

**CAUSES OF DOMESTIC TERRORISM: 1970-2010**

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of the Requirements for the Degree

Doctor of Philosophy

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by

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## **DEDICATION**

This dissertation is devoted to my loving wife, Lydia. Without your support this process would never have come to fruition. I will be ever thankful to you. I also want to thank my parents, Evan and Anna Mae, daughter Stephanie and son-in-law Shawn, and son Brett for their love and encouragement over the years. Finally, I dedicate this work to my granddaughter Danica for the joy she has brought to my life. God has truly blessed me with loving relationships.

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# CAUSES OF DOMESTIC TERRORISM: 1970-2010

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## ABSTRACT

Contrary to conventional wisdom, the structural determinants of transnational and domestic terrorism are not necessarily synonymous. A domestic terrorism event population was derived by applying definitional criteria to the University of Maryland's Global Terrorism Database. Economic, political, systemic, and social structural determinants were tested with a negative binomial regression on 194 states between 1970 and 2010. Results suggested an inverse U relationship between wealth and the incidence of terrorism. Interestingly, short term economic growth had the opposite effect. It depressed terrorism. Political regimes were categorized into three different types - autocracies, anocracies, or democracies. Autocracies were the least susceptible to terrorism. Anocracy was the regime type most conducive to terrorism. Democratic regimes occupied the middle space. They suffered more terrorism than dictatorships but less than anocratic regimes. Cold War bipolarity systemically encouraged terrorism compared to the unipolarity of the post-Cold War era, suggesting superpower rivalry manifested in more terrorist violence. Social tension effects varied depending on type. Linguistic fractionalization increased the incidence of violence. Paradoxically, ethnic fractionalization impeded terrorism. Religious fractionalization had little impact on terrorism. Among control variables, population and a history of terrorism were directly related to terrorism. Mountain terrain and urbanization were not significantly related to it.

# CHAPTER 1

## INTRODUCTION

Caesar thus slain, Brutus went out into the middle of the session-room and tried to speak, and would have detained the senators there with encouraging words; but they fled in terror and confusion.

- Plutarch<sup>1</sup>

For the last half century, the specter of terrorism ebbed and flowed on the world stage. Occasionally, dramatic events dominated global headlines to seeming exclusion of all other matters. More often, terrorist attacks are simply part of the background noise attracting only local attention. Since the September 11, 2001 Al Qaeda attacks upon the United States in New York and Washington D.C., and the aborted attack that ended in rural Shanksville, Pennsylvania, governments focused renewed and sustained interest on the problem of terrorism (Enders and Sandler 2006, Engene 2007, Sandler 2011, Senechal de la Roche 2004). Governmental and public interest, in turn, generated fresh attention to the academic study of terrorism. The growing trend of self-radicalized, “homegrown” terrorists (Bjelopera 2011, Jenkins 2009, Pantucci 2011, Sageman 2008) has only added to the angst and immediacy of the issue.

Over a decade has passed since President George W. Bush declared a "War on Terror."<sup>2</sup> Across the globe, there are few signs terrorism's popularity is on the wane. Terrorism can no longer be viewed as simply a transitory phenomenon too difficult for study, let alone solution.

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<sup>1</sup> Greek/Roman historian as quoted from Laqueur (1978, 18)

<sup>2</sup> Term used in a speech to a joint session of Congress on September 20, 2001

The total numbers of terrorist attacks peak and plunge cyclically. While the numbers of events vary, their deadliness, destructiveness, and potential for catastrophic harm have increased dramatically in recent times.<sup>3</sup> Even states relatively free of terrorism can no longer be sanguine they will remain so. There is evidence terrorism in one state spills over into others (Enders, et al. 2011, 334). Policymakers must be concerned about the potential for disastrous consequences from even a single event.

Terrorism is conducted in the pursuit of different visions. The key, in the viewpoint of revolutionaries, is simply raising consciousness or demonstrating the fragility of the current order of things. At the millennialist end of the spectrum, the goal is the utopia spontaneously erupting from the obliteration of all governmental authority or the implementation of God's will. In the middle range, some seek optimal economic systems that could be designed and implemented following destruction of the current one. Others seek societies better served by altering their relationship with nature, the animal kingdom, or their own government. At the less ambitious end of the scale, groups desire a piece of their own territory or a homeland to call their own. As a human activity, terrorist causes are diverse. Some scholars suggest several terrorisms exist (e.g. Laqueur 2003, Sambanis 2008).

*Terrorism* is notoriously difficult to define. Silke (2004a, 2) observed academic research almost always discusses the definition of terrorism or, more precisely, "the peculiar and long-running failure to reach an agreed definition." This dissertation is no exception. At this point, it is sufficient to describe terrorism simply as illegal political violence originating from levels below the state. The development of the operational definition is addressed in Chapter 2.

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<sup>3</sup> I use "event" and "attack" interchangeably.

Those who study terrorism tend to divide the phenomenon into two varieties - domestic and transnational - based on nationality relationships among perpetrators, victims, and venues. Transnational terrorism crosses national boundaries, either through identity of the victim or the attack location. Usually this cross-border violence is by design. Occasionally it is happenstance. For domestic terrorism, perpetrator, victim, and location nationalities match. The violence, in other words, concerns matters within the state.

Domestic terrorism is by far the more common phenomenon (Enders, et al. 2011, Feldman and Ruffle 2008, Kis-Katos, et al. 2011, Merari 1999, Piazza 2011, Sanchez-Cuenca and De la Calle 2009). It is typically estimated between 80% - 90% of all terrorist attacks. Ironically, it is the least studied. The subject of this research is domestic terrorism. Literature has yet to identify the best explanation of domestic terrorism and empirical testing is largely absent or severely limited. This study's purpose is to contribute to rectifying this shortcoming.

## **The Modern Era of Terror**

Heinous political violence is nothing new. Laqueur (1978) identified tyrannicide as perhaps the earliest technique. Others point to the historical antecedents of the contemporary terrorist in anarchist groups and religious sects of earlier eras (e.g. Hoffman 2006, Rapoport 1990, 2004). But modern terrorism is different. It can be distinguished from its earlier counterpart by growing violence, geographic dispersion, an expanded repertoire of techniques, and the technological environment. Most importantly, the orchestration of modern terrorism is far more sophisticated. Its political and destructive impact have benefited from the study of historical precedent.



The 1968 hijacking of an Israeli *El Al* airliner by the Popular Front for the Liberation of Palestine (PFLP) marked the beginning of the modern era of transnational terrorism (Enders and Sandler 2006, 42, Hoffman 2006, 63). The violence was coordinated for the audience watching. It exploited new methods of media communication and means of transportation to influence many more than those directly involved. Because of the incident's widely acknowledged demonstration effect, we can define the modern era of domestic terrorism as roughly beginning the same year. Modern domestic terrorism began in the late 1960s or early 1970s.

### **Extent of the Problem**

Just how widespread is the domestic terrorism problem? Public perceptions are filtered by inward looking national concerns. The terrorism scourge has migrated from state to state, continent to continent, and from decade to decade. Some states, such as India, have persistent problems. Others like the United States have cyclical trends. Still others, for example Mongolia and Cape Verde, have no recorded attacks since 1970. The charts below illustrate the global scope of the problem. Figure 1.1 depicts the total number of confirmed and probable domestic attacks. Figure 1.2 is a variation depicting only casualty-producing attacks. Note the 1993 data is estimated and the y-axis scales differ.

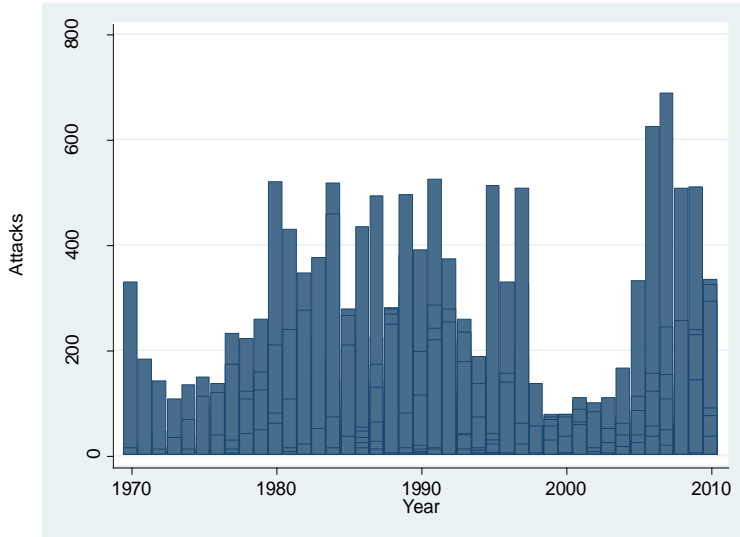


Figure 1.1 Global total of confirmed and probable attacks, 1970-2010

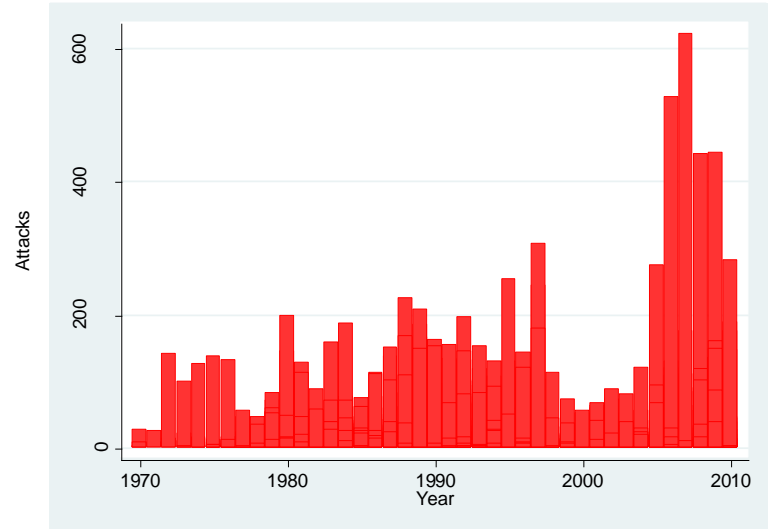


Figure 1.2 Global total of confirmed and probable attacks with casualties, 1970-2010

The reader cannot discern the relatively large number of unclaimed, ambiguously attributed attacks from the charts alone. Roughly half of all terrorism is unattributed. Brian Jenkins (1974, 4) famously observed "terrorism is theater." Nonetheless, it appears the actors are frequently not *prime donne*. Accounting for half the population of events is a practical necessity for empirical research. Including them, for all its drawbacks, outweighs excluding them. Fortunately, unclaimed events do not necessarily mean those responsible are indiscernible. The methods for attributing events and discerning their domestic character are detailed in Appendix A.

### Level of Abstraction

There are three common levels of abstraction used in terrorism research. The first focuses on the individual characteristics and motivations of people who join terrorist groups. Individually centered research explores cognitive and emotional reactions to the environment. It seeks to identify the terrorist personality, profile, or radicalization

process - to date with limited success (Crenshaw 1981, 390, McCormick 2003, 491, Rubenstein 2003, 139).

The second explores terrorist group decision processes (Crenshaw 1988, McCormick 2003). Terrorists are often posited to be rational actors (Bueno de Mesquita 2005a, Crenshaw 1981, 1998, Enders and Sandler 2006, Lichbach 1987, Pape 2003), as are their supporters (Bapat 2006, Freytag, et al. 2011, Paul 2010). In this mold, they are either black box strategic actors engaged in bargaining processes with a state or driven by internal, organizationally focused logic. Group focused research has contributed much insightful knowledge, but ultimately cannot explain what generated the group in the first place.

The third level emphasizes structural conditions conducive to the generation and sustainment of terrorism. Structural explanations analyze relatively slowly changing relational arrangements of economics, political regimes and institutions, systemic influences, social demographics, or geographic factors. For terrorism, the outcomes of structural conditions deviate from traditional power relationships. The coercer is weaker and the symbolic target is stronger.<sup>4</sup> I will explore structural explanations.

### **Lack of Scientific Research**

Scholars have long encouraged scientific research into the causes of terrorism, despite the complexity entailed (e.g. Ross 1993, Senechal de la Roche 2004, Silke 2004b, 2004a). Silke (2004a) assessed the lack of empirics as condemning terrorism research to exploratory and descriptive knowledge. If the concept of domestic terrorism has basis in political reality, it is likely to contain common factors and generate patterns across cases.

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<sup>4</sup> The immediate targets are defenseless civilians.

These factors and patterns can be scientifically studied. Unfortunately, domestic terrorism research has failed the empirical challenge.

Case studies have heretofore been the primary tool for investigating domestic terrorism. While insightful, case studies do not empirically test for generalizability. This could result in identification of inconsequential or case specific variables. It could also result in the failure to identify global variables. By relying solely on case studies, the end result is domestic terrorism is *de facto* treated as nationally unique. This leaves students of terrorism and policymakers alike guessing whether hypothesized explanations are universal or idiosyncratic.

Empirical research is concentrated on the transnational variety of terrorism for primarily one reason: cross-national domestic incident datasets have been virtually unavailable (Kis-Katos, et al. 2011, Sanchez-Cuenca and De la Calle 2009, Sandler 2011, Stohl 2007). Economic, political, systemic, and social explanations dominate both transnational and domestic terrorism literature. Nonetheless, empirical testing is near universally conducted with transnational data - even in domestic literature. Rarely, domestic terrorism explanations have been tested with regional or severely circumscribed global data. Overall, evidence is inconclusive, even with respect to transnational terrorism.

Literature *assumes* and occasionally *asserts* transnational and domestic terrorists emerge from the same causes (Blomberg and Hess 2008a, Bravo and Dias 2006, Engene 2007, Kis-Katos, et al. 2011, Sanchez-Cuenca and De la Calle 2009, Tavares 2004). The logic train is typically one of two versions:

1. Domestic terrorist acts numerically dominate transnational acts; therefore, there is no statistical need to differentiate them or,

2. There is no theoretical reason why causes of domestic and transnational terrorism should differ; therefore, theories tested with transnational data are equally valid for domestic terrorism.

One suspects these logics developed from necessity. The lack of comprehensive domestic data may drive the reasoning as much as conviction of their validity. The few existing empirical "domestic" studies usually do not differentiate between domestic and transnational terrorist acts. The typical approach is to aggregate the two types of terrorism together and assume the results are valid for domestic terrorism in isolation. The other tendency is to ignore one of the nationalities of the perpetrator, victim, or location. Neither method is a constructively valid replication of the most common definitions of domestic terrorism. These observations do not falsify assertions that transnational and domestic terrorism originate from similar causes. They merely suggest the conventional wisdom remains untested with constructively valid domestic data.

For example, empirical Western European domestic research (e.g. De la Calle and Sanchez-Cuenca 2011, Engene 1998, 2007, Skjolberg and Nordas 2007) treated the region like a macrostate. The nationality of the perpetrators was ignored for the classification of events. Only the location of the attack and the nationality of the victims were considered in the population of events. The datasets used for this research also included some attacks on combatant targets, violating a common definitional caveat.

## **A Political Economy Explanation?**

Generalized explanation of domestic terrorism remains in the realm of supposition and speculation. It has arguably not even been proffered. What conditions enable domestically oriented terrorist groups to exploit grievances and generate recruits? The application of transnational explanations to domestic terrorism is unconvincing in several ways. First, how can the 10% to 20% of terrorism cases which are transnational confidently be accepted as representative of the 80% to 90% which are domestic? There are many reasons to suspect the transnational sample is biased with regard to the population of all terrorism cases.

Second, are the conditions which motivate terrorists to attack their fellow citizens the same as those that drive them to travel across hundreds or thousands of miles to do the same? The source and target of transnational events are different. Some terrorist groups engage in both domestic and transnational terrorism, but they are a minority. Terrorist groups usually focus their efforts on a domestic opponent. Systemic or symbolic power and regime openness make a state an attractive victim for transnational terrorists. It is unclear why the economic conditions or social distribution of ethnic and religious groups in a target state would matter for most transnational terrorists.

Third, conditions generating transnational and domestic terrorists may or may not vary. One can speculate, for example, that poor economic conditions in a state generate both transnational and domestic terrorists. It is less likely, however, that autocracies are equally at risk as more open regimes to domestic terrorism. Perhaps terrorists generated in autocracies have no opportunity to ply their trade locally. In any event, existing transnational research largely studies the characteristics of victim states. The origin of

terrorists is more difficult to discern than the victim and location of the attack. This research avoids the source-target problem because they are the same state in domestic terrorism.

Terrorism is a complex phenomenon unlikely to have a monocausal explanation. There is a strong possibility more than one structural condition will have explanatory power. Even so, the answer is likely to be inherent in the realm of political economy. Terrorism is all about politics - the ideals pursued, the ordering of society, and the distribution of power. Those strictly interested in profits need not overly concern themselves with societal matters. Violence is a useful tool to be sure, but primarily criminal enterprises may be easily dissuaded from any political goals they may harbor through economic gain. Terrorists are not so easily bargained with.

