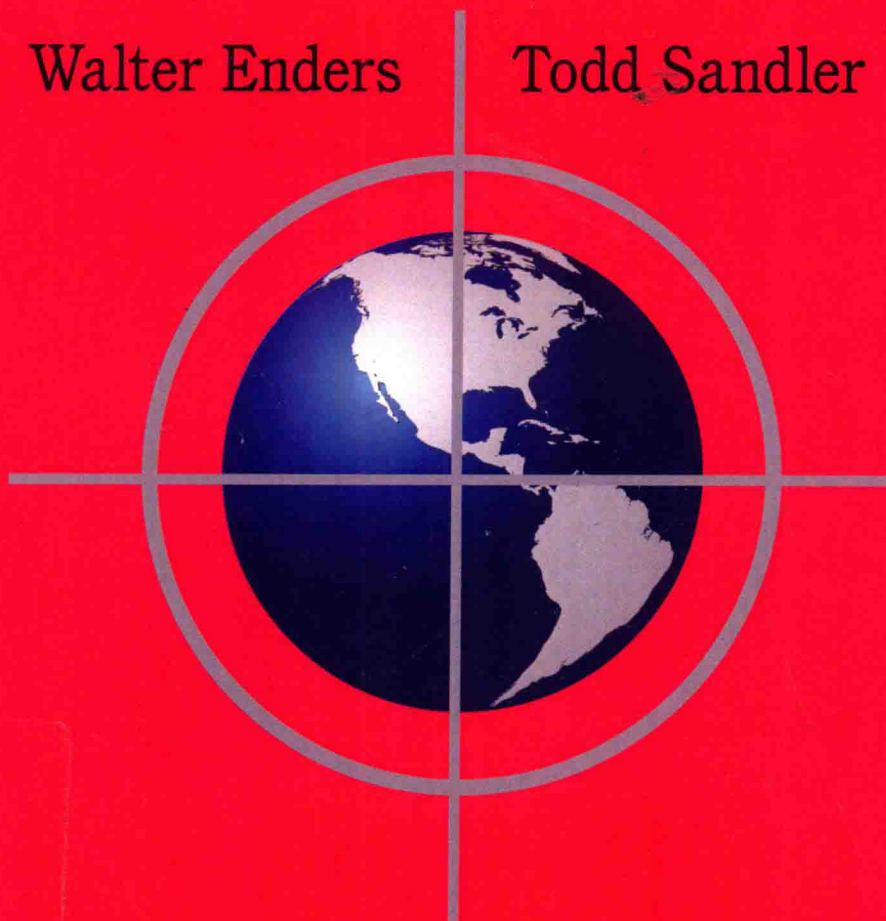


The Political Economy of Terrorism

SECOND EDITION

Walter Enders

Todd Sandler



CAMBRIDGE

The Political Economy of Terrorism

Second Edition

WALTER ENDERS

University of Alabama

TODD SANDLER

University of Texas at Dallas



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THE POLITICAL ECONOMY OF TERRORISM, SECOND EDITION

The Political Economy of Terrorism, Second Edition, presents a widely accessible political economy approach to the study of terrorism. It applies economic methodology – theoretical and empirical – combined with political analysis and realities to the study of domestic and transnational terrorism. In so doing, the book provides both a qualitative and quantitative investigation of terrorism in a balanced, up-to-date presentation that informs students, policymakers, researchers, and the general reader of the current state of knowledge. Included are historical aspects, a discussion of watershed events, the rise of modern-day terrorism, examination of current trends, the dilemma of liberal democracies, evaluation of counterterrorism, analysis of hostage incidents, and much more. The new edition expands the coverage of each chapter, adds a new chapter on terrorist network structures and organization, accounts for changes in the Department of Homeland Security and the USA PATRIOT Act, and discusses insurance against terrorism.

Rational-actor models of terrorist and government behavior and game-theoretic analysis are presented for readers with no prior theoretical training. Where relevant, the authors display graphs using data from International Terrorism: Attributes of Terrorist Events (ITERATE), the Global Terrorism Database (GTD), and other public-access data sets.

Walter Enders holds the Bidgood Chair of Economics and Finance at the University of Alabama. He has published numerous research articles in such journals as the *Review of Economics and Statistics*, *Quarterly Journal of Economics*, *American Economic Review*, *Journal of Economics Literature*, *Journal of Business and Economic Statistics*, and the *American Political Science Review*. He is on the editorial board of the *Journal of Conflict Resolution*. Dr. Enders's *Applied Econometric Time-Series* is a leading book in the field. In 2003, he was the corecipient with Todd Sandler of the National Academy of Sciences Award for Behavioral Research Relevant to the Prevention of Nuclear War.

