Distribution	148
7.4	Example: Presidential Approval Ratings	154
7.4.1	What Kind of Sample Was That?	155
7.4.2	Obtaining a Random Sample in the Cellphone Era	156
7.4.3	A Note on the Effects of Sample Size	157
7.5	A Look Ahead: Examining Relationships between Variables	159
	Concepts Introduced in This Chapter	159
	Exercises	160

8 Bivariate Hypothesis Testing 161

	Overview	161
8.1	Bivariate Hypothesis Tests and Establishing Causal Relationships	161
8.2	Choosing the Right Bivariate Hypothesis Test	162
8.3	All Roads Lead to p	163
8.3.1	The Logic of p -Values	163
8.3.2	The Limitations of p -Values	164
8.3.3	From p -Values to Statistical Significance	165
8.3.4	The Null Hypothesis and p -Values	166
8.4	Three Bivariate Hypothesis Tests	166
8.4.1	Example 1: Tabular Analysis	166
8.4.2	Example 2: Difference of Means	173
8.4.3	Example 3: Correlation Coefficient	178
8.5	Wrapping Up	184
	Concepts Introduced in This Chapter	184
	Exercises	185

9 Two-Variable Regression Models 188

	Overview	188
9.1	Two-Variable Regression	188
9.2	Fitting a Line: Population \Leftrightarrow Sample	189
9.3	Which Line Fits Best? Estimating the Regression Line	191
9.4	Measuring Our Uncertainty about the OLS Regression Line	195

9.4.1	Goodness-of-Fit: Root Mean-Squared Error	196
9.4.2	Goodness-of-Fit: R-Squared Statistic	197
9.4.3	Is That a “Good” Goodness-of-Fit?	199
9.4.4	Uncertainty about Individual Components of the Sample Regression Model	199
9.4.5	Confidence Intervals about Parameter Estimates	201
9.4.6	Two-Tailed Hypothesis Tests	202
9.4.7	The Relationship between Confidence Intervals and Two-Tailed Hypothesis Tests	205
9.4.8	One-Tailed Hypothesis Tests	205
9.5	Assumptions, More Assumptions, and Minimal Mathematical Requirements	207
9.5.1	Assumptions about the Population Stochastic Component	207
9.5.2	Assumptions about Our Model Specification	210
9.5.3	Minimal Mathematical Requirements	211
9.5.4	How Can We Make All of These Assumptions?	211
	Concepts Introduced in This Chapter	212
	Exercises	213

10 Multiple Regression: the Basics 215

	Overview	215
10.1	Modeling Multivariate Reality	215
10.2	The Population Regression Function	216
10.3	From Two-Variable to Multiple Regression	217
10.4	Interpreting Multiple Regression	221
10.5	Which Effect Is “Biggest”?	225
10.6	Statistical and Substantive Significance	227
10.7	What Happens when We Fail to Control for Z?	228
10.7.1	An Additional Minimal Mathematical Requirement in Multiple Regression	232
10.8	An Example from the Literature: Competing Theories of How Politics Affects International Trade	233
10.9	Making Effective Use of Tables and Figures	236
10.9.1	Constructing Regression Tables	236
10.9.2	Writing about Regression Tables	240
10.10	Implications and Conclusions	242
	Concepts Introduced in This Chapter	243
	Exercises	243

11 Multiple Regression Model Specification 246

	Overview	246
11.1	Extensions of Ordinary Least-Squares	246
11.2	Being Smart with Dummy Independent Variables in OLS	246
11.2.1	Using Dummy Variables to Test Hypotheses about a Categorical Independent Variable with Only Two Values	247

11.2.2	Using Dummy Variables to Test Hypotheses about a Categorical Independent Variable with More Than Two Values	251
11.2.3	Using Dummy Variables to Test Hypotheses about Multiple Independent Variables	254
11.3	Testing Interactive Hypotheses with Dummy Variables	256
11.4	Outliers and Influential Cases in OLS	258
11.4.1	Identifying Influential Cases	259
11.4.2	Dealing with Influential Cases	262
11.5	Multicollinearity	263
11.5.1	How Does Multicollinearity Happen?	264
11.5.2	Detecting Multicollinearity	265
11.5.3	Multicollinearity: a Simulated Example	266
11.5.4	Multicollinearity: a Real-World Example	268
11.5.5	Multicollinearity: What Should I Do?	270
11.6	Wrapping Up	270
	Concepts Introduced in This Chapter	271
	Exercises	271
12	Limited Dependent Variables and Time-Series Data	273
	Overview	273
12.1	Extensions of Ordinary Least Squares	273
12.2	Dummy Dependent Variables	274
12.2.1	The Linear Probability Model	274
12.2.2	Binomial Logit and Binomial Probit	277
12.2.3	Goodness-of-Fit with Dummy Dependent Variables	280
12.3	Being Careful with Time Series	282
12.3.1	Time-Series Notation	282
12.3.2	Memory and Lags in Time-Series Analysis	283
12.3.3	Trends and the Spurious Regression Problem	285
12.3.4	The Differenced Dependent Variable	288
12.3.5	The Lagged Dependent Variable	290
12.4	Example: the Economy and Presidential Popularity	291
12.5	Wrapping Up	295
	Concepts Introduced in This Chapter	296
	Exercises	297
	Appendix A. Critical Values of Chi-Squared	299
	Appendix B. Critical Values of t	300
	Appendix C. The Λ Link Function for Binomial Logit Models	301
	Appendix D. The Φ Link Function for Binomial Probit Models	303
	Bibliography	305
	Index	311