Economic structures are likely to intersect with politics in domestic terrorism. Economic conditions influence the satisfaction of citizens, the resources a state can divert to security, the value of the spoils, and the means available to potential terrorists. Unlike transnational terrorism, economics and politics inhabit the same space. Political goals will be shaped by the struggle for the distribution of societal wealth. This fits the narratives of most leftist, rightist, and separatist groups.

The next step in the scientific journey requires testing the common hypotheses about the determinants of domestic terrorism with constructively valid, cross-national time-series data. Political, economic, systemic, and social hypotheses and select control variables will be tested. The evidence will help determine which explanations are correct. The specific contributions of this dissertation are outlined below.

## Contributions

This dissertation makes three contributions. First, it modifies, then expands, and finally operationalizes the Global Terrorism Database (GTD) (LaFree and Dugan 2011a) to derive confirmed and probable domestic terrorist events.<sup>5</sup> Domestic terrorism data is largely unavailable or of limited scope.<sup>6</sup> The newly developed dataset supports future empirical research into the causes, processes, and outcomes of domestic terrorism.

The modifications concerned recoding GTD criteria in those cases where original event coding was credibly in error or better information subsequently emerged. Expansion consisted of coding the national origin of the groups attributed to attacks. GTD codes location and target nationalities but not the nationality of the perpetrators. Construct validity required classifying domestic attacks based on location, target, *and* perpetrator, necessitating country codes for all three nationalities. Additionally, a large number of unattributed events required discerning probable domestic attacks based on perpetrator descriptions, event summaries, or supplemental research.

Operationalization required filtering out events that are not plausibly terrorism and acts of transnational terrorism. The most common definitions of terrorism contain a noncombatant stipulation on the target. The GTD includes some attacks on combatant targets. These were eliminated by applying definitional criteria. After excluding nonevents, the final step was separating domestic from transnational terrorism. The

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<sup>5</sup> The GTD is a comprehensive effort to document global terrorist events since 1970. It contains both transnational and domestic attacks, but does not differentiate between them.

<sup>6</sup> Other datasets include domestic terrorism. The recently updated RAND Database of Worldwide Terrorism Incidents (RDWTI), superseding the RAND-MIPT Terrorism Incident Database, contains global coverage from 1972-2009. Two regional datasets are available, Terrorism in Western Europe: Event Data (TWEED) (Engene 2007) and Domestic Terrorist Victims (DTV) (De la Calle and Sanchez-Cuenca 2011). Both are limited to Western European countries and include attacks on combatant targets.



domestic population was created by comparing perpetrator, target, and location nationalities.

Second, the research supplements the original Alesina, Devleeschauwer, Easterly, and Kurlat (2003) dataset. Alesina et al. published their ethnic, linguistic, and religious identity research in terms of fractionalization, one of two common identity measurements.<sup>7</sup> The original dataset was near universal, but data was missing in some identity categories. Data was similarly missing for dead and newly emerging polities. For example, data was missing for "parent" states such as the Soviet Union and Czechoslovakia. Recent "daughter" states such as Kosovo and Montenegro were likewise missing. By using some of the same sources as the original dataset, I was able fill in several missing variables. The supplemented dataset supports future research by mitigating the missing data problem.

Third, the research empirically analyzes structural explanations of domestic terrorism. This has not been done with regard to domestic terrorism, or at least in strict adherence to construct validity. Using cross-national time-series data, the research scientifically tests frequently posited economic, political, systemic, social, and a variety of control variables. It identifies likely relationships between structures and terrorism. The results will be useful for future research on structural determinants or microprocesses. The study will offer confirming or disconfirming evidence to literature's current explanations. Conventional wisdom has been overwhelmingly derived from research using transnational data and assumed to be applicable to domestic terrorism.

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<sup>7</sup> The other is polarization. Although not addressed in this dissertation, models using polarization frequently produced similar results.

## Dissertation Outline

The dissertation consists of six chapters. Chapter 1 is a brief introduction describing the modern era of domestic terrorism and the scope of the global problem. It also describes the current paucity of scientific studies and the intended approach to the research. It discusses the contribution of the research to literature and outlines the other chapters.

Chapter 2 establishes the operational definition of *terrorism* and its *domestic terrorism* variety. It includes an account of the contentious use of the term for both political and academic purposes and delimitations on what terrorism does not include. The chapter describes the differences between the act of terrorism and the nature of a terrorist campaign. It discusses the concepts of domestic and transnational terrorism and identifies the seven criterion used to establish the construct validity of the population of events. The chapter ends by expounding on what the criteria mean in the juxtaposition between theory and reality.

Chapter 3 reviews the current literature on economic, political, systemic, and social determinants. It details the conventional wisdom on terrorism and the reasoning behind it. The particulars of contradictory and similar findings are explored. Current cross-national explanations, and their presumed domestic application, are examined. Influential and theoretically relevant case studies are reviewed. Empirical literature is summarized in tables with separate columns for transnational and domestic findings.

Chapter 4 contains the research design. It describes the research question and twelve testable hypotheses. It contrasts the negative binomial and zero inflated negative binomial regression techniques and the relative merits of fixed and random effects

models. The chapter contains descriptive statistics and data sources for dependent, independent, and control variables as well as alternative robustness indicators. The chapter contains a brief description of the derivation of Alesina et al.'s original data. It provides a condensed summary of the limitations of Alesina's data with regard to dead and emergent polities.

Chapter 5 analyzes the results and suggests determinants of domestic terrorism. Both primary and alternate models are scrutinized. Probable explanations are made vis-à-vis current theory and literature. The model building process and its effect on determinants is inspected. Outcomes, implications, and limitations are examined. Several tables depicting results are included. A brief comparison is made between conventional wisdom and model results. Finally, the findings are examined with regard to the history of domestic terrorism since 1970 in India and Guatemala.

Chapter 6 draws conclusions from the empirical analysis and makes cautions concerning the research. It briefly reviews the results of the models and their inferences. A comparison is made between traditional explanations for transnational and domestic terrorism and their commonalities and dissimilarities. The research results are reviewed for their reinforcement or weakening of the conventional wisdom of terrorism literature. Policy implications are fleetingly discussed. Finally, the impact of the findings on future research is outlined.

## CHAPTER 2

### WHAT IS DOMESTIC TERRORISM?

"One man's terrorist is another man's freedom fighter."  
- Gerald Seymour 1975<sup>8</sup>

Defining *domestic terrorism* requires defining its antecedent term - *terrorism*.

The politics of terrorism inevitably confuse an already contentious academic debate. Schmid and Jongman (2005, 5-6) documented 109 definitions of terrorism and 22 different word attributes in 1988. The list has not narrowed since then. Seven attributes are frequently repeated in research. Those attributes were *who* (perpetrators or actors), *to whom* (targets), *for whom* (audience), *what* (violence or threats), *why* (motives), *how* (deliberate or premeditated), and *psychological effect* (fear or intimidation). Recurrence, however, implies neither commonality nor harmony. Definitional paradigms are frequently individualized.

The definitional struggle is not inconsequential. Academic definitions can and do lead to dramatically different analysis and results. In an effort to narrow the gap, or at least clarify what is being studied, this dissertation devotes considerable effort to detailing how the GTD was used to develop the dependent variable. Development was guided through a byzantine path of definitional impediments, academic vernacular, operational definition, construct validity, and detailed coding interpretations.<sup>9</sup> Each aspect is addressed in turn.

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<sup>8</sup> From his novel *Harry's Game*.

<sup>9</sup> Detailed coding interpretations are addressed in Appendix A.

## Definitional Impediments

There is a single point of definitional consensus. "Terrorism" is a pejorative word (Hoffman 2006, 23, Jenkins 1974, 1, Richardson 1999, 209). Unfortunately, this consensus is a primary factor inhibiting common definition. Political rivals benefit by tagging their opponents with the term. The depreciatory nature of the terrorist label is accepted at face value and need not be further addressed. The true challenge is labeling specific violent acts as terrorism.

The most used definitions in literature reflect often mutual influences from the United States Department of State, the *International Terrorism: Attributes of Terrorist Events* (ITERATE) database (Mickolus, et al. 2003a), Brian Michael Jenkins (1974), and various publications of Walter Enders and Todd Sandler. These sources have similar definitions but not similar enough to eradicate ambiguity on the exact subject being studied. Incongruence is manifested through omissions and exceptions to the seven common attributes.

Omissions cause ambiguity and dissimilarities. For example, the United States Department of State defines terrorism as "premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents."<sup>10</sup> This definition addresses neither the *audience* nor *threats*. Hoffman (2006, 40) defined terrorism as "deliberate creation and exploitation of fear through violence or the threat of violence in the pursuit of political change." This definition omits eligible *perpetrators* and *targets*.

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<sup>10</sup> (<http://www.state.gov/s/ct/rls/crt/2000/2419.htm>)

Imprecision is also introduced by definitional exceptions. The State Department footnotes its definition with "the term noncombatant is interpreted to include, in addition to civilians, military personnel who at the time of the incident are unarmed and/or not on duty. . . . We also consider as acts of terrorism attacks on military installations or on armed military personnel when a state of military hostilities does not exist at the site, such as bombings against U.S. bases in the Persian Gulf, Europe, or elsewhere."<sup>11</sup> The exception is academically problematic. It is politically biased toward defining anti-United States violence as terrorism. Terrorists, or would-be guerrillas, have little basis in international law to declare war or define combat zones.

The 1998 Arab Convention for the Suppression of Terrorism circumvented its definition with "[a]ll cases of struggle by whatever means, including armed struggle, against foreign occupation and aggression for liberation and self-determination, in accordance with the principles of international law, shall not be regarded as an offence. This provision shall not apply to any act prejudicing the territorial integrity of any Arab State."<sup>12</sup> This caveat effectively excludes Arab insurgents from being capable of committing terrorism. It also makes Arab homelands incapable of suffering domestic violence in any form other than terrorism. Examples of definitional shortcomings need not be further explored. Establishing the research paradigm, however, requires lengthy explanation.

### **Academic Vernacular**

"Terrorism" is used in academic vernacular to describe two related but different notions. First, terrorism may describe the nature of a campaign. The aggregate activities

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<sup>11</sup> Ibid.

<sup>12</sup> ("Arab Convention for the Suppression of Terrorism" 1998)

of political groups are characterized as terrorism or civil war or any number of other political violence categorizations. This approach has utility. For example, rational choice analysis deems terrorism a "strategy." Strategies are not individual acts but an aggregation of activities with a guiding intelligence. It is also useful among those who use the magnitude of bloodshed as the defining attribute of terrorism. Bloodshed refers not to the outcome of an individual incident, but to aggregate violence occupying the middle ground between violent protest and civil war. When categorized in the aggregate sense, terrorism becomes anything terrorists do. All activities of terrorists groups, no matter their nature, become conflated with terrorism. Similarly, groups whose aggregate violence might be described as civil war or genocide become incapable of committing terrorism. The mutually exclusive nature of campaign categorizations obscures the nature of individual acts.

Second, terrorism describes an individual event. That is the sense of the term used in this research. Each act is individually assessed against criteria to determine its categorization. Not every terrorist group activity is necessarily terrorism. They can and sometimes do conduct violence within the bounds of international law. Likewise, groups engaged in civil war are capable of committing acts of terrorism. The overarching nature of campaigns does not define the character of individual acts. As used here, the terms "terrorist group" and "terrorists" do not summarily judge the character of all their activities.<sup>13</sup>

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<sup>13</sup> I use "guerrilla" to refer to subnational movements operating in accord with the laws of war and "insurgent" as an umbrella category including both terrorists and guerrillas.

## Operational Definitions

Terrorism research suffers from incompatible paradigms (Silke 2004b, 4). Solving the argument over what is and what is not terrorism is nigh impossible. Criteria transparency, however, is possible. To that end, it is best to dispense with defining terrorism writ large and focus on the operational definition.

Enders, Sandler, and Gaibullov (2011, 321) defined terrorism as "premeditated use or threat to use violence by individuals or subnational groups against noncombatants in order to obtain a political or social objective through the intimidation of a large<sup>14</sup> audience beyond that of the immediate victims." With one minor exception, I adopted this definition because it is objective, reasonably operationalized, and mainstream.

Because audience size is difficult to discern, I dropped the caveat "large."<sup>15</sup> The slightly revised definition of terrorism, a minimal variation of Enders, Sandler, and Gaibullov, is as follows. *Terrorism* is the premeditated use or threat to use violence by individuals or subnational groups against noncombatants in order to obtain a political or social objective through the intimidation of an audience beyond that of the immediate victims.

While the broader terrorism concept is contentious, differences between *domestic* and *transnational* terrorism are less so. The operational definition of domestic terrorism is a simple derivation of the basic term. *Domestic terrorism* is the premeditated use or threat to use violence by individuals or subnational groups against noncombatants in order to obtain a political or social objective through the intimidation of an audience beyond that

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<sup>14</sup> In some of their publications, Enders and Sandler substitute the word "huge" for "large."

<sup>15</sup> The GTD only records whether events were intended for audiences beyond the immediate victims with no characterization of audience size.



of the immediate victims in which the nationality of the perpetrators, victims, and attack location match.<sup>16</sup> If any national identity differs, the event is transnational and excluded (Enders, et al. 2011, Hoffman 2006, Lai 2007, Mickolus, et al. 2003b).

## **Construct Validity**

The meaning of the operational definitions may be specified further by returning to the recurrent attributes. *Who, to whom, for whom, what, why, and psychological effect* serve as a useful guide for assessing construct validity and logical linkages between the operational definition and the population of events. The operational definitions contain the most common attributes. Specifically:

Who: individuals or subnational groups  
To Whom: noncombatant targets  
For Whom: audience beyond that of the immediate victims  
What: violence or the threat to use violence  
How: premeditated  
Why: obtain a political or social objective  
Psychological Effect: intimidation

An example may help clarify their application to an incidence of violence. Timothy McVeigh exploded an improvised truck bomb at the Alfred P. Murrah federal building in Oklahoma City on April 19, 1995. A total of 168 people were killed and 650 injured (LaFree and Dugan 2011a, 199504190004). The blast also damaged 86 cars and 324 buildings.<sup>17</sup>

Who: individual citizens (Timothy McVeigh, Terry Nichols, Michael and Lori Fortier)  
To Whom: random noncombatant victims and property<sup>18</sup>

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<sup>16</sup> In this context nationality refers to the state. See Appendix A for circumstances when attacker and target nationality are ambiguous.

<sup>17</sup> ("Oklahoma City Police Department Alfred P. Murrah Federal Building Bombing After Action Report" 2007)

<sup>18</sup> Eight fatalities were federal law enforcement officials and one was an Air Force member but they were not specifically targeted ("Oklahoma City Police Department Alfred P. Murrah Federal Building Bombing After Action Report" 2007).

For Whom: unknown sympathetic audience (Michel and Herbeck 2001)  
What: bomb  
How: preplanned over 7 months (Michel and Herbeck 2001)  
Why: incite revolution against the United States government  
Psychological Effect: widespread public fear and intimidation of the federal government

Few would disagree this infamous example was an act of terrorism. Unfortunately, many incidents are more difficult to categorize. The definitional attributes require more explanation.

### *Who (Perpetrators)*

Scholars disagree on whether states can commit terrorism.<sup>19</sup> Some argue states are the primary purveyors of terrorism and differentiating perpetrators by their official capacities is misguided (e.g. Carr 1997, Chomsky 2001). Undoubtedly, states are effective at causing death and destruction. States are also capable of morally reprehensible acts. Nonetheless, states and subnational actors have very different motivations and means (Bergesen and Lizardo 2005, Enders and Sandler 2006, Goodwin 2006, Hoffman 2006, Laqueur 1986, Merari 1993). Regardless of the normative or academic merits of the terror state argument, it complicates and frustrates causal analysis when states and subnational actors are conflated. I offer a short justification for excluding state terrorism beginning with their different motivations.

Internally, states want to preserve the current regime while terrorists want to either overthrow or break free from it. Externally, states seek advantage or cooperation vis-à-vis other states in the international system. Terrorists seek to be admitted as players in the competition or, to replace the system altogether. Their committed and maximalist

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<sup>19</sup> The term terror first achieved prominence during the French Revolution where servants of the state used widespread violence to intimidate their enemies (Hoffman 2006, Merari 1993)

nature rarely allows for cooperation, even with groups fighting the same enemy. States desire to rule in the present while terrorists, or at least some varieties of them, desire to change the nature of humankind. States are internationally and domestically recognized actors with at least a modicum of legitimacy. Terrorists constantly battle to establish their status as an alternative to the state.