Todd Sandler is the Vibhooti Shukla Professor of Economics and Political Economy at the University of Texas at Dallas. He has written or edited twenty-one books, including *Global Collective Action*; *Economic Concepts for the Social Sciences*; *The Political Economy of NATO* (with Keith Hartley); and *Global Challenges: An Approach to Economic, Political, and Environmental Problems*, as well as more than two hundred journal articles in economics and political science. His work on terrorism dates back to 1983.

Professors Enders and Sandler coauthored the first edition of this title.

To Linda Enders
and to the memory of Henry Sandler (1939–2005)

Tables and Figures

TABLES

1.1. Some Terrorist Tactics	<i>page</i> 11
1.2. Historical Terrorist Campaigns	22
2.1. Supporting and Inhibiting Factors for Terrorism in a Liberal Democracy	32
2.2. Odds Ratio for Presence of Terrorist Group	34
2.3. Features Distinguishing between Left-Wing and Fundamentalist Terrorists	57
3.1. Key Variables in ITERATE	68
3.2. Number of Incidents by Type (1968–2008): ITERATE Data	69
3.3. Cyclical Properties of the Terrorist Time Series	81
3.4. Impact of Metal Detectors on Skyjackings: Intervention Analysis	86
3.5. Interventions	90
3.6. Effects of the Interventions	91
3.7. Number of Incidents by Type (1970–2007): GTD Data	97
3.8. Cross-Correlations of Domestic and Transnational Incidents	100
4.1. Proactive and Defensive Measures against Terrorism	112
5.1. Target Substitution and Statistically Significant Changepoints	160
5.2. Description of the Intervention Variables	164
5.3. Results of the VAR	166
6.1. Essential Asymmetries between Terrorists and Targeted Governments	182

6.2. Global and Regional Conventions and Treaties Relating to Controlling International Terrorism	190
6.3. International Efforts against the Funding of Terrorism	196
7.1. Select Key Hostage-Taking Incidents Prior to 1986	210
7.2. Select Hostages Captured during 1982–1992 Lebanon Hostage Crisis	214
7.3. Select Hostages Captured during 2004 in Iraq	217
7.4. Significant Determinants of Various Aspects of Hostage Incidents	228
7.5. Hostage-Taking Change-points for Transnational Terrorism	235
8.1. Major Terrorist Groups by Motive and Number of Attacks	242
10.1. Insured Losses from Terrorist Attacks and Disasters	291
10.2. The Direct Costs of 3/11 in Constant 2009 US Dollars	295
11.1. Highlights of USA PATRIOT Act (HR 3162)	320
11.2. Key Directorates, Offices, and Mission Agencies of the Department of Homeland Security	323
11.3. Department of Homeland Security: Responsibilities of Component Parts	326
11.4. Department of Homeland Security Budgets: Fiscal Years (FY) 2009, 2010, and 2011	330
11.5. Homeland versus Nonhomeland Security Funding Breakdown, 2009, 2010	332
11.A1. Total Budget Authority by Organization as of 31 January 2004	344
12.1. Potential Mass-Casualty Terrorist Attacks	350
12.2. Select Mass-Casualty Terrorist Attacks	351
12.3. Select Consequence Scenarios for CBRN Attacks	353
12.4. Inhibiting and Promoting Factors Regarding Terrorists’ Use of WMDs	356
12.5. Past Incidents of Chemical, Biological, and Radiological Terrorism	358

FIGURES

2.1. Terrorism–civil liberties constraint	39
2.2. Indifference map for terrorism–civil liberties trade-off	40
2.3. Social equilibrium	41
2.4. Alternative equilibriums	42

