

THE FUNDAMENTALS OF POLITICAL SCIENCE RESEARCH THIRD EDITION

This third edition of the best-selling *The Fundamentals of Political Science Research* provides an introduction to the scientific study of politics. It offers the basic tools necessary for readers to become both critical consumers and beginning producers of scientific research on politics. The authors present an integrated approach to research design and empirical analyses whereby researchers can develop and test causal theories. The authors use examples from political science research that students will find interesting and inspiring, and that will help them understand key concepts. The book makes technical material accessible to students who might otherwise be intimidated by mathematical examples. This revised third edition features new “Your Turn” boxes meant to engage students. The edition also has new sections added throughout the book to enhance the content’s clarity and breadth of coverage.

Paul M. Kellstedt is a professor of Political Science at Texas A&M University. He is the author of *The Mass Media and the Dynamics of American Racial Attitudes* (Cambridge University Press, 2003), winner of Harvard University’s John F. Kennedy School of Government’s 2004 Goldsmith Book Prize. In addition, he has published numerous articles in a variety of leading journals. He is the recently named editor-in-chief of *Political Science Research and Methods*, the flagship journal of the European Political Science Association.

Guy D. Whitten is a professor of Political Science, as well as the Director of the European Union Center, at Texas A&M University. He has published a variety of articles in leading peer-reviewed journals. He is on the editorial boards of the *American Journal of Political Science*, *Electoral Studies*, and *Political Science Research and Methods*.

Cambridge University Press
978-1-316-64267-2 — The Fundamentals of Political Science Research
Paul M. Kellstedt , Guy D. Whitten
Excerpt
[More Information](#)

THE FUNDAMENTALS OF

Political Science Research

Third Edition

Paul M. Kellstedt

Texas A&M University

Guy D. Whitten

Texas A&M University



CAMBRIDGE
UNIVERSITY PRESS

CAMBRIDGE
UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre,
New Delhi – 110025, India

79 Anson Road, #06–04/06, Singapore 079906

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning, and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781316642672

DOI: 10.1017/9781108131704

© Paul M. Kellstedt and Guy D. Whitten 2009, 2013, 2018

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First edition published 2009

Second edition published 2013

7th printing 2017

Third edition published 2018

Printed in the United States of America by Sheridan Books, Inc., 2018

A catalogue record for this publication is available from the British Library.

Library of Congress Cataloging-in-Publication Data

Names: Kellstedt, Paul M., 1968– author. | Whitten, Guy D., 1965– author.

Title: The fundamentals of political science research / Paul M. Kellstedt,
Texas A&M University, Guy D. Whitten, Texas A&M University.

Description: 3rd edition. | New York : Cambridge University Press, [2018]

Identifiers: LCCN 2018001773 | ISBN 9781316642672 (pbk.)

Subjects: LCSH: Political science—Research.

Classification: LCC JA86 .K45 2018 | DDC 320.072—dc23

LC record available at <https://lcn.loc.gov/2018001773>

ISBN 978-1-316-64267-2 Paperback

Additional resources for this publication at www.cambridge.org/KellstedtWhitten3ed

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party Internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Dedicated to

Lyman A. Kellstedt, Charmaine C. Kellstedt,

David G. Whitten, and Jo Wright-Whitten,

the best teachers we ever had

— PMK and GDW

Brief Contents

1	The Scientific Study of Politics	<i>page 1</i>
2	The Art of Theory Building	25
3	Evaluating Causal Relationships	56
4	Research Design	77
5	Measuring Concepts of Interest	104
6	Getting to Know Your Data	125
7	Probability and Statistical Inference	143
8	Bivariate Hypothesis Testing	161
9	Two-Variable Regression Models	188
10	Multiple Regression: the Basics	215
11	Multiple Regression Model Specification	246
12	Limited Dependent Variables and Time-Series Data	273
	Appendix A. Critical Values of Chi-Squared	299
	Appendix B. Critical Values of <i>t</i>	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

 Contents

List of Figures	<i>page</i> 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

viii Contents

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

Contents	ix
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

x	Contents	
	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