Finding Pathways

Social scientists have identified a need to move beyond the analysis of correlation among variables to the study of causal mechanisms that link them. Nicholas Weller and Jeb Barnes propose that a solution lies in "pathway analysis": the use of case studies to explore the causal links between related variables. This book focuses on how the small-N component of multi-method research can meaningfully contribute and add value to the study of causal mechanisms. The authors present both an extended rationale for the unique role that case studies can play in causal mechanism research, and a detailed view of the types of knowledge that case studies should try to generate and how to leverage existing large-N data to guide the case selection process. The authors explain how to use their approach both to select cases and to provide context on previously studied cases.

Nicholas Weller is Assistant Professor of Political Science and International Relations at the University of Southern California.

Jeb Barnes is Associate Professor of Political Science at the University of Southern California.

Strategies for Social Inquiry

Finding Pathways: Mixed-Method Research for Studying Causal Mechanisms

Editors

Colin Elman, *Maxwell School of Syracuse University* John Gerring, *Boston University* James Mahoney, *Northwestern University*

Editorial board

Bear Braumoeller, David Collier, Francesco Guala, Peter Hedström, Theodore Hopf, Uskali Maki, Rose McDermott, Charles Ragin, Theda Skocpol, Peter Spiegler, David Waldner, Lisa Wedeen, Christopher Winship

This new book series presents texts on a wide range of issues bearing upon the practice of social inquiry. Strategies are construed broadly to embrace the full spectrum of approaches to analysis, as well as relevant issues in philosophy of social science.

Published Titles

John Gerring, Social Science Methodology: A Unified Framework, 2nd edition Michael Coppedge, Democratization and Research Methods

Thad Dunning, Natural Experiments in the Social Sciences: A Design-Based Approach

Carsten Q. Schneider and Claudius Wagemann, *Set-Theoretic Methods for the Social Sciences: A Guide to Qualitative Comparative Analysis*

Forthcoming titles

- Andrew Bennett and Jeffrey T. Checkel, *Process Tracing in the Social Sciences: From Metaphor to Analytic Tool*
- Diana Kapiszewski, Lauren M. MacLean and Benjamin L. Read, *Field Research in Political Science: Practices and Principles*
- Jason Seawright, Multi-Method Social Science: Combining Qualitative and Quantitative Tools
- Peter Spiegler, A Constructive Critique of Economic Modeling

Finding Pathways

Mixed-Method Research for Studying Causal Mechanisms

Nicholas Weller

Department of Political Science and School of International Relations University of Southern California

Jeb Barnes

Department of Political Science University of Southern California



CAMBRIDGE

Cambridge University Press 978-1-107-04106-6 — Finding Pathways Nicholas Weller , Jeb Barnes Frontmatter <u>More Information</u>



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/9781107041066

© Nicholas Weller and Jeb Barnes 2014

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 published 2014

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

ISBN 978-1-107-04106-6 Hardback ISBN 978-1-107-68476-8 Paperback

Additional resources for this publication at www.cambridge.org/weller-barnes

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.

Contents

	List of figures List of tables Acknowledgments	<i>page</i> vi vii viii
1	Pathway analysis and the elusive search for causal mechanisms	1
2	Preparing for pathway analysis	19
3	Case selection for pathway analysis	33
4	Comparison of case selection approaches	49
5	Regression-based case selection for pathway analysis of non-linear relationships	69
6	Matching to select cases for pathway analysis	88
7	Using large- <i>N</i> methods to gain perspective on prior case studies	104
8	Pathway analysis and future studies of mechanisms	117
9	Conclusion	139
	Glossary of terms References Index	148 152 160

Figures

1.1	The contextual nature of mechanisms	page 13
3.1	Goals of pathway analysis and criteria for case selection	34
3.2	Scatterplot with expected relationship, X1 value, and observed	
	outcome	42
3.3	Schematic overview of method	47
4.1	Distribution of per capita oil production	61
4.2	Visualizing key variation: expected relationship, oil production	,
	and name of country with Polity score	64
5.1	Mechanisms between country A and country B in policy	
	diffusion	72
5.2	Distribution of capital competitors' policy	81
5.3	Expected relationship and policies of capital competitors	82
6.1	Distribution of primary exports	93
6.2	Scatterplot of Mahalanobis distances for matched pairs of cases	99
7.1	Distribution of primary exports variable	108
7.2	Expected relationship and levels of primary exports	111
7.3	Marginal effect of primary exports on probability of civil war	112
8.1	Pathways linking SES and health (excluding feedback loops and	l
	interaction effects)	121
9.1	The role of pathway analysis in mechanism-centered research	
	agendas	141