2.5. Influence of increased counterterrorism	43
2.6. Transnational terrorist incidents: 1968–2008	49
2.7. Proportion of US transnational terrorist incidents: 1968–2008	50
2.8. Suicide incidents: Quarterly, 1981–2005	58
2.9. Victims of suicide incidents: Quarterly, 1981–2005	58
3.1. Annual number of sunspots	62
3.2. All incidents and bombings	70
3.3. Hostage takings and assassinations	71
3.4. Threats and hoaxes	73
3.5. Incidents with deaths and casualties	74
3.6. The proportion of death incidents	75
3.7. Typical intervention functions	83
3.8. US domestic and transnational skyjackings	85
3.9. Domestic casualty incidents using the modified GTD data	99
3.10. Transnational casualty incidents using the modified GTD data	99
4.1. Terrorists' resource constraints	106
4.2. Prisoners' Dilemma	113
4.3. Chicken and assurance game	115
4.4. Two-target preemption game	118
4.5. Six-nation preemption game	118
4.6. Asymmetric preemption scenario	120
4.7. Two-target deterrence game	122
4.8. Deterrence versus preemption – symmetric case	124
4.9. Deterrence versus preemption – asymmetric case	125
4.10. Weakest-link security risk	127
4.11. Best-shot security innovation	130
4.12. Proactive measures in two countries	132
4.13. Defensive measures in two countries	134
4.14. Terrorists versus the government	135
5.1. Expected utility of a potential skyjacker	141
5.2. Indifference curves for terrorist and nonterrorist actions	145
5.3. The optimal allocation	147
5.4. Increasing the cost of terrorist attacks	147
5.5. Reduction in terrorists' resources	148
5.6. Substitutability between attack modes	150
5.7. A benevolent strategy	153
5.8. Substitutions between attack modes	165

6.1. Transnational external costs	173
6.2. Transnational external benefits	175
6.3. Mixed externalities	177
6.4. Prisoners' Dilemma viewed from period two of two-period game	183
6.5. Freezing assets: Coordination game	185
7.1. Percentage of hostage-taking missions	205
7.2. Proportion of kidnappings to all hostage-taking missions	206
7.3. Annual number of domestic hostage-taking missions	207
7.4. Game tree for hostage event	223
8.1. Regular networks (n, r)	250
8.2. Nonregular networks and their densities	251
8.3. Terrorist wings' actions as complements	257
8.4. Terrorist wings' actions as substitutes	258
9.1. All incidents with US victims	271
9.2. Proportion of incident types by income group	281
9.3. Casualty incidents by region	282
10.1. Macroeconomic variables and 9/11	296
10.2. Net capital stock held by foreigners in Spain	311
10.3. US FDI in selected areas	313
11.1. US Department of Homeland Security expenditures: 2003–2011	329
12.1. CBRN terrorist incidents: 1960–2004	359

Preface

The first edition of this book was published in 2006. Since its publication, there has been a tremendous amount of research in economics, political science, operations research, and related fields on terrorism. This is due to the continued security threat to society posed by terrorism and to the large quantity of resources allocated to defensive and offensive counterterrorism measures. Another driver of this interest has been the funding made available by the US Department of Homeland Security (DHS), the US Department of Defense, the European Union, and other institutions for the study of terrorism and the practice of counterterrorism. The Science and Technology agency in the DHS has funded twelve Homeland Security Centers of Excellence to study various terrorism-related issues – for example, protecting critical infrastructure against terrorist attacks and preparing for biological terrorism. Some of these centers have degree programs to teach students about the analysis of terrorism, so the need for an up-to-date version of our book has grown.

This second edition is a substantial revision of the first edition; nevertheless, the new edition maintains the structure, analytical orientation, and accessibility of the first edition. The new edition incorporates a number of key changes. First, it brings topics up to date in terms of current thinking and the recent literature. In particular, there is now a lot more insight and knowledge about the economic impact of terrorism, the prospects for international cooperation to thwart terrorism, and the efficacy of alternative counterterrorism tools. Recent research articles have incorporated more agents – for example, terrorist operatives, the general population, and targeted governments – into the strategic analysis of terrorism. There are more models that address suicide terrorism. Second, the new edition updates the statistical displays to include terrorist-event data through 2008. Unlike the first edition, which focused on transnational terrorism, the second

edition also investigates domestic terrorism. Statistics on domestic terrorist incidents come from the Global Terrorism Database, maintained at the University of Maryland. Third, the new edition accounts for changes with respect to DHS, the USA PATRIOT Act, insurance against terrorist incidents, and other institutional concerns. Fourth, the new edition uses recent terrorist incidents – for example, the attempted downing of a Northwest Airlines flight on 25 December 2009, the failed terrorist plot to blow up transatlantic flights with liquid explosives in August 2006, and the Mumbai armed attacks on 26 November 2008 – as relevant illustrative examples.