There is even less compatibility in resources. States have militaries, police forces, intelligence apparatus, and reliable sources of income. Terrorists constantly struggle to establish these capabilities. Absent real capabilities, terrorists attempt to create the impression they are powerful and legitimate actors. For example, they frequently, and somewhat grandiosely, label themselves as "armies", "brigades", or "commandos" (Hoffman 2006). They spend considerable time raising money through either voluntary donations, taxes, "liberated" property or, in some cases, going into business for themselves. Terrorists may even carry out "revolutionary" justice and conduct trials for and pass sentence on captured enemies.

Many scholars solve the actor dilemma by drawing a distinction between *terrorism* and state *terror*. They recognize that both states and subnational actors can commit unjustified violence but for different reasons. I follow this tradition, albeit without addressing state terror. This study concerns the actions of subnational groups and individuals.

### *To Whom (Targets)*

Terrorism is "illegal" (i.e. intentionally directed at noncombatants) violence (Enders, et al. 2011, Goodwin 2006, Krueger and Maleckova 2003, Kydd and Walter 2006, McCormick 2003, Rapoport 2004). This is a common, but not universal, treatment in

literature.<sup>20</sup> Labeling terrorists events without segregating noncombatant attacks risks defining terrorism based on the normative or political appeal of the cause.<sup>21</sup> Terrorism, if it describes any meaningful concept, is different from legitimate warfare.<sup>22</sup>

What, then, is a combatant target? Rhetorically, states typically define attacks on their military or security forces as terrorism. Although this is perfect political logic, academically it conflates all anti-state violence with terrorism. Recall the United States State Department stipulated combatants must be armed, on duty, and attacks must take place in declared hostile zones. These stipulations contain conceptual difficulties. Even regular armed forces do not often meet them.<sup>23</sup> If insurgents are not to be *ipso facto* categorized as terrorists, legitimate targets must be clarified.

Combatant targets may be defined as those not prohibited by the laws of war.<sup>24</sup> The detailed context needed for making that determination is not available for large *n* research. Simplifying criteria are necessary. I considered combatant targets to include the military, the police, or property damaged in the pursuit of military objectives.<sup>25</sup> Police are included because they often lead the fight against terrorists and many countries' internal security forces dwarf the size of their military. All other attacks on

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<sup>20</sup> For exceptions, see Sambanis (2008, 182) or Sanchez-Cuenca and De la Calle (2009, 34) who deemed noncombatant targeting "one of the most widely shared false beliefs about terrorism."

<sup>21</sup> Laws of warfare are codified in the Geneva Conventions. Common Article II allows for insurgencies or guerrilla movements in which combatants are targeted.

<sup>22</sup> Many theorists argue terrorism is indeed warfare (e.g. Carr 1997, Howell 2003, Merari 1993, Podhoretz 2007, Sanchez-Cuenca and De la Calle 2009).

<sup>23</sup> For example, the momentary armament status of enemies is often unknown, combatants are always on duty, and subnational groups do not have the mechanisms states have to declare war zones. Al Qaeda (bin Laden and al-Zawahiri 1998) and Anonymous (Anonymous 2012) "declared war" on the United States globally. Their legal competence to do so under international law is questionable. They are not actors in the system.

<sup>24</sup> The law of war is not without debate. National differences exist and not all states are signatories to every Geneva protocol.

<sup>25</sup> Military or police may be victims of terrorism when perpetrators were unaware or unconcerned with their presence. In this case, there would be no intent to attack a combatant target.

humans or property, excepting peculiar circumstances, are by default aimed at noncombatants.

### *For Whom (Audience)*

Terrorism is about intimidation, inspiration, and the people watching. If the violence is meant to influence victims alone, it becomes efficacious rather than political. The audience requirement eliminates purely criminal acts from the population of events. Some definitions include a requirement for a large or huge audience (e.g. Enders and Sandler 2006, Enders, et al. 2011). Unfortunately, databases do not characterize audience size and operationalizing "large" is not practical. Therefore, the alternative wording of "audience beyond the immediate victims" was adopted. The use of violence, even anonymous violence, achieves reputation effects if the attack is "street" attributed to a political cause. The GTD contains a criterion assessing audience beyond the immediate victims.

### *What (Violence or Threats)*

Terrorism is violent. Violence, however, has degrees of magnitude. Terrorism implies some minimal magnitude of violence. The difficulty is judging when incidents exceed that minimum level. Many researchers address this issue by defining terrorist violence as "extranormal" (Braithwaite and Li 2007, Burgoon 2006, Enders and Sandler 1999, 2002, Koch and Cranmer 2007, Li 2005, Mickolus, et al. 2003b, Robison, et al. 2006). Extranormal violence is designed to seize media headlines and prevent the audience from placing attacks into a known framework of interpretation. For example, in 2004 Chechen and Ingush separatists seized and eventually killed 186 school children in

Beslan, Russia.<sup>26</sup> The grisly nature of the act undoubtedly garnered the attention of, and instilled a level of fear in, anyone who had ever been a parent. People are shocked when children are intentionally murdered. Nonetheless, the usefulness of the extranormal definitional "cure" for event inclusion or exclusion is unclear. It merely shifts the uncertainty to the dividing line between normal and extranormal violence.

Terrorism is most often associated with the brutal images of human death and injury. There is no conceptual minimal floor on casualties - one is enough. Nonetheless, common definitions and virtually all databases count property damage, with or without human casualties, among incidents of terrorism. Even those discounting a coherent pattern to purely property attacks (e.g. Enders and Sandler 2006) do not exclude them. There is ambiguity as to the property damage minimum qualifying as terrorism. For example, does pro-terrorist graffiti or minor acts of vandalism qualify as terrorism? One might object these events do not generate fear. Fear, though, is highly contingent and contextual. Regardless of ambiguities, inspection of GTD data indicates recorded casualty-free events exceeded a reasonable minimal level of loss. Terrorist violence must result in property damage, human casualties, or both.

Threats likewise range from highly credible to absurd. Unfiltered, threats and hoaxes could number well into the tens of thousands on an annual basis for the United States alone. Some minimal level of credibility is required. The GTD codebook captured the concept well. Threats mean "imminent danger." Neither written nor verbal threats suffice (LaFree and Dugan 2011b, 5). Threats qualify as terrorism, but the threat must be tangible, immediate, and credible. Threats included in the GTD database were accepted as having met these criteria.

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<sup>26</sup> "Putin meets angry Beslan mothers." BBC News <http://news.bbc.co.uk/2/hi/europe/4207112.stm>

### *Why (Motives)*

Typically, terrorism definitions specify attack motives must be political, social, or religious in nature. Research definitions often subsume one motive with another. For example, they include religious motives within social motives, or capture political, social, and religious motives under an umbrella term such as "ideological." There is little debate on the propriety of including these alternative terms. The goal is to rule out egregious violence in the pursuit of private economic gain. For example, the gruesome violence employed by the Zetas, a Mexican drug trafficking organization, does not generally qualify as terrorism. Constructively valid motives must also eliminate individual sociopathic behavior and desires (Evans 2005, 177).

The GTD filters for motivations "aimed at attaining a political, economic, religious, or social goal" (LaFree and Dugan 2011b, 5). Economic motives are included, but are circumscribed to the pursuit of systemic change. In other words the economic motives in the GTD are essentially equivalent to political goals. They were accepted as valid.

### *How (Deliberate or Premeditated)*

Terrorism is not unplanned, heat of the moment violence. It must be planned in advance and intended. It connotes malice of forethought to achieve a specific objective in pursuit of an overall larger political goal. Spontaneous violence is not terrorism. For example, unplanned riots or murders would not qualify. Terrorism would include planned violence disguised to appear spontaneous. For example, terrorist groups could infiltrate provocateurs into a demonstration to incite crowd violence. The planned intent is to use unwilling participants as cover for their own attacks and to provoke security

forces with the full knowledge noncombatants would be injured or killed. Terrorism is premeditated. All events in the GTD were assumed to be deliberately planned.

### *Psychological Effect (Fear, Anxiety, or Intimidation)*

Fear and intimidation are in effect synonyms for the "terror" in terrorism. Terror is an emotional state of mind and as such is unobservable in the macro sense. Nonetheless, the fear and intimidation inducing attributes of terrorism may be safely assumed. Humans by nature fear violence. All the more so for acts designed specifically to emphasize indiscriminate selection of victims. Terrorism reminds the audience of their vulnerability. It disrupts the psychological need for security. The fear effect is implicit in all violent acts and credible threats. All GTD events were assumed to produce fear, anxiety, or intimidation.

### **Detailed Coding Interpretations**

The final step in assembling the dependent variable was the meticulous process of translating actual attacks into useable data. Creating the population of terrorist events required filtering raw GTD data through the recurring attributes. Two - psychological effect and premeditation - need not be included as criteria. An intimidating effect and premeditation were assumed in all events. The population of terrorist events was created by applying the remaining five attributes. Domestic terrorism, however, was a subset of all terrorist events. This necessitated screening on three additional criteria of perpetrator, target, and location nationality. The detailed coding interpretations address the complexity of interpreting reality and classifying it as domestic terrorism. Interested readers are invited to refer to Appendix A.



## **Summary**

This chapter established the broad conceptual precepts of terrorism and its domestic and transnational varieties. Domestic terrorism was defined as the premeditated use or threat to use violence by individuals or subnational groups against noncombatants in order to obtain a political or social objective through the intimidation of an audience beyond that of the immediate victims in which the nationality of the perpetrators, victims, and attack location match. The development of the operational definition was traced through the definitional impediments and common academic vernacular. The operational definition was further examined for construct validity in terms of seven recurring definitional attributes - who, to whom, for whom, what, why, how, and psychological effect.

## CHAPTER 3

### THEORETICAL OVERVIEW

But, it is often asked, have not acknowledged Anarchists committed acts of violence? Certainly they have, always however ready to shoulder the responsibility. My contention is that they were impelled, not by the teachings of Anarchism, but by the tremendous pressure of conditions, making life unbearable to their sensitive natures.

- Emma Goldman<sup>27</sup>

#### Current Literature

In the next sections, I briefly review the most common causal explanations of terrorism. Terrorism literature is wide and crosses academic disciplines. Explanations range from individual psychological processes to rational decision models to systemic interactions. Here we are concerned with structural determinants of terrorism - the conditions conducive to terrorist violence. While they address fundamental questions about terrorism, individual psychology and group decision making are not considered.

There are no universally accepted structural explanations for terrorism. This is particularly true for the domestic variety. Cross-national explanations suggest *local* (domestic) conditions explain terrorism but overwhelmingly empirically test with *transnational* incidents.<sup>28</sup> Reflecting its transnational research dominance, literature frequently differentiates determinant effects between being a victim or target of an attack from being the state of origin or source of the terrorist. For domestic terrorism, the origin of attackers and targets would of course be the same. Causal equivalence, however, between domestic and transnational terrorism is assumed. In other words, the

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<sup>27</sup> Anarchist activist and theorist quoted from Laqueur (1978, 196)

<sup>28</sup> Exceptions using undifferentiated transnational and domestic terrorism include Engene (1998), Goldstein (2005), Abadie (2006), Feldman and Ruffle (2008), Sanchez-Cuenca and De la Calle (2009), Freytag, et al. (2011), Kis-Katos, et al. (2011).

determinants and relationships between source and target apply equally in transnational and domestic settings. This observation is important because the structural conditions for targets and sources are one in the same in domestic terrorism.

Economic explanations are the most widespread, but not unchallenged, wisdom on conditions affecting terrorist activity. The idea that poverty lies at the root of terrorism is fashionable among policymakers and the public as well as academia. Political explanations are also popular but appear to have fallen out of favor in the wake of wars in Iraq and Afghanistan, at least among elites.<sup>29</sup> Economic determinants of terrorism are the logical start point for literature review.

## **Economic Determinants of Terrorism**

Crenshaw (1981, 381) differentiated between precipitants, events that ignite terrorism, and preconditions, factors that create environments where terrorism can flourish. Economic theories address preconditions of terrorism. Revolutionary communiqués frequently justify violence based on altruistic motives to rectify grievances on others' behalf (Ehrlich and Liu 2002, 186-87, Goldman 1978 [1910], 194, Hoffman 2006, 37, Sageman 2008, 48) - in this case the impoverished.

Public consensus and terrorist rhetoric both contend poor economic conditions within a state produce motivating grievances. Although terrorist ideology may explain economic deprivation with a global narrative,<sup>30</sup> virtual perceptions do not replace more corporal, proximate knowledge and opponents. Violent reactions are posited to occur

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<sup>29</sup> Speculatively, they perhaps fear theoretical links between autocracy and terrorism could inexorably lead to future wars.

<sup>30</sup> After author codification of attributed events, attacks by Marxist orientated groups outnumbered rightist and religious groups combined.

because of personal poverty, acting on behalf of others' poverty, or due to immediate economic prospects.

The South Asian region<sup>31</sup> serves as a backdrop for the economic conditions puzzle. Poverty and terrorism are both present, but wealth and violence levels are inconsistent. In general, the area features economies transitioning from abject poverty through strong economic growth. There are a few regionally wealthy states which appear to be peaceful. Some states with the worst poverty also appear peaceful. Economics are likely to affect the level of terrorism in South Asia. The exact relationship, however, is not self-evident. It requires scientific testing.

The area contains several hotbeds of domestic terrorism - Afghanistan, Bangladesh, India, Nepal, Pakistan, and Sri Lanka. Nonetheless, all except Afghanistan and Nepal have at least doubled their per capita income in constant dollars since 1970. Nepal is currently plagued by terrorism. It was also a late bloomer, with terrorist violence largely a feature of the 2000s. Afghanistan is accurately described as the poorest state in the world.<sup>32</sup> Afghanistan was relatively domestic terror-free from 1970 to 2000. However, it has been among the most terror-prone states in the 21st century.<sup>33</sup> Although infamous in

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<sup>31</sup> I used geographic regions as defined by the GTD. Refer to Appendix B for the complete listing of regions and their constituent states.

<sup>32</sup> Afghanistan's GNI per capita is missing from World Bank data prior to 2002. It is safe to assume it was very low.

<sup>33</sup> Afghanistan's increase in terrorism is likely to have started earlier and could be due to external factors - i.e. Soviet and United States invasions. The Soviet Union invaded in the 1970s and departed in 1979. Afghanistan suffered civil war between the Taliban and Northern Alliance during the 1980s and 1990s. The Soviet and civil war eras do not reflect much terrorism of any type in the database. One suspects this is a case of reporting bias. Both conflicts were unlikely to be gentlemanly affairs conducted in meticulous accordance with the laws of war. The United States attacked subsequent to the September 11, 2001 attacks. The increase in recorded Afghan attacks follows shortly thereafter.

the West as home to the internationally oriented Al Qaeda network, the GTD records 908 domestic terrorist events in Afghanistan since 2003.<sup>34</sup>

The most terror prone states - India and Pakistan - have had strong but wildly fluctuating growth rates. The Indian middle class in particular has been expanding at a rapid rate. Wealth has diffused through the country yet it has consistently been terror ridden. Relatively wealthy regional states, for example the Seychelles and Mauritius, suffer little domestic terrorism. Mauritius has enjoyed steady, positive growth but the Seychelles alternated between large magnitude swings of positive and negative growth.

Does terrorism spring from economic conditions? Conventional wisdom posits as much. Underdevelopment produces angry young men susceptible to recruitment (Ehrlich and Liu 2002, 188). I begin the economic literature by exploring the poverty explanation.

### *Poverty*

The standard narrative is the poor attack the rich. The reasons for this are twofold. First, poverty is major factor fueling perceived relative deprivation and an incentive to violence against governments (Gurr 1968, 1970). Perceived deprivation is an individual cognitive conclusion and not directly observable. Additionally, the economic status of individual terrorists is largely unknown. In compelling case studies, Krueger and Maleckova (2003) found Hezbollah and Jewish terrorists were not poor. Berrebi (2007) found similarly for Hamas and Palestinian Islamic Jihad. Indeed, the well off and better educated are preferred recruits. Their skills make them more effective terrorist operatives (Benmelech, et al. 2012, Bueno de Mesquita 2005b). Nevertheless, the relatively high economic status of individual terrorists does not rule out poverty as an influencing

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<sup>34</sup> This number is after filtering the original population. GTD listed 2410 Afghan events between 2003 and 2010. The overwhelming majority of excluded events were acts of war, not transnational terrorism.

condition. Terrorists often view themselves as altruists acting for the benefit of others (Burgoon 2006, Hoffman 2006, Li and Schaub 2004).