Tables

2.1	Comparison of goals of causes of effects, effects of causes, and	
	pathway research	page 21
2.2	Common scenarios for underlying relationships among	
	causal variables, outcomes, and mechanisms	25
2.3	Examining measurement validity of large-N indicators	30
4.1	Case selection with dichotomous causal variables	51
4.2	Case selection with dichotomous causal variables where causal	
	mechanism knowledge is limited or uncertain	52
4.3	Case selection for pathway analysis between commitment	
	problems and war over limited resources (when asymmetric	
	information does not exist)	55
4.4	Pathway Values for oil curse hypothetical	58
4.5	Expected relationships for oil curse	63
5.1	Replication of results for diffusion of liberal capital policy	79
6.1	Matched pairs of war and non-war cases	97
7.1	Case-by-case results from Ross' case studies	107
7.2	Relationship between primary exports and civil conflict	109
7.3	Cases chosen to study primary exports and civil conflict	114
8.1	Summary of the relationships between the common scenarios	
	and the front-door criterion and sequential ignorability	137

Acknowledgments

This project began as a conversation in Nick's office. We were advising a number of graduate students who planned to combine qualitative and quantitative research in their dissertations. The students wanted to use various types of large-*N* analyses to establish associations between variables and then use case studies to investigate the processes that connected these variables. The idea sounded promising, but the details of how to use multi-method research to probe the links between variables were somewhat vague. At the time, we thought that it might be fun and useful to write a short article on this subject. We soon realized, however, that this topic could not be contained in a single article, and we began the journey of writing a book on what has proven to be an enormously complex subject.

This journey has been supported by a group of wonderful scholars and colleagues. It is our pleasure to thank them for all of their support, insights, and patience, as well as to absolve them of any mistakes that remain in the final version of this work. First, at Cambridge University Press, we would like to thank our editor, John Haslam, his assistant, Carrie Parkinson, and the anonymous reviewers, whose comments greatly improved the manuscript. A special debt is owed to the acquisition editors for the series on Strategies for Social Inquiry, Colin Elman, Jim Mahoney, and especially John Gerring. These three not only advocated for the book but also provided us invaluable opportunities to participate in the research workshop at the Institute for Qualitative and Multi-Method Research at the Maxwell School of Public Policy at Syracuse University. We also thank Joanna North and Lila Stromer for their copyediting assistance.

ix

Acknowledgments

Second, many scholars were extremely generous in responding to earlier drafts and offering insights. We are especially grateful to Adam Glynn, who commented on several iterations of conference papers, Jake Bowers, Diana Kapiszewski, and Gerry Munck, who served as discussants at a workshop on the manuscript, and Jane Junn, who tirelessly read drafts at various stages of the project. All of these fine scholars went above and beyond the call of duty and pushed us to produce a much better book. If there was an All Star team for colleagues, they would be in the starting lineup. We also thank our colleagues at the University of Southern California who attended the workshop on the manuscript, including Tony Bertelli, Dennis Chong, Ann Crigler, Ben Graham, Christian Grose, Diana O'Brien, Brian Rathbun, and Jeffrey Sellers. Their participation and comments were greatly appreciated. We are grateful to Justin Berry and Mariano Bertucci for their research assistance.

Third, we would like to thank the Center for International Studies at USC (CIS), its director, Patrick James, and Indira Persad. At a critical point in the process – after the basic ideas for the book had started to take shape but before they were set in stone – we wanted to convene a group of scholars to comment on the manuscript. CIS generously provided funding and the administrative support for this workshop, which turned out to be critical in the project's development. We cannot thank them enough.

Finally, we would like to thank our cherished families, whose kindness, patience, and support allowed us to make this journey in the first place. We dedicate this book to them.