The new edition expands the coverage of each chapter so that topics from the first edition are discussed in greater detail. Moreover, new topics are added to each chapter – for example, the study of target substitution is addressed in Chapter 5; an analysis of hostage-taking dynamics is included in Chapter 7; and the psychic costs of terrorism and the Life Satisfaction Approach are considered in Chapter 10. In addition, key factors affecting hostage-taking dynamics are indicated in Chapter 7. More graphs and tables have been added throughout the second edition. There is also a new chapter on terrorist groups and their organization. Among other things, this chapter considers how terrorist groups trade off their functionality and connectivity for security when determining their institutional form. This new chapter also investigates characteristics of terrorist groups based on their orientation – that is, religious, nationalist/separatist, left-wing, or right-wing. The longevity of terrorist groups is also discussed, along with their tendency to splinter into more groups. In addition, dynamic issues, including recruitment, are investigated.

Since its publication we have used the book in many classes that we have taught on terrorism. These in-class experiences have provided us insights into where concepts and analyses in the first edition needed clarification and/or expansion. We drew from these experiences and student feedback in order to improve the book.

This edition presents a widely accessible political economy approach that combines economic methods with political analysis and realities. In so doing, the book provides both a qualitative and quantitative investigation of terrorism in a balanced, up-to-date presentation that informs students, practitioners, policymakers, researchers, and the general reader of the current state of knowledge. We also indicate fruitful areas for future research. Most books on terrorism focus on historical, cultural, factual, and conceptual details and shy away from rational-choice-based analyses backed by statistical inference. Our book presents not only the historical and conceptual issues, but also scientific-based analyses of the behavior of terrorists and government policymakers. Moreover, we are concerned with knowing how

these adversaries make rational decisions in a strategic interactive framework. That is, how do the choices of the terrorists influence governments' counterterrorism policies, and how do these policies affect the choices of the terrorists? Strategic interactions among targeted governments are also investigated. Since the publication of the first edition, these strategic analyses have become more complex, with the actions of more agents being incorporated into the studies. To establish the relevancy of the theories presented, we display data and review statistical findings from a variety of studies.

Although we are particularly interested in rational-choice models and their empirical verification, we are no less interested in the history of terrorism, the causes of terrorism, and the dilemma faced by liberal democracies. Unlike most other books, this book identifies rational explanations for observed behavior – for example, why terrorist groups often cooperate and form networks, while targeted governments are slow to cooperate. We address many questions, including the following: When confronted with a common terrorist threat, why do targeted governments rely on defensive measures that merely deflect attacks to soft targets, and often eschew proactive responses that would reduce the threat for all governments? Why do countries fail, at times, to adhere to a stated policy of not conceding to hostage takers' demands when it is in their long-run interests never to concede? Which counterterrorism policies work best? How successful have terrorists been in creating economic consequences for targeted countries? Could the 9/11 attacks have been predicted with advanced forecasting tools, and how has transnational terrorism changed since 9/11?

By applying simple economic models and statistical analyses, our book provides a unique and important perspective on the study of terrorism. This perspective is increasingly being applied by researchers at the Centers of Excellence funded by the DHS. It is also used by researchers funded by other grant-giving organizations. To better understand terrorism and to counter its threat, society must utilize varied techniques and knowledge from many disciplines – for example, history, sociology, law, psychology, operations research, statistics, and economics. Our book draws upon insights from all of these disciplines. If one looks through a typical book on terrorism, especially those used in college courses, one will find few, if any, statistical displays of the incidence of terrorist events over time. More important, these books do not present any analysis or explanation of these patterns of events. Most books rely, instead, on some “watershed” events or case studies to draw some general principles. By contrast, we present data on terrorist events over time to bolster our investigation of numerous watershed incidents. Thus, our book is rich in detail about past terrorist events and the changing pattern of terrorism.

Our book is intended for use in college-level economics, political science, and public policy courses on terrorism. The book is also appropriate for classes at military colleges. Our approach will particularly appeal to teachers who want to emphasize a rational-choice basis for understanding terrorism and policies to ameliorate its threat. The book assumes no pre-knowledge of the techniques used. Thus, the game-theoretic methods are explained in detail for readers who have never seen a game matrix or game tree. The book is also useful for researchers who are new to the field and who may be driven to study terrorism because of their interest in the topic or the availability of funding from numerous sources since 9/11. Our book allows a researcher to gain the requisite background in the field, because we have incorporated a rich and diverse set of references and techniques. The interested reader can consult our plentiful references for further details about a particular approach or analysis. In addition, the book should interest people in DHS, the intelligence community, the defense sector, law enforcement, and the insurance industry, all of whom have to address myriad issues concerning modern-day terrorism. Our book provides a different way of thinking about terrorism.