While there is little information on the wealth of terrorists, data on the economic status of individual victims is near nonexistent. To be sure, wealthy businesspeople and powerful politicians are lucrative targets for terrorists. For example, the German Red Army Faction's kidnapping of industrialist Hanns Martin Schleyer and the Italian Red Brigades' kidnapping of former Prime Minister Aldo Moro in the 1970s garnered widespread media attention. The kidnapping of presidential candidate Ingrid Betancourt in 2002 by the Revolutionary Armed Forces of Colombia (FARC) had comparable results. Still, and similar to individual terrorists, large *n* research must make assumptions about the wealth of individual victims. The poverty argument assumes victims of transnational terrorism from affluent countries are rich. Victims of domestic terrorism are, on average, likewise assumed to be actually or symbolically wealthy.

Notwithstanding the paucity of individual data, gross national income (GNI) per capita is an observable indicator of societal wealth. Terrorist groups are expected to originate from poor states. Their victims are expected to be wealthy - either citizens of wealthy countries or, through an analogous process, from favored segments within a state. There is evidence per capita income is directly related to victimization by transnational terrorism (Blomberg and Hess 2008b, Blomberg, et al. 2004, Blomberg and Rosendorff 2006, Krueger and Laitin 2008, Tavares 2004). In other words, the rich are targeted.<sup>35</sup>

Similarly, per capita income is indirectly related to the likelihood states generate transnational terrorists (Azam and Thelen 2008, Basuchoudhary and Shughart 2010,

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<sup>35</sup> The wealth of individual victims is generally unavailable.

Blomberg and Hess 2008b, Blomberg and Rosendorff 2006, Ehrlich and Liu 2002). In other words, terrorists are bred in poor societies.

On the domestic side, per capita income is inversely related to terrorism (Blomberg and Hess 2008a, Bravo and Dias 2006).<sup>36</sup> This supports the poverty theory. Bear in mind the terrorists and targets are from the same state. Domestic researchers have not attempted to separate structural determinants of terrorist generation from victimization. *Ceteris paribus*, poor states would be expected to produce more terrorism than wealthy states. Poverty is what produces terrorists.

Other relative deprivation measures are found in literature. One often cited work examined specific economic policies. Burgoon (2006) found strong social welfare policies, generally associated with wealthy states, depressed the production of transnational terrorists. Inequality is another theoretically valuable measure for relative deprivation, but it is avoided or of dubious value due to its sparse availability (Fish, et al. 2010, Li and Schaub 2004). Unfortunately, neither social welfare nor inequality measures are as widely available across time and space as income per capita. They are not included in this research.

A second justification for the poverty explanation is the lack of economic prospects. Terrorism springs not from relatively stable societal wealth, but from more immediate economic concerns. Overall economic wellbeing is relatively static, expected, and taken for granted. Satisfaction, however, is calculated and anticipated in near real time. In

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<sup>36</sup> Bravo and Dias did not differentiate between domestic and transnational terrorism. As the preponderance of their events were domestic, I listed them as a "domestic" study in Table 3.1. Their independent variable was the Human Development Index, a composite measure of per capita income, literacy, school enrollment, and life expectancy. The measure correlates well with per capita income.

other words, prospective hopes are more salient than retrospective appreciation. As economic frustration builds, people lash out in terrorist violence.

An individual's assessment of their immediate economic prospects cannot be directly observed. It must be inferred. Measures such as economic growth, employment, or education are frequently considered substantive factors in a person's calculation of their satisfaction and prospects. For example, economic growth implies better employment, anticipation of employment opportunities, and a diffusion of wealth. Education improves the skills needed for desirable employment. Over time, unmet income expectations may lead to strong dissatisfaction.

Of all these measures of short term economic prospects, economic growth data is the most widely used in literature. It is the one used in the research design. Poverty theory expects growth is inversely related to victimization and directly related to the creation of terrorists. Economic growth did dampen victimization from transnational terrorism (Blomberg, et al. 2004). Kis-Katos, et al. (2011) found likewise for domestic terrorism. Goldstein (2005) found high unemployment, indicative of negative or stagnant growth, increased the risk of suffering a terrorist attack both transnationally and domestically.

### *Wealth*

Many researchers argue wealth - not poverty - is the key determinant of terrorism. Reasoning, unsurprisingly, differs from poverty theories. Wealth is critical for two reasons. Most research posits an individual or societal opportunity approach. Wealth enables citizen mischief. Developed states have better transportation and communications systems, contain more targets, and have more lethal weapons available (Ross 1993). They have disposable income that can be tapped for resources to sustain



terrorist campaigns. Wealthier and better educated people are more survivable terrorists in complex environments. The economic stakes and potential payoffs are much higher in wealthy states, encouraging violent competition for the spoils.

A less common variation of societal opportunity argues citizens of wealthy states simply have higher expectations. Once expectations outstrip the ability or willingness of the state or society to deliver, the stage is set for violence. Some of that violence takes the form of terrorism. For example, the Animal Liberation Front claims active chapters in 41 states, virtually all of them developed.<sup>37</sup> The most active groups are located in the highly developed regions of North America and Western Europe. Animal liberation advocates champion diverse causes, but among them are an end to any commercial use of animals and restricting humans to strictly vegetarian diets. These causes appear to have little appeal in developing states. Societal wealth may enable new types of radical politics.

Within societal opportunity literature, rich states are both the target and source of terrorism. There is some evidence this may be the case. Higher per capita income increased victimization from transnational terrorists (Blomberg, et al. 2004, Krueger and Laitin 2008, Piazza 2008, Tavares 2004).<sup>38</sup> Wealthy states were also associated with the generation of transnational terrorists (Kis-Katos, et al. 2011, Piazza 2008). Wealthy states were directly related to domestic terrorism (Kis-Katos, et al. 2011).

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<sup>37</sup> See ("Bite Back: Diary of Actions 2002-2012" 2012)

<sup>38</sup> Blomberg and Hess (2008b) and Blomberg and Rosendorff (2006) were not cited here because they also found poor states were the source of terrorism. This is incompatible with wealth theory. Piazza (2008) was not cited in poverty theory because he also found rich states were the source of transnational terrorism, which would be incompatible. Note Piazza (2008) used HDI which is a composite variable including per capita income.

The second reason wealth matters is because richer states are more capable. They can increase their defenses against terrorism (Enders and Sandler 2006, Li and Schaub 2004) and reduce the incentive for it (Li and Schaub 2004). This is the direct opposite reasoning from the societal opportunity argument. The state is more capable and the citizens more satisfied so terrorism is deflected to poorer states. For example, states able to deploy expensive airport security measures and guard forces reduced the frequency of airline attacks (Enders and Sandler 2002, 2006). By this reasoning, wealth is inversely related to the incidence of terrorism. Poor states would be both the victims and sources of terrorism.

There is some evidentiary support for the capabilities argument in literature. Low per capita income is associated with increased victimization from transnational terrorists (Li 2005, Li and Schaub 2004). The same holds for domestic terrorism (Blomberg and Hess 2008a, Bravo and Dias 2006). Poor states are the source for transnational terrorists (Azam and Thelen 2008, Basuchoudhary and Shughart 2010, Ehrlich and Liu 2002).<sup>39</sup>

### *Middle Tier*

Middle tier research also examines opportunities, but the focus of the cost-benefit calculations is different from wealth explanations. By middle tier I refer to economies transitioning from poverty but unable to be described as developed. Terrorists grow where the risk of punishment is low but the economic rewards are contingent. When government security forces are weak, which is frequently the case for developing states, the costs of supporting terrorism are less. People join the groups with less fear they will be caught or killed. Their property and families are also less at risk. The potential

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<sup>39</sup> Blomberg and Hess 2008b and Blomberg and Rosendorff 2006 were not cited here because they also found wealthy states were the victims of terrorism, which would be incompatible.

benefits are higher for many in developing economies. Where poverty is widespread and unlikely to change, there are few rewards worth the risk of participation in terrorism. In developed economies, the economic conditions are sufficient and there is also little to be gained through the outlaw life. Developing economies occupy the middle ground. Economic rewards are possible but neither guaranteed nor immediate.

The Niger Delta conflict plausibly fits a middle tier explanation. The Nigerian oil industry dominates the economy. Nigeria nationalized the industry in the 1970s but it is operated through a joint venture with the Shell Corporation. The Ogoni and Ijaw minority groups became increasingly dissatisfied with the environmental degradation of the river delta ecosystem and the discriminatory distribution of profits by the central government (Boele, et al. 2001, Hanson 2007). After a several years of essentially nonviolent activism, the militant Movement for the Emancipation of the Niger Delta (MEND) and Niger Delta People's Volunteer Force (NDPVF) emerged in the 2000s to conduct violent operations, to include terrorism. Both groups are nominally separatist. However, their primarily tactic is the extortion of rents from the government and Shell (Boele, et al. 2001, Hanson 2007).

Middle tier explanations expect developing economies to be both the target and source of terrorism. Lai (2007) found per capita income had an inverted-U effect on the generation of transnational terrorists. Freytag, et al. (2011) found the same inverted-U effect for domestic terrorism.<sup>40</sup> Blomberg and Hess (2008a) found a U effect for

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<sup>40</sup> Freytag et al. did not separate transnational from domestic terrorism but the preponderance of events were domestic.

victimization by transnational terrorists, but offered no explanation on why states with middle tier economies would be targeted less than poor or wealthy ones.

### *Economics as Inconsequential*

Casting doubt on economic explanations altogether, wealth and economic prospects may not matter at all. Terrorism is rooted in politics or social structure, not economics. There is evidence from research using both income and economic prospect measures.

Per capita income is unrelated to transnational attacks (Campos and Gassebner 2009, Dreher and Fischer 2010, Kurrild-Klitgaard, et al. 2006, Piazza 2006). Neither is it related to the origin of transnational terrorists (Krueger and Laitin 2008, Krueger and Maleckova 2003). Domestic research also found income disconnected from terrorism (Abadie 2006, Goldstein 2005)

Turning to economic prospects, the economic growth rate was not significant for victimization from transnational terrorism (Drakos and Gofas 2006, Feldmann and Perala 2004, Kurrild-Klitgaard, et al. 2006, Piazza 2006). Inflation, an indicator of economic prospects, does not matter either (Feldmann and Perala 2004, Piazza 2006). Other factors analogous to economic prospects were likewise poor predictors of transnational terrorism. For example, education (Drakos and Gofas 2006) and unemployment (Feldmann and Perala 2004, Piazza 2006) were not correlated with increased victimization. In domestic research, (Skjolberg and Nordas 2007) found growth unrelated to terror. In short, terrorism is not explained by wealth or economic prospects.

Table 3.1 summarizes the empirical literature on terrorism. For clarity, the transnational and domestic literatures are separated. Transnational literature is further subdivided between research that examines the targets of terrorism and that which

addresses the sources for terrorists. Research that does not differentiate between transnational and domestic terrorism is categorized based on the nature and preponderance of the underlying terrorist event data.

Independent Variable	Relationship	Transnational Terrorism		Domestic Terrorism
		Target	Source	
Wealth	Direct	Blomberg and Hess 2008b Blomberg and Rosendorff 2006 Blomberg et al. 2004 Krueger and Laitin 2008 Piazza 2008 Tavares 2004#	Kis-Katos et al. 2011& Piazza 2008	
	Indirect	Li 2005 Li and Schaub 2004	Azam and Thelen 2008 Basuchoudhary and Shughart 2010 Blomberg and Hess 2008b Blomberg and Rosendorff 2006 Ehrlich and Liu 2002*	Blomberg and Hess 2008a& Bravo and Dias 2006*#
	Inverse-U		Lai 2007	Freytag et al 2011#
	U-effect	Blomberg and Hess 2008a&		
	Not Significant	Campos and Gassebner 2009 Dreher and Fischer 2010 Kurrild-Klitgaard et al 2006 Piazza 2006	Krueger and Laitin 2008 Krueger and Maleckova 2003*	Abadie 2006# Goldstein 2005#
Prospects (growth)	Indirect	Blomberg et al. 2004		Kis-Katos et al. 2011&
	Not Significant	Drakos and Gofas 2006 Feldmann and Perala 2004* Kurrild-Klitgaard et al 2006 Piazza 2006		Skjolberg and Nordas 2007*
*Regional or case study #No differentiation between domestic and transnational terrorism, authors placed in closest category &Tested both types of terrorism but the domestic data was very limited				

**Table 3.1 Economic determinants in terrorism literature**

## Political Determinants of Terrorism

Political explanations posit the state not only matters but trumps alternative determinants. Governments are not mere bystanders reacting to capricious influences. They shape the "meanings and methods of politics for all groups and classes in society" (Skocpol 1985, 28). Political explanations of terrorism ultimately relate to regime type or its attributes. Research typically categorizes regimes into one of three types - democracies, anocracies, and autocracies. Democracies are liberal regimes with elections and the rule of law. Anocracies are hybrid regimes with characteristics of both

autocracies and democracies. Autocracies feature centralized power, weak respect for individual liberties, and ineffective political opposition. For practical purposes, democracy and autocracy can be thought of as flip sides of the same coin. To argue democracy attracts terrorism implies autocracy repels it and vice versa.

Overall, regime literature is inconclusive and, similar to economic explanations, primarily tested with transnational terrorist events. There is an element of conventional wisdom. Autocracy is believed to be indirectly related to victimization. Democratic regimes, on the other hand, invite attack. A common view is that autocracies are also attacked more often than democracies, but the body of empirical research is small.

### *Democracy*

Many argue democratic states are a receptive, if unwilling, terrorist playground.<sup>41</sup> There are two explanations for why democracies suffer terrorism. They may be termed the strategic school and the frustration school. A third explanation, the access school, argues differently. It considers democracy an inoculant against terrorism.

In the strategic explanation, democracy reduces the cost of engaging in terrorist activities (Eyerman 1998). Civil liberties, such as the freedom of movement and association, lower the risk to terrorists. Political freedoms increase victimization (Basuchoudhary and Shughart 2010, Dreher and Fischer 2010). Democracies reward terrorists with publicity for their cause (Crenshaw 2001, Enders and Sandler 2006, Hoffman 2006, Jenkins 1974, Podhoretz 2007). Media attention can discredit governments, enhance the perceived power of terrorists, generate fear, and bring publicity and sympathy.

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<sup>41</sup> And therefore autocracies are not.

Democracies constrain security force tactics, have transparent and strict rules of evidence, and provide due process for defendants. Government constraints increase the incidence of terror (Li 2005, Piazza 2008). It is easier for groups to communicate, organize, resist interrogation, and travel (Schmid 1992). Terrorists exploit privileged communications and professional advice from sympathetic lawyers, clergy, and physicians (Grathwohl and Reagan 1976).

The frustration school emphasizes the unpopularity and futility of radical politics in democratic regimes (Crenshaw 1981, Koopmans 1996, Ross 1993, Sambanis 2008). Assembling majority coalitions of voters drives mainstream politics toward the center and away from the maximalist requirements of ideologues. Terrorists are true believers exasperated by their inability to convince those on whose behalf they claim to act (Euben 1997, Harris 2004, Hoffman 2006). Both the strategic and frustration explanations would expect democracy to be directly related to being the target and source of terrorism.

Taking a different approach, the access explanation disputes democracies enable terrorism. Democracy allows for political organizing and competition. They provide opportunity for expression and unhindered pursuit of political goals. Interest groups freely organize and advocate with no need to resort to violent tactics. Populations with legal means for change exercise them, thereby depressing terrorism (Abadie 2006, Krueger and Laitin 2008, Krueger and Maleckova 2003, Kurrild-Klitgaard, et al. 2006, Li 2005). Terrorists inevitably use gratuitous violence to destroy a sympathetic target. This creates a backlash effect among democratic populations and seals the demise of groups using such tactics (Gurr 1998, 102, 2003, 213). Terrorism, in this view, originates from

political exclusion. The access school predicts democracy is indirectly related to terrorist targeting and origin.

The United States serves as an example of a democracy victimized by domestic terrorism. A wide array of groups advocating disparate ideologies has operated within its borders and territories. Violence has been used by Marxist, anarchist, Puerto Rican separatist, neo-Nazi, environmental, animal rights, anti-abortion and other special cause extremists in an effort to change policies or replace the government. The United States' experience with terrorism is plausibly explained through the strategic, frustration, or access schools.

### The Strategic Explanation

American police powers are restrained and an independent judiciary enforces the rule of law. Some domestic terrorists, such as Timothy McVeigh or Weather Underground members, have skillfully exploited the protections of the legal system and unrestricted travel (Fishman and Lebovich 2011, Grathwohl and Reagan 1976, Michel and Herbeck 2001). Since 2001, the government has felt compelled to keep transnational terrorists offshore at least in part to avoid the restraints of the justice system (Graham and McCain 2009). On the other the hand, the United States has effective law enforcement and intelligence organizations and has enjoyed considerable prosecutorial success. While suffering from terrorism, the level of violence is arguably in check. Terrorist groups are actively violent for relatively short time periods.

