

## **The Power-Conflict Story**



# **The Power-Conflict Story**

A Dynamic Model of Interstate Rivalry

Kelly M. Kadera

*Ann Arbor*

**THE UNIVERSITY OF MICHIGAN PRESS**

Copyright © by the University of Michigan 2001  
All rights reserved  
Published in the United States of America by  
The University of Michigan Press  
Manufactured in the United States of America  
♻️ Printed on acid-free paper

2004 2003 2002 2001 4 3 2 1

No part of this publication may be reproduced, stored in a retrieval system,  
or transmitted in any form or by any means, electronic, mechanical, or  
otherwise, without the written permission of the publisher.

*A CIP catalog record for this book is available from the British Library.*

Library of Congress Cataloging-in-Publication Data

Kadera, Kelly M., 1965–

The power-conflict story : a dynamic model of interstate rivalry / Kelly  
M. Kadera.

p. cm.

Includes bibliographical references and index.

ISBN 0-472-11191-4 (cloth : alk. paper)

1. International relations—Political aspects. 2. Balance of power.  
3. War. I. Title.

JZ1310 .K33 2001

327.1'01—dc21

00-051173

This book is dedicated to the *Dynamic Duo*  
for sharing their love of modeling with me  
and with future generations of modelers.



## Contents

<i>List of Figures</i>	ix
<i>List of Tables</i>	xi
<i>Acknowledgments</i>	xiii
Chapter 1. An Introduction to Storytelling	1
Chapter 2. Gathering Pieces of the Story	10
Chapter 3. The Power-Conflict Story	55
Chapter 4. The Moral	85
Chapter 5. Verifying the Story	111
Chapter 6. Epilogue	149
<i>Appendix A. Simulation Results</i>	165
<i>Appendix B. Power Transitions Among the Major Powers</i>	166
<i>Notes</i>	169
<i>References</i>	177
<i>Index</i>	187





## Figures

1. The population growth model	2
2. Three stages of development	3
3. An intersection of two nations' power curves	4
4. Doran and Parsons's (1980) cycle of relative power	17
5. The BOP and PT explanations as step functions	28
6. The BOP and PT explanations as linear functions	31
7. A U-shaped relationship between war and power concentration	32
8. An inverted U relationship between war and power concentration	32
9. Bueno de Mesquita and Lalman's probability of war	33
10. Probability of violence as a function of dyadic power distributions	34
11. Three regions of conflict behavior	62
12. Growth in national power according to three different growth rates	71
13. A sample trajectory in the $p_x$ versus $p_y$ plane	83
14. An example of a bull and gnat transition	88
15. An example of a tortoise and hare transition	89
16. An example of a David and Goliath transition	90
17. Varying the $\beta_x$ parameter	96
18. D&G trajectories for $\beta_x = .08$	98
19. B&G trajectories for $\beta_x = .167$	100
20. D&G and T&H trajectories for $\beta_x = .9$	101
21. D&G and T&H trajectories for $\beta_x = .5$	103
22. Major power CINC scores, 1817–72	125
23. Major power CINC scores, 1873–1928	126
24. Major power CINC scores, 1929–84	127
25. Logistic decline in B&G conflict difference	133



## Tables

1. Organski and Kugler's First Look at Power Distributions and War	25
2. Contenders Only	26
3. War Probabilities for Regional and Global Dyadic Rivalries	30
4. Alliance Power Distribution and the Outbreak of War	44
5. A Review of the Parameters in the Power-Conflict Model	82
6. Baseline Deductions from the Power-Conflict Model	106
7. Membership in the Major Power System, 1816–Present	112
8. Major Powers Excluded in the Calculation of CINC Scores	118
9. Three Potentially Useful Conflict Data Sets	120
10. Empirical Power Transitions between Major Powers	128
11. Comparing Conflict Levels for Bulls and Gnats	131
12. Patterns in Conflict Differences over Time: Bulls and Gnats	133
13. Comparing Conflict Levels for Tortoises and Hares	134
14. Patterns in Conflict Differences over Time: Tortoises and Hares	135
15. Comparing Conflict Levels for Davids and Goliaths	136
16. Timing of Second Peak in Joint Use of Force Cases	139
17. Timing of Second Peak in Joint Force Cases that Support T1, B1, or D1	139



## Acknowledgments

Generous thanks are due to a multitude of people for their help and patience. Dina Zinnes, Robert Muncaster, Paul Diehl, Frank Zagare, Jacek Kugler, Jack Levy, T. Clifton Morgan, Patrick James, Gretchen Hower, Gary Segura, Paul Hensel, Rebecca Morton, Jerry Sorokin, Charles Shipan, William Reisinger, Elizabeth Martin, and Jerry Loewenberg and have all contributed useful comments and advice. Erik Gartzke provided an independent classification of all of the empirical transitions against which I could check my own classification decisions. Kendra Holtzman ran the  $\beta$  parameter sensitivity analyses. Kris Beck compiled the adjusted MID data for major powers. Daniel Morey compiled the index and proofread the final copy. Martha and Robbie Diehl were kind enough to provide hours of fun for Miss Maddy, without which I could not have completed many of the simulations in chapter 4. Finally, Philippe LePrestre lured me into this fascinating world of international relations years ago at Wells College.