We have profited from perceptive comments on various drafts from anonymous reviewers. We have received helpful support and counsel from Scott Parris, the economics editor at Cambridge University Press. We also appreciate the efforts of the production staff at Cambridge, who transformed the typescript into a book. We acknowledge our debt to our coauthors of articles, where some of the concepts applied here were originally developed. Prominent on this list are Dan Arce, Subhayu Bandyopadhyay, Patrick Brandt, Jon Cauley, Khusrav Gaibulloev, Kate Ivanova, Paan Jindapon, Harvey Lapan, Kevin Siqueira, and John Tschirhart. Others include Scott Atkinson, Peter Flemming, Beom S. Lee, Dwight Lee, Edward Mickolus, B. Peter Rosendorff, Adolfo Sachsida, John Scott, Xuejuan Su, Donggyu Sul, and Javed Younas. This project has succeeded because of the support of our wives – Linda Enders and Jeannie Murdock – and our children. Todd Sandler acknowledges that his research was funded, in part, by the DHS through the Center for Risk and Economic Analysis of Terrorism Events (CREATE) at the University of Southern California, grant numbers 2007-ST-061-000001 and 2010-ST-061-RE0001. However, any opinions, findings, and conclusions or recommendations are solely those of the authors and do not necessarily reflect the views of DHS or CREATE.

Tuscaloosa and Dallas
March 2011

Contents

<i>List of Tables and Figures</i>	<i>page viii</i>
<i>Preface</i>	<i>xiii</i>
1. Terrorism: An Introduction	1
2. The Dilemma of Liberal Democracies	28
3. Statistical Studies and the Dynamics of Terrorist Behavior	61
4. Counterterrorism	103
5. Transference	138
6. International Cooperation: Dilemma and Inhibitors	170
7. Hostage Taking	201
8. Terrorist Groups and Their Organization	238
9. Before and After 9/11	269
10. The Economic Impact of Terrorism	288
11. Homeland Security	317
12. The Future of Terrorism	345
<i>References</i>	<i>363</i>
<i>Author Index</i>	<i>379</i>
<i>Subject Index</i>	<i>383</i>

ONE

Terrorism

An Introduction

The events on 11 September 2001 (henceforth, 9/11) served as a wake-up call to the world that transnational terrorism poses grave risks. The four simultaneous hijackings on 9/11 represent watershed terrorist incidents for a number of reasons. First, the deaths associated with 9/11 were unprecedented: the human toll was equal to the number of deaths from transnational terrorism from the start of 1988 through the end of 2000 (Sandler, 2003). Second, the losses associated with 9/11 topped \$80 billion and caused insurance companies to end automatic coverage of terrorist-induced losses.¹ Following 9/11, many companies were unable to afford terrorism insurance. To address the insurance concern, the US government enacted the Terrorism Risk Insurance Act (TRIA) on 26 November 2002.² Third, 9/11 showed that ordinary objects can be turned into deadly weapons with catastrophic consequences. Despite the huge carnage of 9/11, the death toll could have been much higher had the planes struck the towers at a lower floor. Fourth, 9/11 underscored the objectives of today's fundamentalist terrorists to seek maximum casualties and to cause widespread fear, unlike the predominantly left-wing terrorist campaigns of the 1970s and 1980s that sought to win over a constituency.³ Fifth, 9/11 mobilized a

¹ On the implications of 9/11 for the insurance industry, see Kunreuther and Michel-Kerjan (2004a) and Kunreuther, Michel-Kerjan, and Porter (2003). Approximately half of the losses from 9/11 were covered by the insurance companies, including \$11 billion in lost business, \$2 billion of workers' compensation, \$3.5 billion in property losses at the World Trade Center, and \$3.5 billion of aviation liability.

² TRIA is now extended to 31 December 2014 and provides for the US government to cover 85% of the insured losses on large-scale terrorist incidents. Government-supported payouts are capped at \$100 billion annually.