### The Frustration Explanation

Despite the ease of political organizing, only two parties dominate the government. The ideological differences between the two parties are real but not large. People with



strong but minority beliefs may see little hope their agenda will be enacted. Extremist organizations have only the remotest of chances to win power through open elections. In frustration, they turn to violence. For example, the beliefs of Puerto Rican Marxist/separatist groups such as the Armed Forces of National Liberation (FALN) or Boricua Popular Army are not widespread. Puerto Rico held status plebiscites in 1967, 1993, and 1998.<sup>42</sup> The high water mark of the independence vote was 4.4% in 1993 (Garrett 2011, 32).

### The Access Explanation

The United States is often considered the first modern democracy (e.g. Huntington 1991). Freedom of speech, assembly, expression, and political organization are widely practiced. Political representatives compete for office in open and fair elections on a regular basis. By global standards, significant social change is not only possible but common. For example, civil rights progress has been steady, if intermittent, since the end of the Civil War and slavery in the 1860s. Women's suffrage was granted in 1920 and an African-American president was elected in 2008, less than 150 years after the end of slavery. Political organizing can achieve substantive results, influencing the cost-benefit calculations of those who may resort to terrorism.

### Democracy Findings from Literature

As a regime type, the weight of empirical research suggests democracy is directly related to terrorism. Democracy is correlated with increased targeting by transnational terrorists (Blomberg and Hess 2008a, Blomberg, et al. 2004, Drakos and Gofas 2006, Dreher and Fischer 2010, Enders and Sandler 2006, Koch and Cranmer 2007, Li 2005, Li

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<sup>42</sup> Another is scheduled for November 2012.

and Schaub 2004, Pape 2003, Piazza 2008).<sup>43</sup> There is somewhat less research finding transnational terrorists originate from democracies (Eubank and Weinberg 1994, Lai 2007). Domestically, democracy is associated with more terrorism (Koopmans 1996, Sambanis 2008, Skjolberg and Nordas 2007, Young and Dugan 2011).

Others argue the evidence is in the opposite direction. Democratic regimes are victimized less by transnational terrorists (Eyerman 1998, Krueger and Laitin 2008, Kurrild-Klitgaard, et al. 2006, Li 2005)<sup>44</sup> They are also less likely to spawn transnational terrorists (Basuchoudhary and Shughart 2010, Blomberg and Hess 2008b, Blomberg and Rosendorff 2006, Kurrild-Klitgaard, et al. 2006). Democracy is indirectly associated with domestic terrorism (Abadie 2006, Goldstein 2005).

### *Anocracy*

Some argue mixed or hybrid regimes - anocracies - spawn political violence (Ellingsen and Gleditsch 1997, Eyerman 1998, Hegre, et al. 2001, Lai 2007, Rupesinghe 1992). Anocracies have neither the democratic norms of peaceful political change nor the systematic security apparatus of autocracy. Anocracy breeds terrorism for primarily one reason - opportunity exists. Mixed regimes are often weak transitional governments where political outcomes are fluid and in dispute. Huntington (1968) viewed underdeveloped political institutions coupled with the mobilization of new groups and rapid social change within the state as the cause of political violence. Inchoate political

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<sup>43</sup> Li (2005) did not test democracy as a regime type but disaggregated it into government constraints and civil liberties. He found government constraints increased terrorism while civil liberties decreased it. I interpreted both as symptomatic of democracy and somewhat inseparable.

<sup>44</sup> Eyerman (1998) found new democracies increased victimization while established democracy decreased it. I interpreted new democracy as anocracy. Li (2005) did not test democracy as a regime type but disaggregated it into government constraints and civil liberties. He found government constraints increased terrorism while civil liberties decreased it. I interpreted both as symptomatic of democracy and somewhat inseparable.

environments give terrorist and other antisystem leaders a chance to succeed (Hegre, et al. 2001, Jenkins and Schock 1992, Lai 2007). Weak militaries and internal security forces, characteristic of anocracy, allow rebels to flourish (Bueno de Mesquita 2005b, Gurr 1968, 1970, Piazza 2008). Anocracies have negligible social welfare services and government seems distant, irrelevant, or corrupt. This gives opportunistic terrorist leaders a ready-made recruiting pool of disaffected people.

Algeria could be an example of the effects of anocracy. The state was strongly autocratic after achieving independence from France in 1962. Polity measures indicate Algeria remained an autocracy through 1988. There are 3 recorded events of domestic terrorism over 19 years between 1970 and 1988. However, state controls weakened in 1989, and Algeria became an anocracy and remained so through the end of the research period in 2010. The political system was only weakly institutionalized and a struggle for legitimacy ensued. Over the 22 years of anocracy, groups such as the Islamic Salvation Front, Armed Islamic Group, and the Salafist Group for Preaching and Fighting accounted for 1496 attacks.

The anocratic explanation predicts weak hybrid regimes are model targets and recruiting grounds. Anocracies are more frequent victims of transnational terrorism (Eyerman 1998, Feldmann and Perala 2004, Kurrild-Klitgaard, et al. 2006, Piazza 2008).<sup>45</sup> Anocracies were also sources of transnational terrorists (Lai 2007, Piazza 2008). Anocracies are prone to domestic terrorism (Abadie 2006, Goldstein 2005).

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<sup>45</sup> Eyerman (1998) found new democracies increased victimization while established democracy decreased it. I interpreted new democracy as anocracy.

## *Autocracy*

Conventional wisdom credits autocracy with suppressing terrorism. There is one primary reason for this. Autocracies have excellent security (Pluchinsky 1998). The minimal restraints on internal security forces and heavy press censorship combine to suppress terrorism. A lack of civil rights and liberties inhibits terrorist attacks (Abadie 2006, Goldstein 2005, Kurrild-Klitgaard, et al. 2006). Terrorists need an environment where they can survive. Autocracies restrict or prohibit independent political organizing. Strong autocracies, such as the Soviet Union, may even impose internal travel restrictions. Neighborhood and workplace informants increase the risk of dissent. People are effectively isolated and eventually resign themselves to the status quo. Violent resistance will only bring swift and brutal retaliation.

Even were terrorist attacks to occur, the controlled press is unlikely to report it (Drakos and Gofas 2006, Eubank and Weinberg 1994, Eyerman 1998, Li and Schaub 2004, Sandler 1995, Schmid 1992) and thereby obstruct any demonstration effect. Without oxygen, so to speak, the single spark will not ignite a prairie fire.<sup>46</sup> Autocracies decrease effective, if not latent, political opposition. The security explanation predicts autocracy is indirectly related to victimization and sourcing of terrorists.

North Korea is a probable example of the security effect. The GTD records a single domestic terrorist attack between 1970 and 2010. Apparently, there was an armed assault on Kim Jong Il supporters in Pyongyang on December 13, 1994 (LaFree and Dugan 2011a, 199412130005). The incidence of terrorist violence is remarkably low for a

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<sup>46</sup> This expression, often attributed to Mao tse-Tung, was adopted by the Weather Underground (Dohrn, et al. 1974). It implies mass revolution simply needs an example to ignite it. The belief is popular among terrorists.

country of 24 million people, widespread poverty, and occasional bouts of mass starvation.

Others argue autocracy inspires terrorism. The reasoning follows the same logic as the democratic access school. Autocracies control political outcomes, inspiring the resort to illegal political violence (Behr and Berger 2009, Bravo and Dias 2006, Engene 1998, Krueger and Maleckova 2003, Skjolberg and Nordas 2007). Violence becomes the sole political alternative. People eventually rebel against personal restrictions. The lack of civil rights increases terrorism (Krueger and Laitin 2008). Speculatively, the internet age may hasten the overthrow of autocracies. Political dissidents may find it easier to organize and communicate through social media or virtual links. Recent “Arab Spring” events in Egypt, Libya, and Syria, to include terrorism, could be evidence of this. The “lack of access” explanation expects autocracy to be directly related to victimization by and recruitment of terrorists.

Still others argue autocracies generate terrorists but their attacks manifest transnationally (Piazza 2008). Repression simply changes the venue for the attack away from autocracy. Although this line of reasoning is an intriguing theory for causal differences between transnational and domestic terrorism, it is beyond the scope of this research.

The empirical evidence inconclusively favors conventional wisdom. Autocracies are less victimized by transnational terrorists (Kurrild-Klitgaard, et al. 2006). Neither are they the source of transnational terrorists (Lai 2007). Autocracies are indirectly related to domestic terrorism (Abadie 2006, Goldstein 2005, Pluchinsky 1998). Other research indicates autocracies are the source of transnational terrorists (Krueger and Laitin 2008,

Krueger and Maleckova 2003, Piazza 2008).<sup>47</sup> Domestically, Bravo and Dias (2006) found autocracy directly related to terrorism.

### *Regimes as Inconsequential*

Finally, some argue regime type does not matter. Political participation is not significant (Piazza 2008). Political rights have no effect (Feldman and Ruffle 2008, Tavares 2004). Political determinants simply do not explain terrorism. Alternatively, regime type is not a sufficient explanation. Interaction effects are required. For example, economic or systemic effects are necessary for political factors to matter. Empirical evidence indicates regimes type is irrelevant to targeting by transnational (Tavares 2004, Wade and Reiter 2007) and domestic (Cox, et al. 2009, Feldman and Ruffle 2008) terrorists.

Table 3.2 below summarizes political regime effects gleaned from literature.<sup>48</sup> The transnational and domestic literatures are separated. Transnational terrorism is further subdivided into target and source research.

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<sup>47</sup> Krueger and Laitin (2008) also found democracies were more likely to be victimized. This research is indicative of Piazza's (2008) argument. Autocracies breed terrorists that commit transnational, not domestic, terrorism.

<sup>48</sup> Some license was necessary in interpretation. For example, research may have used political rights as an independent variable which I interpreted as autocracy, anocracy, or democracy.

Independent Variable	Relationship	Transnational Terrorism		Domestic Terrorism
		Target	Source	
Autocracy	Direct		Krueger and Laitin 2008 Krueger and Maleckova 2003*	Bravo and Dias 2006*#
	Indirect	Kurrild-Klitgaard et al 2006	Lai 2007	Abadie 2006# Goldstein 2005# Pluchinsky 1998*
Anocracy	Direct	Eyerman 1998** Feldmann and Perala 2004* Kurrild-Klitgaard et al 2006 Piazza 2008	Lai 2007 Piazza 2008	Abadie 2006# Goldstein 2005#
Democracy	Direct	Blomberg and Hess 2008a& Blomberg et al. 2004 Drakos and Gofas 2006 Dreher and Fischer 2010 Enders and Sandler 2006 Koch and Cranmer 2007 Li 2005@ Li and Schaub 2004 Pape 2003 Piazza 2008	Eubank and Weinberg 1994 Lai 2007	Koopmans 1996* Sambanis 2008& Skjolberg and Nordas 2007* Young and Dugan 2011
	Indirect	Eyerman 1998** Li 2005@ Krueger and Laitin 2008 Kurrild-Klitgaard et al 2006	Kurrild-Klitgaard et al 2006 Basuchoudhary and Shughart 2010 Blomberg and Hess 2008b Blomberg and Rosendorff 2006	Abadie 2006# Goldstein 2005#
Regime Irrelevant		Wade and Reiter 2007 Tavares 2004#		Cox et al. 2009* Feldman and Ruffie#
*Regional or case study #No differentiation between domestic and transnational terrorism, authors placed in closest category @Li 2005 found government constraints increased terrorism while civil liberties decreased it; I interpreted both as symptomatic of democracy &Tested both types of terrorism but the domestic data was very limited **Eyerman found new democracy increased victimization while established democracy decreased it; new democracy interpreted as anocracy				

**Table 3.2 Political determinants in terrorism literature**

## Systemic Determinants of Terrorism

Systemic configuration theorists emphasize the direct and indirect effects of global power distributions. Worldwide travel, trade, communication, and cooperation relationships systemically influence political outcomes independently from any particular state. The intersection of power and geography matter (Flint 2003, Wallerstein 1998). States are not cocoons isolated from the outside world. Regional disparities in the distribution of wealth, legitimacy, or power motivate domestic attacks. Through systemic demonstration effects, transnational and domestic terrorism spreads from prominent

states (Midlarsky, et al. 1980)<sup>49</sup> or prominent terrorist groups (Heyman and Mickolus 1980).

Systemic power distributions are labeled in terms of poles. Unipolarity refers to a single dominant or hegemonic state in the world.<sup>50</sup> Bipolarity refers to a condition of two dominant states. Multipolarity means there are three or more powerful world actors. Polarity is often described in terms of military power or economic and military power in combination. For this research, the world was bipolar until the demise of the Soviet Union. I considered the United States as hegemonic from the collapse of the Soviet Union through the end of the research period. Multipolarity is not addressed. For the purposes of this study, bipolarity and unipolarity are inverse conditions. To argue bipolarity is directly related to terrorism is equivalent to arguing unipolarity is indirectly related to terrorism.

Systemic configuration literature divides into three camps. Two of them disagree on the enabling or dissuading characteristics of bipolarity and unipolarity. The third discounts the impact of power distribution on the incidence of terrorism. A consensus has yet to emerge on the relationship between systemic effects and terrorism of any description. Findings are sparse and evenly split.

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<sup>49</sup> Midlarsky et al.'s (1980) *Why Violence Spreads: The Contagion of International Terrorism* described both transnational and domestic terrorism.

<sup>50</sup> Hegemony and polarity can be measured a number of ways. In the context of this research, hegemony refers solely to military dominance and is synonymous with unipolarity. World system theorists such as Bergesen, Lizardo, Modelski, Flint, Sobek, and Braithwaite have a slightly different paradigm than traditional Cold War rational actor theorists. They are concerned with the dominant power - the hegemon. A simplifying assumption was made. Bipolarity represented an era of less hegemony. As the world transitioned from bipolarity to unipolarity, hegemony increased.



### *Bipolar Competition*

Bipolar systems, such as between the Soviet Union and the United States during the Cold War, invite attacks by proxies in semi-controlled competition between states (Jenkins 1974, Kegley 1990, Li 2005, Sterling 1981, Wilkinson 1987). Zero sum competition is the reason bipolarity affects domestic terrorism. The two global powers seek power advantages. Each side supports political causes inimical to the interests of the other. The struggle is global. Any opportunity to damage the rival bloc is pursued. Nuclear or conventional warfare are too costly. However, insurgent violence is an attractive alternative. Terrorist groups are useful clients for inflicting costs. They are relatively inexpensive and have an added narrative benefit. They are the enemy's own citizens.

Support to terrorists may be direct or virtual. Foreign powers can support domestic terrorists with weapons, safe havens, false identification, or intelligence. In addition to active support, people may become vicariously inspired through solidarity with rival ideological worldviews. The geographic distance between the terrorist and the issue is of little import. For example, the rise of domestic terrorism across the globe has been blamed on disaffection caused by the Vietnam War (Brynjar and Skjolberg 2005, 65-66, Crenshaw 2001, 425, Cronin 2003, 37, Rapoport 2004, 56, Wasmund 1986, 221), Soviet meddling during the Cold War (Cronin 2003, 37, Sterling 1981, 13), or United States meddling in Latin America (Herman 1987).

Western Europe and the Middle East serve as examples of bipolar (Cold War) effects. Western Europe was heavily affected by domestic terrorism. Western Europe had power and influence. As a whole, it was not susceptible to guerrilla warfare. Therefore,

terrorism represented the best method for inflicting damage to Western Europe and the Western bloc. Inspection of the data suggests terrorism was particularly rampant during the 1970s, 1980s, and into the 1990s. During the Cold War, European left wing terrorists enjoyed safe haven and other forms of support from East Germany and Palestinians groups located in Soviet client states (Shughart 2006, Sterling 1981). Indirect ideological inspiration may have played a role as well. If all things Soviet were not necessarily embraced by European leftist groups, all things Marxist were (Hoffman 2006, Rapoport 2001, 2004).

The Middle East is another example. It was and is a consistent source of political and military tension and terrorism. During the Cold War each bloc militarily supported their allied states. Both proxy and actual war occurred between rival client states. Even after the expulsion of Soviet advisors from Egypt in 1972 and the Egyptian-Israeli Camp David accords in 1979, most Arab states hosting terrorist groups were aligned with the Soviet Union.

Because of the costliness of conventional war, the risk of unintended consequences introduced an element of restraint. Regular warfare could escalate and involve the superpowers against their will. In the worst case, it could even lead to the use of weapons of mass destruction by the superpowers or their regional allies.<sup>51</sup> Supporting indirect war through terrorism could be tempting. Several Arab states were accused of supporting domestic Israeli groups. Israel was accused of supporting Christian extremists in Lebanon.

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<sup>51</sup> Israel is commonly thought to possess nuclear weapons. In the Cold War era, the Soviet allies Syria, Libya, and Iraq were widely believed to possess chemical weapons.

Zero sum explanations predict terrorism is directly related to the incidence of terrorism and the production of terrorists. A converse logic applies after the Soviet Union, and bipolar system, imploded and a unipolar world emerged. Domestic terrorism should lessen in the aftermath.

Bipolarity is directly related to victimization by transnational terrorists (Bergesen and Lizardo 2002, 2004, 2005, Jenkins 1974, Li 2005, Lizardo 2006). The era was also associated with producing transnational terrorists (Basuchoudhary and Shughart 2010, Jenkins 1974). Regional and case study research indicates bipolarity encouraged domestic terrorism as well (Herman 1987, Shughart 2006).<sup>52</sup>

### *Unipolarity and Hegemony*

The unipolar system created revisionist incentives. It became associated with domestic terrorism for two reasons. The first is a version of "blowback" theory. In this view, the unipolar military position of the United States goads terrorists into attacking. Inherent power and influence make violence toward it inevitable regardless of any policies it may pursue (Crenshaw 2001, Pillar 2006, Volgy, et al. 1997). Dominant powers represent an obstacle to altering the status quo or are simply more available to attack (Carr 1997, Neumayer and Plumper 2011, Sobek and Braithwaite 2005).

Although this explanation is often associated with transnational terrorism, it is not necessarily limited to that. Terrorists provoked to blowback violence need not attack the United States directly. Anger and hostility toward United States' military and market power is directed at perceived local clients (Lizardo 2006). Attacking targets in one's

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<sup>52</sup> When it examined subnational actors, Herman's (1987) *U.S. Sponsorship of International Terrorism: An Overview* concerned primarily domestic terrorism.

own country is easily rationalized as analogous to attacking the United States. If anything, proximate targets are more convenient.

For example, several Christian targets were attacked by Pakistani militants beginning in 2002 and attributed as a reaction to Pakistan's support of the United States' Global War on Terror.<sup>53</sup> The targets had no plausible connection to the United States or its military efforts. Any linkage was purely symbolic but apparently viewed as real by the perpetrators.

The second reason unipolarity matters is it sets free pent up centrifugal forces. In other words, identities atomize. Cold War systemic rivalry suppressed regime type effects. Domestic tensions were suppressed and of secondary importance. The unipolar system and the globalization it engenders unleashed identity aspirations (Basuchoudhary and Shughart 2010, Kaldor 1999). For example, domestic terrorism was virtually unknown in the Russian Republics of Ingushetia, Dagestan, and Chechnya before the end of the Cold War.

Both blowback and unleashed identity explanations expect unipolarity encourages terrorist activity and sourcing. Victimization by transnational terrorists is associated with unipolarity (Modelski 1987, Pillar 2006, Sobek and Braithwaite 2005, Volgy, et al. 1997). Domestic terrorism is also associated with unipolarity (Kaldor 1999).

### *Distribution Irrelevant*

Lastly, some scholars argue systemic configuration has little impact on terrorism. Competition or lack thereof between the United States and the Soviet Union is irrelevant. Although unsettled political antagonisms invite foreign intervention, political struggles

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<sup>53</sup> See ("Gunmen attack Pakistan school" 2002). The GTD contains several more instances of Christian targets being attacked in Pakistan since 2002.

are local phenomenon. By a similar logic, neither does a unipolar world impact terrorism. This theory predicts no correlation between terrorism and the global distribution of power. Heyman and Mickolus (1980) found no relationship between systemic polarity and targeting by transnational terrorists. Neither was domestic terrorism connected to the Cold War or post-Cold War eras (Feldmann and Perala 2004, Young and Dugan 2011).

Table 3.3 below summarizes the effects of systemic determinants gleaned from literature. The transnational and domestic literatures are separated. Transnational literature is further subdivided into target and source research.

Independent Variable	Relationship	Transnational Terrorism		Domestic Terrorism
		Target	Source	
Bipolarity	Direct	Bergesen and Lizardo 2002, 2004, 2005 Jenkins 1974* Li 2005 Lizardo 2006	Jenkins 1974* Basuchoudhary and Shughart 2010	Herman 1987* Shughart 2006*
Unipolarity	Direct	Modelski 1987 Pillar 2006 Sobek and Braithwaite 2005 Volgy et al. 1997		Kaldor 1999*
Distribution Irrelevant		Heyman and Mickolus 1980		Feldmann and Perala 2004* Young and Dugan 2011
*Regional or case study				

**Table 3.3 Systemic determinants in terrorism literature**

## Social Determinants of Terrorism

Social determinants refer to identity - linguistic, ethnic, or religious. These identities serve as mechanisms for defining who an individual is and what primary social group they feel attached to. Social explanation is frequently tested in empirical research but not often of explanatory value. This is puzzling given the prevalence of identity violence since World War II and its seeming acceleration in the wake of the Soviet and Yugoslav collapses.

Identity may be unrelated to domestic terrorism. Alternatively, its explanatory value may be masked by empirically testing with the transnational data most used in literature. This research seeks to determine the relationship of social determinants to domestic terrorism.

Identity is a primary cause of terrorism (e.g. Kaldor 1999, 7-8, Rapoport 2004, 61, Ross 1993). Social distance justifies callous violence because weaker groups view it as a means of control against perceived dominant social groups (Black 2004, Senechal de la Roche 1996). Kaufmann (1996, 141) argued ethnic, linguistic, and religious identities<sup>54</sup> are "hard." They are difficult or even impossible to change. When identity corresponds to a nation-state, it follows the state has an inherent element of legitimacy.<sup>55</sup> When nation does not coincide with the state, hard identities serve as built-in elements for political struggle, separatism, or irredentism.<sup>56</sup> Membership in a terrorist group fulfills the need for social solidarity and relationships (Abrahms 2008, 101, Denoeux and Carter 2009, 79, Stern 2003, 4-5).

Before looking at the specifics of any particular type of identity, the common view is that diverse populations are more susceptible to some forms of conflict than homogenous populations. There is one primary theoretical reason the distribution of groups is related to terrorism. In difficult times, people are posited to place loyalty to their social identity over their loyalty to the larger nation-state. Identity defines the sides in subnational conflict. Loyalty is the common "macro-reason," so to speak, that diversity matters. It is a tool for terrorist leaders to foment hatred of other groups,

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<sup>54</sup> Kaufmann lumped ethnicity, language, and religion under the term "ethnic identities."

<sup>55</sup> Nation here is defined as people sharing a common language, culture, ethnicity, religion, or history.

<sup>56</sup> There is academic debate over which comes first, state or national identity. Without precluding coterminous processes, the research assumes identity precedes the state.

sharpen differences, and achieve solidarity. Relationships between different identity types and their usefulness for terrorism are explored below.

The diversity argument implies the more identity groups there are, the higher the probability of domestic terrorism. Population diversity will be measured through the concept of fractionalization. Fractionalization is the probability two random people belong to different groups (Alesina, et al. 2003, Desmet, et al. 2012, Montalvo and Reynal-Querol 2005, Skjolberg and Nordas 2007). Beginning with linguistic identity, I explore plausible relationships between social determinants and domestic terrorism.

### *Linguistic Identity*

People interpret political realities and social situations in terms of their first language. Vocabulary, definitions, and connotative meaning are influenced by cultural norms. Political stresses reinforce and exaggerate entrenched interpretations. Under these conditions, linguistic differences are useful for terrorist groups. There are four reasons language matters.

First, people are expected to communicate to those who speak the same language. This increases the probability of finding likeminded fellow travelers with similar political interpretations. Second, in tense polities language communities of any size are likely to reside in close proximity. This limits cross-language communication and reinforces identity based narratives. Next, language offers a degree of communication security. Learning an additional language is difficult, cementing most people in their primary language. Suspicion is a byproduct of the lack of interlinguistic understanding. In conditions of insecurity, hostile intentions are easily ascribed by default. Lastly, many view language as something to be protected in its own right. Speculatively, dogmatic

linguistic survivalism is in inverse proportion to governmental or cultural pressure to suppress it. Kurdish separatism in Turkey serves as an example of a terror campaign stressing linguistic identity.

Kurdish terrorists prominently expressed linguistic grievances among the alleged offenses of the Turkish government (Marcus 2007). Kurdistan Workers Party (PKK) leader Abdullah Ocalan observed, “who could blame us if, in this state of horrific imbalance of forces, in order to avoid extermination, we were forced to defend ourselves, our most legitimate rights, our [linguistic] identity and culture?” (Ocalan 1999).

Canada’s French speaking separatists are another example. The Quebec Liberation Front skillfully exploited fears of Anglophone encroachment. This excerpt from their manifesto illustrates the importance of linguistic identity.

Many Quebecers have realized the truth and are ready to take action. In the coming year Bourassa [Premier of Quebec] will get what is coming to him: 100,000 revolutionary workers, armed and organized!... We have had our fill of the Ottawa representative to Quebec who wants to give our tax money to the Anglophone bosses to “encourage” them to speak French, my dear, to negotiate in French. Repeat after me: “Cheap labor is main d’oeuvre à bon marché in French.”<sup>57</sup>

Although there are relatively few studies, the conventional wisdom is that linguistic fractionalization is directly related to states being the target and source of terrorists. Linguistic fractionalization is directly related to being the target of transnational terrorism (Blomberg and Hess 2008a, Kurrild-Klitgaard, et al. 2006, Piazza 2008).<sup>58</sup> It is also conducive to generating transnational terrorists (Piazza 2008).<sup>59</sup> On the domestic side, linguistic fractionalization was found to be related to terrorism (Abadie

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<sup>57</sup> Quoted from Belanger (2007, 4, 7-8)

<sup>58</sup> Piazza (2008) used a homogeneity concept measuring the largest identity group only instead of the more common comparison of all groups. I considered homogeneity the inverse of fractionalization.

<sup>59</sup> Piazza (2008) used a homogeneity concept measuring the largest identity group only instead of the more common comparison of all groups. I considered homogeneity the inverse of fractionalization.



2006, Blomberg and Hess 2008a, Tavares 2004). In a disconfirming Asian and African regional case study, Cox, et al. (2009) found linguistic diversity reduced domestic terrorism.<sup>60</sup> Others question linguistic differences as causal factors. Two studies did not detect any relevance for linguistic fractionalization. Dreher and Fischer (2010) found it not significant for being targeted by transnational terrorists. Kurrild-Klitgaard, et al. (2006) found it did not matter for the state of origin of transnational terrorists.

### *Ethnic Identity*

The logic relating ethnic social tensions to increased terrorism is not unlike that of linguistic identity. Ethnicities are more likely to communicate to those of similar ethnicity. Physical proximity or social occasions are plausibly shaped by ethnic ties. Cultural norms are expected to be influenced by ethnicity. Ethnic preservation may be a political goal in its own right. Right wing groups in particular are often concerned with maintaining favorable ethnic, or racial, domination and use force to protect it (Cronin 2003, 40).

On the other hand, ethnic identity has subtle differences from linguistic identity that could make it less useful for terrorism. Ethnic diversity does not require a discrete language separate from other ethnicities. Absent language differences, ethnic diversity could reflect tolerant, liberal societies where the most difficult political issues have been resolved. Ethnicity is more mutable than language. It has a better probability of mutating during the lifetime of the individual. Marriages or employment could separate people from their birth ethnicity. Assimilation discounts the value of ethnicity, making it little more than a curiosity for food, dress, music, or dance customs. “Ethnic” solidarity

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<sup>60</sup> Cox et al. also found linguistic polarization increased terrorism. Polarization measures the relative size of the two largest groups (Alesina, et al. 2003, Fish, et al. 2010, Montalvo and Reynal-Querol 2005).

appeals of everyday speech may be merely masquerading linguistic affinities. In popular speech, the two terms are frequently used interchangeably. While acknowledging their narrative value, Crenshaw (1981, 396) argued ethnic identities were ultimately unimportant structural conditions.

Armenian terrorism is a plausible example of ethnically influenced terrorism. The target-victim nexus was driven by historical events - the deportation of ethnic Armenians from the Ottoman Empire during and shortly after the First World War. Hyland (1991, 1) found Armenian terrorism was "at its heart, ethnic violence." Other case studies reinforce the salience of ethnic social tensions. For example, Pluchinsky (1998, 125) found the "nature of political terrorism in the FSU [Former Soviet Union] primarily ethnonationalist." Nonetheless, Fish and Koenig (2008) concluded ethnicity did not explain recent terroristic violence in Kenya.

Ethnic determinants were examined more often in domestic than transnational literature.<sup>61</sup> Conventional wisdom is ethnic fractionalization is directly related to terrorism. Basuchoudhary and Shughart (2010) found it increased the likelihood a state would be a source of transnational terrorists.<sup>62</sup> Ethnic fractionalization did appear directly related to domestic terrorism (Engene 2007, Koopmans 1996, Piazza 2006, Pluchinsky 1998, Skjolberg and Nordas 2007).<sup>63</sup>

There are a substantial number of findings that dispute the ethnic explanation. Kurrild-Klitgaard, Justesen, and Klemmensen (2006) found ethnic fractionalization decreased targeting by transnational terrorists. The same indirect relationship held for

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<sup>61</sup> The domestic studies are primarily regional case studies. Refer to Table 3.4.

<sup>62</sup> Basuchoudhary and Shughart (2010) used an ethnic tensions variable sourced from the *International Country Risk Guide*.

<sup>63</sup> Piazza (2006) used an ethno-religious diversity variable that was the product of the two percentages. It was unrelated to the quantity of terrorism but directly related to its deadliness.

domestic terrorism (Bravo and Dias 2006, Tavares 2004). Ethnic diversity was not significantly related to victimization by transnational terrorism (Drakos and Gofas 2006, Dreher and Fischer 2010).<sup>64</sup>

### *Religious Identity*

Terrorism is frequently justified with religious narratives. The contemporary “wave” of terrorism is represented by the Hindu, Jewish, and in particular Islamic extremism that supplanted the antisystem fervor of the Vietnam War era (Rapoport 1990, 2004). Christian extremism also has pockets of popularity. For example, the Lord’s Resistance Army in Uganda claims divine inspiration. The Buddhist-mystic cult of Aum Shinrikyo executed the most successful weapon of mass destruction attack to date. They released sarin gas in a Tokyo subway, killing 12 and wounding 5500 (LaFree and Dugan 2011a, 199503200014). Yet religiously based empires and theocracies are largely relics of the past.

Religious identity may not be as conducive to terrorism as linguistic or ethnic ones. The reasons for this are threefold. First, if identity terrorists want power, they are likely to think in terms of the familiar framework of secular states. Irredentism, separatism, autonomy, or spoils are more secular than eternal interests. Globally, people live in secular states often named to correspond with an ethnicity, language, or both. Rarely are states named to coincide with a religion. As of 2010, only seven of 194 states in the international system referred to a religion in their official name. Terrorists with millenarian religious beliefs target widely beyond their state borders (Barkun 1995,

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<sup>64</sup> Drakos and Gofas (2006) measured minorities at risk, a concept related to the distribution of social groups.

Hoffman 2006, Piazza 2009, Rapoport 1984, 2004). They are unlikely to be prominent in domestic terrorism.

Second, religion is no longer as salient for many people as it was in the past. There are 40 states with official religions. Among them are 24 with some form of Islam, 13 are versions of Christianity, 2 are Buddhist, and 1 is Jewish. A closer look reveals 11 of the 13 Christian states are in Europe. The role of religion in Europe is instructive. European church attendance is greatly diminished. Belief in God hovers around 50%.<sup>65</sup> Religious tension explanations are not necessarily ruled out for European terrorism. Northern Ireland may be an area where religious identity matters more than either linguistics or ethnicity. Religious tensions also exist between Islamic minorities and authorities in the United Kingdom, France, and other European states. Notwithstanding these possibilities, religious tensions are not seemingly major causes of European domestic terrorism.

Third, religion is fairly easy to change in most parts of the world. Religious freedom is widespread although certainly not universal. Religious intermarriage and conversions are possible. The opposite may be true in many Islamic countries. Religious fervency is growing. Proselytizing and religious freedom are suppressed. Terrorist groups make political appeals in the name of religion. In the Middle East, 16 of 20 states have official religions - 15 Islamic and 1 Jewish. Religious terrorism makes headlines in Egypt, Iran, Iraq, Israel, Lebanon, Pakistan, and India. Still, on a global level religion appears increasingly fungible.

If religious identity does not matter, it is not expected to be significantly related to domestic terrorism. To the degree there is a conventional wisdom, it supports this predicted relationship. Given the prevalence of transnational terrorism in the name of

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<sup>65</sup> ("Special Eurobarometer 225: Social values, Science and Technology" 2005).

religion since the end of the Cold War (Ali 2002, Rapoport 1990, 1998, 2001, 2004), the relationship between religious fractionalization and the sourcing of transnational terrorists may very well be different. However, that is beyond the scope of this research.