³ On the changing nature of terrorists, see Brandt and Sandler (2010), Enders and Sandler (2000, 2005a, 2006), Hoffman (1998, 2006), Rapoport (2004), White (2003), and Wilkinson (2001).

huge reallocation of resources to homeland security – since 2002, the US Department of Homeland Security (DHS) budget has grown by over 60% to \$36.2 billion for the fiscal year 2004 (DHS, 2003). In fiscal year 2005, the DHS budget grew another 10% to \$40.2 billion (DHS, 2004). The proposed DHS budget for 2010 is \$55.1 billion, with approximately 65% of the budget, or \$35.7 billion, going to homeland security proper (DHS, 2009, p. 155). In past DHS budgets, between 60 and 65% went to defending against terrorism on US soil. This expenditure is small compared to proactive or military measures taken in fighting the “war on terror,” including the invasion against the Taliban and al-Qaida in Afghanistan on 7 October 2001 and the ongoing operations against these groups in Afghanistan in 2009, 2010, and 2011. Still other proactive spending involves improving intelligence, tracking terrorist assets, and fostering cooperative linkages with other countries. Sixth, protective actions taken by rich developed countries have transferred some attacks against these countries’ interests to poorer countries – for example, the post-9/11 attacks in Indonesia, Morocco, Kenya, Saudi Arabia, Turkey, and elsewhere.

The events of 9/11 heightened anxiety worldwide and resulted in trade-offs in terms of accepting reduced freedom in return for greater security; society had not been willing to surrender as much freedom prior to 9/11. Society lost innocence on that fateful day that it will never regain. The threat of catastrophic terrorist events – though remote – is etched indelibly in everyone’s mind. The Madrid train bombings on 11 March 2004 and the 7 July 2005 London transport bombings have made Europe more aware that large-scale terrorist events can occur on European soil. Other noteworthy European attacks include bomb-laden sedans discovered in London’s Haymarket district on 29 June 2007 and the crash of a flaming SUV into the doors of the main terminal at Glasgow Airport on 30 June 2007. The anxiety that terrorists seek to create is amplified by people’s proclivity to overreact to low-probability but ghastly events.

Although terrorist attacks are generally fewer in number since the late 1990s, terrorism continues to pose grave security risks to society. As will be shown in Chapter 3, each terrorist attack results, on average, in more casualties than those of earlier decades. Some modern-day terrorists are bent on causing attacks with large numbers of casualties – for example, al-Qaida, Lashkar-e-Taiba, and Jemaah Islamiyah. Select terrorist groups have displayed a desire to acquire weapons of mass destruction (Intriligator, 2010). The attempted bombing of a Northwest Airlines flight on 25 December 2009 highlights the fact that terrorists will innovate to circumvent static security measures, so that weak points must be constantly plugged in order

to forestall catastrophe. The reliance on reactive measures (for example, inspecting shoes after the shoe bomber incident) is not the best way to avert disaster. Terrorists will always have a tactical advantage because they can seek weak spots after governments allocate defensive measures to alternative targets. Many terrorist groups harbor great animosity to Western interests and will patiently wait for their opportunity.

The study of terrorism has been an active field of research in international relations since the early 1970s and the start of the modern era of transnational terrorism (that is, terrorism with international implications or genesis). Of course, the interest in the study of terrorism grew greatly after 9/11, with many new courses being taught at the undergraduate level worldwide. Subscriptions to the two field journals – *Terrorism and Political Violence* and *Studies in Conflict & Terrorism* (formerly, *Terrorism*) – that publish scholarly articles increased following 9/11. Ever since 9/11, there has been a greater appreciation for the application of scientific methods to the study of terrorism. This is reflected in the growing number of articles on terrorism in economics, political science, operations research, criminology, and sociology journals. General journals in the social sciences are now more willing to publish articles on terrorism. In recent years, special issues of journals have been devoted to the study of terrorism – for example, the *Journal of Monetary Economics* (2004), *European Journal of Political Economy* (2004), *Risk Analysis* (2007), *Economics and Politics* (2009), and *Journal of Conflict Resolution* (2010). Scientific methods have been emphasized by the twelve DHS Centers of Excellence that have funded a vast network of researchers studying terrorism. Grant opportunities are also available from government agencies (for example, the National Science Foundation and the Department of Defense) and private foundations. These funding opportunities are also available abroad. Scholarly conferences on terrorism have also grown in number during the last few years.

The purpose of this book is to present a widely accessible political economy approach that combines economic methods and political analysis. Where possible, we apply theoretical and statistical tools so that the reader can understand why governments and terrorists take certain actions even when, on occasion, these actions may be against their interests. Often, we are able to explain behavior that appears counterintuitive once the underlying *strategic* interactions among agents (for example, among targeted governments) are taken into account. Throughout the book, we provide insights that go against conventional wisdom but that are supported by the data. Our reliance on statistical analysis means that we do *not* simply eyeball the data in order to draw conclusions that may not hold up to statistical