Religious fractionalization is directly related to victimization by and the sourcing of transnational terrorists (Piazza 2008).<sup>66</sup> It was also directly related to domestic terrorism (Freitag, et al. 2011, Piazza 2006).<sup>67</sup> Others argue the relationship was indirect. Blomberg and Hess (2008a) found religious fractionalization indirectly related to victimization by transnational terrorists. Blomberg and Hess (2008b) found the same thing for the origin of transnational terrorists. Others found an indirect relationship between religious diversity and domestic terrorism (Blomberg and Hess 2008a, Cox, et al. 2009, Tavares 2004).<sup>68</sup>

The preponderance of research indicates no relationship between religious diversity and terrorism. It is unrelated to targeting by transnational terrorists (Blomberg and Hess 2008b, Drakos and Gofas 2006, Dreher and Fischer 2010, Fish, et al. 2010, Krueger and Laitin 2008, Kurrild-Klitgaard, et al. 2006). Neither is it related to the origin of transnational terrorists (Krueger and Laitin 2008, Krueger and Maleckova 2003, Kurrild-Klitgaard, et al. 2006). Finally, religious tensions did not matter for domestic terrorism (Abadie 2006, Bravo and Dias 2006, Feldman and Ruffle 2008, Sambanis 2008).

Table 3.4 below summarizes social determinant literature. The transnational and domestic literatures are separated. Transnational terrorism is further subdivided into target and source research.

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<sup>66</sup> Piazza (2008) used a homogeneity concept measuring the largest identity group only instead of the more common comparison of all groups. I considered homogeneity the inverse of fractionalization.

<sup>67</sup> Piazza (2006) used an ethno-religious diversity variable that was the product of the two percentages. It was unrelated to the quantity of terrorism but directly related to its deadliness.

<sup>68</sup> Cox et al. (2009) found religious *polarization* increased domestic terrorism.

Independent Variable	Relationship	Transnational Terrorism		Domestic Terrorism
		Target	Source	
Linguistic	Direct	Blomberg and Hess 2008a& Kurrild-Klitgaard et al. 2006 Piazza 2008	Piazza 2008	Abadie 2006# Blomberg and Hess 2008a& Tavares 2004#
	Indirect			Cox et al 2009*
	Not Significant	Dreher and Fischer 2010	Kurrild-Klitgaard et al. 2006	
Ethnic	Direct		Basuchoudhary and Shughart 2010**	Engene 2007* Koopmans 1996* Piazza 2006# Pluchinsky 1998* Skjolberg and Nordas 2007*
	Indirect	Kurrild-Klitgaard et al. 2006		Bravo and Dias 2006*# Tavares 2004#
	Not Significant	Drakos and Gofas 2006 Dreher and Fischer 2010	Kurrild-Klitgaard et al. 2006	Abadie 2006# Fish and Koenig 2008* Sambanis 2008&
Religious	Direct	Piazza 2008	Piazza 2008	Freytag et al 2011# Piazza 2006#
	Indirect	Blomberg and Hess 2008a&	Blomberg and Hess 2008b	Blomberg and Hess 2008a& Cox et al 2009* Tavares 2004#
	Not Significant	Blomberg and Hess 2008b Drakos and Gofas 2006 Dreher and Fischer 2010 Fish et al. 2010* Krueger and Laitin 2008 Kurrild-Klitgaard et al. 2006	Krueger and Laitin 2008 Krueger and Maleckova 2003* Kurrild-Klitgaard et al. 2006	Abadie 2006# Bravo and Dias 2006*# Feldman and Ruffe 2008 Sambanis 2008&

\*Regional or case study  
\*\*Ethnic "tensions"  
#No differentiation between domestic and transnational terrorism, authors placed in closest category  
&Tested both types of terrorism but the domestic data was very limited

**Table 3.4 Social determinants in terrorism literature**

## Summary

Economic, political, systemic, and social determinants are commonly posited as structural conditions conducive to terrorism. Economic explanations are the most popular, followed by political ones. With exception of a few regional studies, empirical research has strongly favored transnational terrorism data. Even though domestic terrorism is far more common, research using transnational data is generally assumed applicable to it.

Research findings have been inconsistent and debated. Conventional wisdom is tentative. Nonetheless, favored explanations exist. Poverty is believed to be directly related to terrorism. Economic growth is not viewed as significant. Autocracy is accepted as indirectly related to terrorism. Anocracy and democracy are both viewed as

conducive to terrorism but no consensus on which is more susceptible. The conventional wisdom of systemic power distributions is unclear. Linguistic fractionalization is associated with more terrorism. Ethnic fractionalization is viewed similarly. Religious diversity is not commonly correlated with the incidence of terrorism. The next step is creating the research design to test the competing hypotheses.

## CHAPTER 4

### RESEARCH DESIGN

It is impossible to predict the time and progress of revolution. It is governed by its own more or less mysterious laws.

- Vladimir Lenin

What is preventing us from making a general call to arms is the fact that the country of Iraq has no mountains in which to seek refuge, or forest in which to hide. Our presence is apparent and our movement is out in the open. Eyes are everywhere.

Abu Musab al-Zarqawi<sup>69</sup>

This chapter outlines the research design used for empirically testing hypotheses on the *causes of domestic terrorism*. I begin with brief observations on the characteristics of the dependent variable - domestic terrorism. Next, I describe the independent variables (IV) and control variables (CV). The IV and CV represent the operationalization of prominent theoretical causal determinants taken from literature. Under each IV and CV, I propose hypotheses of causal relationships based mostly on conventional wisdom. Lastly, I summarize the statistical methodology. The form of the basic model is listed, as well as a more advanced version. Given the event count and skewed nature of the dependent variable, standard ordinary least squares regression was not appropriate. The features of negative binomial and zero inflated negative binomial regression are briefly discussed. Chapter 5 analyzes the results of the empirical tests.

#### **The Dependent Variable**

Acts of terroristic violence are observable. There must be destruction, either of people or valuable property. Without violence, suppressed or dormant terrorist groups

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<sup>69</sup> Al Qaeda in Iraq chief as quoted in al-Zarqawi (2004)



are merely militant advocacy groups. The act can confidently be assumed to be indicative of the existence of the group. The converse, slightly less confidently, is assumed true as well. By necessity, the measurement is indirect. Terrorist acts are measured - not generating terrorists.

The dependent variable is an annual count of total domestic attacks. In its original form, the GTD contained 98,849 events gleaned from all states and territories in the international system between 1970 and 2010.<sup>70</sup> The unit of observation is state-years. As states are the data containers, events in overseas possessions or semiautonomous territories were aggregated with parent states.<sup>71</sup>

GTD 1993 data was unusable. Original Pinkerton Global Intelligence Services (PGIS) records were lost in the transfer to the GTD project, apparently by literally falling off a truck (Enders, et al. 2011, 322). Although 737 events from 1993 are available,<sup>72</sup> the data is truncated, efforts to recreate it exhausted, and its use is not recommended due to serious undercounts (Miller 2011b).

To avoid several years of missing data, 1993 event totals needed to be estimated. For example, the year 1993 could not be used in the model because the data was missing. However, because the model uses a one year lag of the dependent variable, the year 1994 would be unusable as well. To circumvent this problem, Enders, et al. (2011) interpolated 1993 data by considering the ITERATE database and quarterly GTD totals for 1992 and 1994. Gaibullov and Sandler (2011) averaged 1992 and 1994 GTD data. As transnational terrorism is not at issue, nothing is gained by considering ITERATE.

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<sup>70</sup> Unless otherwise noted, all GTD database descriptions refer to the June 2011 version, the latest available as of this writing.

<sup>71</sup> Secessionist national liberation struggles are largely over by this time. This dramatically reduces distortion caused by differences between structural conditions in the metropole and in overseas territories.

<sup>72</sup> This represents approximately 15% of the original 1993 total (Miller 2011a)

Neither are quarterly event counts of interest. Therefore, I followed Gaibulloev and Sandler and averaged 1992 and 1994 event counts to determine 1993 totals. This had no effect on IV or CV - those data are not missing - and avoided the deleterious effects of dropping 1993 from the population.

There is a chance of bias in observations due to resource, press, and other restrictions. Political violence may be underreported in autocracies (Drakos and Gofas 2006, Eubank and Weinberg 1994, Eyerman 1998, Li and Schaub 2004, Sandler 1995, Schmid 1992), under-resourced national media (Eyerman 1998), remote areas (Brockett 1992), or during civil wars (Sambanis 2008). The available data is incomplete but nonetheless useful.

Reporting bias is mitigated by the wide range of United States and foreign sources used to build the database. The GTD codebook (LaFree and Dugan 2011b, 51) listed 21 open source governmental, academic, and commercial sources. PGIS reported the majority of events. PGIS used “wire services (especially Reuters and the Foreign Broadcast Information Service), U.S. State Department reports, other U.S. and foreign government reports, U.S. and foreign newspapers, information provided by PGIS offices around the world, occasional inputs from such special interests as organized political opposition groups, and data furnished by PGIS clients and other individuals in both official and private capacities” (LaFree, et al. 2006, 1). Data quality and development are addressed further in Appendix A.

### *Constructing the Dependent Variable*

There were three relevant considerations in creating the population of events. The first was classifying an event as an act of terrorism. GTD included 11,810 attacks on military and 11,544 attacks on police targets. These were plausibly acts of war and were

deleted from the population. These events missed the definition's noncombatant attribute and risked introducing a normative element. The database also included 14 attacks committed by state agents. They were also removed from the population.

The second consideration was separating domestic from transnational events. GTD did not categorize attacks as domestic or transnational but included sufficient information to allow reasonable, if imperfect, conclusions. Following Young and Dugan (2011), attacks that could not be reasonably categorized as domestic or transnational were *ambiguous* events. Ambiguous events were further refined through scrutiny of GTD event summaries and generic descriptors. The remaining events were deemed ambiguous, but probable domestic attacks.

Perpetrator, target, and location nationalities were used to determine the transnational or domestic character of attacks. Perpetrator nationality was overwhelmingly the unknown parameter.<sup>73</sup> Only country codes from actual states were used. For example, the typical treatment of Northern Ireland or Puerto Rico in literature is to treat them as *de facto* states.<sup>74</sup> Original Northern Ireland and Puerto Rico "country" codes were recoded as the United Kingdom and United States, respectively.<sup>75</sup> This treatment is a more constructively valid implementation of the concept of domestic terrorism.

The final consideration was creating alternative dependent variables to test for robustness and compatibility to extant literature. The first variant retained original country codes. For example, the island of Corsica has a separate country code from

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<sup>73</sup> Original GTD data had 0 ambiguous attack locations and 2075 ambiguous targets. After recoding by the author, there were 1052 ambiguous targets. GTD did not code perpetrator nationality. After author coding, 34,302 unknown perpetrator nationalities remained.

<sup>74</sup> Both ITERATE and GTD use this method.

<sup>75</sup> The practical effect was to increase the number of domestic events over literature's common operationalization by 1788 events.

France. In this treatment, a National Liberation Front of Corsica (FLNC) attack in Corsica against a Corsican target was domestic terrorism but counted under France. A similar attack against a French target in Corsica was coded as transnational terrorism. This approach is compatible with most existing literature. The net effect was to decrease the number of domestic events, but not as much as might be anticipated. For example, IRA, FLNC, and various Palestinian groups favor targets with the same country code. Therefore, much of their violence was still captured as domestic terrorism.

The second variant counted only casualty-producing attacks. Enders and Sandler (2000, 2002) and Enders, et al. (2011) suggested only casualty-producing attacks reflected a coherent pattern. They found casualty-free attacks formless "random noise." This variant will be used to confirm or disconfirm their results. Table 4.1 summarizes the construction of the dependent variable and its variants.

Variable	States Only Country Codes	Original Country Codes	Confirmed and Probable Attacks	Confirmed and Probable Casualty Producing Attacks
Base	X		X	
1st Variant		X	X	
2nd Variant	X			X

**Table 4.1 Summary of base and variant treatments of the dependent variable**

### *Dependent Variable Descriptive Statistics*

Table 4.2 reveals dependent variable characteristics. The data is overdispersed. In other words, the standard deviation exceeds the mean by factors roughly between 4 and 5 to 1 for each version. The casualty-producing variant cut the mean number events roughly in half. In each version, a standard deviation cannot be subtracted from the mean without going below 0 events, which would be impossible. On the high end of the scale,

the state with the maximum number of attacks is a minimum of 18 standard deviations above the mean. This illustrates how many states have very little domestic terrorism, while others suffer tremendously.

The skewness and kurtosis measures reflected the shape of the distribution. Skewness measured asymmetry. Normally distributed data has a skewness value of 0. The positive values indicated the data skewed to the right. This was unsurprising as the number of events cannot be negative. Kurtosis measured the data distribution peak relative to the tails. Normally distributed data has a kurtosis value of 3. The positive kurtosis values indicated the data had a higher, steeper peak than normally distributed data. The relatively large kurtosis values indicated very long right tails.

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum	Skewness	Kurtosis
Confirmed and probable attacks (states only)	7256	8.74	37.10	0	689	8.51	97.82
Confirmed and probable attacks (original codes)	7256	8.48	36.56	0	689	8.78	103.24
Confirmed and probable attacks with casualties (states only)	7256	4.18	21.06	0	623	12.62	247.41

**Table 4.2** Summary statistics of base and variant dependent variables

### *Dependent Variable Diagnostic Tests*

#### Unit Roots and Random Walk

The long term survivability of certain terrorist campaigns suggests attack data could contain characteristics of a unit root or random walk. Either of these would be problematic for spurious regression bias. The primary and alternate versions of the dependent variable were tested for both conditions with a Dickey-Fuller test with a time

trend and using 1 and 2 lags. The null hypotheses were  $H_0 = \text{All Panels Contain Unit Roots}$  and  $H_0 = \text{Random Walk}$ . Table 4.3 contains Dickey-Fuller test results and Table 4.4 contains an additional persistence test. As indicated in Table 4.3, both null hypotheses were strongly rejected by inverse chi-squared P, inverse normal Z, and modified inverse chi-squared Pm tests.<sup>76</sup>

Variable	Panels	Average Periods	Lags	Inverse chi-squared P	Inverse normal Z	Modified inverse chi-squared Pm
Confirmed and probable attacks (states only)	203	35.74	1	1191.90***	-20.27***	27.72***
Confirmed and probable attacks (states only)	203	35.74	2	662.35***	-10.12***	9.09***
***p value <=.01						

Table 4.3 Dickey-Fuller unit root and random walk tests

### High Persistence

With unit roots ruled out, the degree of persistence was further tested with an additional regression of the dependent variable on its lag with robust standard errors. A  $\rho > .8$  would indicate high persistence in the dependent variable. The  $\rho$  ( $R^2$ ) result for the base dependent variable was .70, indicating the data was not highly persistent.<sup>77</sup>

Variable	Observations	Lags	P> t	R <sup>2</sup>
Confirmed and probable attacks (states only)	7053	1	0.000***	.70
***p value <=.01				

Table 4.4 Persistence test

<sup>76</sup> Base dependent variable results displayed. Alternate versions also rejected unit roots and random walks.

<sup>77</sup> High persistence was not indicated in any versions of the dependent variable.

## Independent Variables

The independent variables reflect conventional wisdom on causal conditions for terrorism - economic, political, systemic, and social. Each is addressed in turn. Table 4.5 lists the summary statistics for both the independent and control variables.<sup>78</sup>

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
GNI Per Capita (lagged)	4703	8.5113	9.7765	.2043	62.8715
GDP Growth Rate (lagged)	6158	3.6412	6.3297	-51.0309	106.2798
Autocracy	6098	.3670	.4820	0	1
Anocracy	6098	.2183	.4131	0	1
Democracy	6098	.4147	.4927	0	1
Cold War	7256	.4981	.5000	0	1
Ethnic Fractionalization	7220	.4383	.2645	0	.9302
Linguistic Fractionalization	7231	.3685	.2930	0	.9227
Religious Fractionalization	7256	.4293	.2383	0	.8603
Population (natural logarithm)	7256	15.3040	2.1926	8.7785	21.0169
Population	7256	29,800,000	112,000,000	6493	1,341,335,152
History (lagged)	7053	8.7237	36.8807	0	689
Mountain Terrain (natural logarithm)	5948	2.0935	1.4331	0	4.5570
Mountain Terrain (percentage)	5948	17.5470	21.5419	0	94.3000
Urban Terrain (natural logarithm)	7018	3.7648	.6059	1.2238	4.6151
Urban Terrain (percentage)	7018	49.3221	24.5225	2.4000	100

Table 4.5 Summary statistics for independent and control variables.

<sup>78</sup> Raw population data was not used in the models but is included for comparison purposes only.

## *Economic*

Economic wellbeing was captured in two variables reflecting wealth/poverty and economic prospects. Per capita income is a standard proxy for relative societal wealth, or lack thereof. It is calculated by dividing the Gross National Income (GNI) by the population. Per capita income figures were gathered from the World Bank Data and Statistics web site. The World Bank used the purchasing power parity (PPP) method. PPP considers variation in the relative price of goods and services. It uses "current *international* dollars which, in principal, have the same purchasing power as a dollar spent in the U.S. economy" (WB 2008).<sup>79</sup> To account for the possibility of an inverse U effect, whereby states in the middle range of wealth are most susceptible to terrorism, a squared per capita income term was added to all models.

Terrorist actions in any given year are likely a reaction to economic conditions over time. A one year lag was used on per capita income to reflect this. This treatment somewhat serendipitously addresses the statistical difficulty of contemporaneous correlation between per capita income and terrorist events. The lag of the independent variable accounts for this possible statistical problem. As the research spans 41 years, inflation could have a distorting effect on interpretation. To allow for like comparisons, all dollar amounts were converted to constant 2000 dollars based on Consumer Price Index data.<sup>80</sup>

Economic prospects are reflected in the annual Gross Domestic Product (GDP) growth rate. Annual GDP is the market value of legally produced goods and services originating within a state. This data was gathered from the World Bank development

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<sup>79</sup>PPP was chosen over the Atlas method because it allows comparison across theoretically constant units of measurement.

<sup>80</sup>Conversions from Sahr (2011).



indicators. Growth rate is expected to be discerned in near real time, but with a small gap between perception and action. There is a natural human reluctance to engage in risky behavior such as terrorist violence. Likewise, delay may occur while individuals confirm their original impressions of economic direction. To account for this, growth rate was lagged by one year. The lag also reduces concerns over a possible coterminous relationship with the dependent variable and reverse causation.

### Economic Hypotheses

Economic explanations are the most popular in terrorism literature. The poverty explanation represents conventional wisdom. Wealth is reflected in per capita income.

*Hypothesis 1: Wealth decreases terrorism.*

Perhaps it is not current wealth but economic performance that matters. Short term economic prospects influence the incidence of terrorism. Economic prospects are reflected in economic growth rates.

*Hypothesis 2: Economic growth decreases terrorism.*

### *Political*

Regime variables reflect political determinants of terrorism. Regime types were measured using *Polity IV Project* characteristic scores (Marshall, et al. 2010). *Polity* classifies regimes with more than 500,000 people beginning in the year 1800. The population restriction results in missing regime type data for 30 microstates, although not all of them span the entire 41 years of the research.<sup>81</sup> *Polity* uses both an autocracy and

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<sup>81</sup> The states are Andorra, Antigua and Barbuda, Bahamas, Barbados, Belize, Brunei, Dominica, Grenada, Iceland, Kiribati, Liechtenstein, Luxembourg, Maldives, Malta, Marshall Islands, Micronesia, Monaco, Nauru, Palau, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and Grenadines, Samoa, San Marino, Sao Tome and Principe, Seychelles, Suriname, Tonga, Tuvalu, and Vanuatu.

democracy scale. Grading criteria consist of measures of executive recruitment, constraints on executive authority, and political competition. On the autocracy scale, regimes receive a grade of 0 (little autocracy) to -10 (strongly autocratic). The democracy scale ranks from 0 (little democracy) to +10 (very democratic). To obtain a consolidated regime score, I added both scales. The result was a total regime score ranging from -10 to 10. To avoid negative numbers, 10 was added to each total resulting in scores from 0-20.

Adapting the recommendations from the *Polity* website,<sup>82</sup> regimes were characterized trichotomously as autocracies (0-4), anocracies (5-15), and democracies (16-20). To avoid perfect multicollinearity, autocracies were not included in the model. Autocracy is the base condition used to assess the effects of other regime types. One year lags were used for regime variables to address possible contemporaneous correlation with terrorist events.

Because it captured microstates and as a robustness check, I also used *Freedom House* measures (Puddington 2010).<sup>83</sup> *Freedom House* assessed every state in the international system beginning in 1972.<sup>84</sup> It used two scales - political rights and civil liberties. Political rights reflect the ability to participate in the political process, vote without coerced choices for distinct alternatives, compete for public office, and join political organizations. Civil liberties indicated protected free expression, organizing rights, the rule of law, and personal liberties. States received scores from 1-7 on each

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<sup>82</sup> <http://www.systemicpeace.org/polity/polity4.htm>

<sup>83</sup> *Polity* and *Freedom House* scores are known to be highly correlated (Mainwaring and Perez-Linan 2003, 1036). Due to changing methodology and scales and the lack of retroactive updates, some argue (e.g. Kis-Katos, et al. 2011, S22, Li 2005, 293) *Freedom House* ratings are inappropriate time series variables. It is unclear whether the two sources are measuring the same elements of regimes.

<sup>84</sup> This resulted in missing data for all states in the system for 1970 and 1971.

scale with smaller numbers indicating greater political rights or civil liberties. The two scales were reversed, so that higher numbers indicated greater political rights and civil liberties, and then added together. Scores ranged from 2-14 with 14 indicating the most democratic polities. Classified by aggregate scores, autocracies were (2-6), anocracies (7-11), and democracies (12-14).<sup>85</sup>

### Political Hypotheses

There are indications autocracy suppresses terrorism. The civil liberties of democracy are likely to enable terrorism. Free movement, open media, and restrained security services provide opportunity. Widespread public rejection frustrates radical agendas.

*Hypothesis 3: Democracies suffer more terrorism than autocracies.*

The contingent nature of anocratic political systems invite violent challenge while simultaneously lacking the most drastic security countermeasures. Hybrid regimes are frequently in transition from either failed autocracy or failed democracy.

*Hypothesis 4: Anocracies suffer more terrorism than autocracies.*

### *Systemic*

Period variables are proxies for systemically induced domestic terrorism. Power configuration theories are reflected in binary variables coded as "1" for the years in effect and "0" otherwise. Cold War years represent a bipolar global system. The post-Cold War years represent a unipolar system of American military dominance. The end of the Cold War may be marked by different historical events. The Berlin Wall fell on November 9, 1989, German reunification was on October 3, 1990, and the Soviet Union

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<sup>85</sup> I came closest to Benoit's (1996) scale (Bogaards 2010).

dissolved on December 21, 1991. Although it arguably ended in 1989 or 1990, the Cold War was coded in effect from 1970-1991.<sup>86</sup> The post-Cold War era was from 1992 onwards.

### Systemic Hypothesis

The Cold War was a time of military and ideological competition. For domestic terrorism, this dynamic is expected to be more salient than unipolar hegemony. Local proxies were supported, openly or covertly, with considerable effort to distance agents of the intervening power from direct involvement.

*Hypothesis 5: Bipolar systems increase terrorism over unipolar systems.*

### *Social*

Social determinants are represented by identity group distributions. I chose the social data of Alesina, Easterly, Devleeschauwer, Kurlar, and Wacziarg (2003) over two alternative sources from Montalvo and Reynal-Querol (2005) and Desmet, Ortuno-Ortin, and Wacziarg (2012). Alesina et al. argued there were three primary social identities - linguistic, ethnic, and religious.<sup>87</sup> Three identities increased conceptual granularity and flexibility over the more traditional approach using only linguistic and religious variables. As a robustness check, I used the alternative social data from Montalvo and Reynal-Querol and Desmet et al. Refer to Appendix D for a discussion of these sources and the robustness results.

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<sup>86</sup> Basuchoudhary and Shughart (2010) chose the 1989 fall of Berlin Wall as the end of the Cold War. Li (2005) and Feldman and Perala (2004) coded the Cold War through 1990.

<sup>87</sup> Separating linguistic and ethnic background broke with previous practice. Their work theorized linguistics and ethnicity were, at their core, different.

Fortunately, Alesina et al. contributed their original microdata on numbers and percentages to the academy.<sup>88</sup> For original source ethnic data, Alesina et al. used *Encyclopedia Britannica*, the Central Intelligence Agency (CIA) *World Factbook*, Levinson (1998), Mozaffar and Scarritt (1999), *World Directory of Minorities*, and national census figures. Linguistic and religious data were sourced solely from *Encyclopedia Britannica*. Their dataset had a small, but potentially important, amount of missing data. The missing data was supplemented by author derived data.<sup>89</sup> See Appendix C for details on the construction of supplemental data.

Identity distributions change slowly and suitable time series data is unavailable. Therefore, social variables are treated as constant (Alesina, et al. 2003, Desmet, et al. 2012, Fish, et al. 2010, Montalvo and Reynal-Querol 2005). The time invariant assumption is not perfect. Episodes of ethnic cleansing, voluntary or otherwise, occurred since the 1970s. In the 1990s Balkans, Croats, Serbs, and Albanians alternatively suffered forced or “encouraged” migrations. Migrations also occurred during the violence in Timor Leste between Christians and Muslims. Birth rates differ. Religious conversions occur. Still, the research spans only 41 years and original source data was gathered within the research period. Social distributions can reasonably be assumed as constant.

Social tensions were tested using the concept of fractionalization. Fractionalization is the probability two randomly picked individuals within a state belong to different groups

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<sup>88</sup> Researchers using Alesina et al. microdata should note minor transcription errors. Religious data for Guernsey was labeled Germany. “India, other” languages were listed at 100% when they are closer to 0%.

<sup>89</sup> The microdata of Montalvo and Reynal-Querol and Desmet et al. were unavailable. This made replacing their missing data problematic.

(Alesina, et al. 2003, Desmet, et al. 2012, Montalvo and Reynal-Querol 2005, Skjolberg and Nordas 2007). Fractionalization was measured by the formula:

$$\mathbf{Fractionalization} = 1 - \sum_{i=1}^N \pi_i^2 = \sum_{i=1}^N \pi_i (1 - \pi_i)$$

where  $\pi_i$  is the proportion of people belonging to identity group  $i$ , and  $N$  is the number of groups. This form of the formula was adopted from Montalvo and Reynal-Querol (2005) but is functionally identical to the one used by Alesina et al.

The research model is designed to isolate social tension effects. Differentiating among the three forms requires treating them as distinct, pure categories. A glance at Table 4.6 reveals linguistic and ethnic fractionalization are highly correlated at .70. This suggests ethnic and linguistic identities are conceptually different, yet exhibit considerable overlap. To differentiate between effects, they will not be simultaneously included in the same model.<sup>90</sup> In contrast, religious identity does not correlate well with either language or ethnicity. It will be tested in conjunction with linguistic and ethnic identity.

Identity Fractionalization	Ethnic	Linguistic	Religious
Ethnic	1.00	.70	.18
Linguistic	.70	1.00	.26
Religious	.18	.26	1.00

Table 4.6 Correlation among different types of identity fractionalization

## Social Tension Hypotheses

### Linguistic Identity

Where political tensions are fraught, linguistic divisions are potent recruiting grounds for terrorist leaders. For many, language represents who they are - in a word, identity.

<sup>90</sup> The same approach was used by Kurrild-Klitgaard, et al. (2006).

Both grievances and prospective spoils can effectively and easily be explained in terms of linguistically-centric narratives.

*Hypothesis 6: Linguistic fractionalization increases terrorism.*

### Ethnic Identity

Ethnic diversity is expected to increase domestic terrorism. Ethnic social tensions are easily exploited by terrorist leaders. Similar to linguistic diversity, grievances and prospective spoils can be explained in terms of ethnic narratives.

*Hypothesis 7: Ethnic fractionalization increases terrorism.*

### Religious Identity

Religious identity is not expected to be predictive of domestic terrorism. Religion appears to be a much more potent grievance for transnational than domestic terrorism. Conventional wisdom is that religious diversity is unimportant.

*Hypothesis 8: Religious fractionalization is unrelated to terrorism.*

## **Control Variables**

The research models include a selection of common control variables. Population is a staple of terrorism studies. Large populations are believed more likely to be fractious and difficult to police. A history of terrorism is another useful control variable for both theoretical and statistical reasons. Long term terrorist groups are likely to be more skilled and survivable. Statistically, this may cause within group serial correlation.

Conceivably, the configuration of the physical environment also matters. Environmental variables include mountainous terrain and urbanization. Environment makes terrorist groups more or less survivable. It simultaneously conditions the conduct of terrorist

operations and security force countermeasures. It influences the distribution of civil populations, the media, and lucrative targets. Each control variable is addressed in turn.

### *Population*

Population is almost always significant in literature and has a direct relationship on terrorism. The United Nations (UN) Statistic Division (2010) maintains global, time-series population data in thousands of persons. Population in thousands was first converted to raw population and subsequently smoothed with natural logarithms. Due to the wide range of population values, the linear relationship of untransformed data may not be detectable. Logging forces variables to be more symmetrical. This makes relationships among variables more linear, which is valid for statistical inference (Cohen, et al. 2002). Population was lagged by one year to account for possible coterminous relationships and to rule out reverse causation.

### Population Hypothesis

Sheer population makes polities contentious. Large populations are predictive of suicide attacks (Wade and Reiter 2007, 341). They are harder for governments to exert control over (Collier and Hoeffler 2004, 588, Fearon and Laitin 2003b, 88, Lai 2007, 302, Sambanis 2004, 855). Populous states provide opportunities for terrorists to blend in among ordinary citizens, complicate efforts to sift information on operatives, increase the recruitment pool, and increase the likelihood of sympathizers capable of meeting support requirements. Large states are more likely to have local interests different than the national agenda. This could increase alienation as aggregating interests becomes more challenging. This leaves some groups disaffected, their interests either unachievable or unaddressed by the body politic.



Populous states usually encompass sizeable surface areas. Large states, meaning size of country, are more susceptible to terrorism (Abadie 2006, Blomberg and Hess 2008b, Eyerman 1998, Fearon and Laitin 2003b, Skjolberg and Nordas 2007). Available security forces are, *ceteris paribus*, more spatially diffused. Populous states are likely to have longer land borders allowing for surreptitious entry and exit. Even though domestic terrorism concerns perpetrators originating within the state, it does not negate the importance of smuggling or external safe havens.

*Hypothesis 9: The more population, the more terrorism.*

### *History*

An entrenched history of instability and terrorism breeds yet more terrorism (Chenoworth 2006, 28, Cox, et al. 2009, 202, Feldmann and Perala 2004, 121). Once the veneer of regime legitimacy is brought into doubt by successful attacks, alternative political possibilities generate sympathizers and recruits. Copycat groups perceive an opportunity to dislodge the existing political order and become active. Competing dissident groups add to the chaos, not out of sympathy for the original group, but to weaken the government.

Some states are prone to terrorism. Several terrorist groups have long term survivability. As terrorists shape their environment, they realize logistical advantages and operational economies of scale (Drakos and Gofas 2006). Terrorist groups learn from experience and become resilient over time. Violence in the previous year indicates at least a short term pattern of terrorist violence. Theory justifies a history variable.

For example, the FARC coalesced from peasant resistance groups formed during the civil war known as “the Violence” between in 1948 and 1958. It formally announced its

existence in 1964 and continues to operate in 2012 (Beittel 2011). The GTD records at least one attack every year between 1975 and 2012. FARC is particularly strong in remote areas. It adapted to its environment, and is capable of supporting itself through drug trafficking and “taxation” (Beittel 2011). Hijackings, kidnappings, and bombings are among the most sophisticated and complex terrorist tactics (Enders and Sandler 1999, 2006). FARC has learned to become proficient at each (Beittel 2011). The group is approaching 50 years of operations in Colombia, marking it as one of the most survivable in modern times.

Following precedent, a past history of terrorism was measured with a lagged dependent variable (e.g. Drakos and Gofas 2006, Kis-Katos, et al. 2011, Li 2005, Young and Dugan 2011). The relevant question is exactly how much history (lags) to include? David Rapoport (1992) approximated 90% of all terrorist groups had a life expectancy of less than one year and of the remaining 10%, half did not survive for a decade.<sup>91</sup> Enders and Sandler (2000, 322) found two year life cycles for groups producing attacks with casualties. I followed the lead of most researchers and used a one year lag. Additional lags are discussed in Appendix E.

In addition to theoretical reasons, there are coincidental statistical reasons to model history with a lagged variable. The dependent variable is likely to exhibit serial correlation. Diagnostic tests revealed as much. Other research has shown lags of the dependent variable mitigate serial correlation effects (Achen 2000, Beck and Katz 2009, Keele and Kelly 2006, Kristensen and Wawro 2003, 2007).

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<sup>91</sup> Referenced from Hoffman (2006, 241).

## History Hypothesis

Conventional wisdom posits historical violence is likely to be repeated. Relatively successful terrorist campaigns encourage others to join or support the cause. A snowball effect results in violence from several quarters.

*Hypothesis 10: A history of terrorism increases terrorism.*

## *Mountainous Terrain*

Mountains provide shelter for rebels (Collier and Hoeffler 2004, Fearon and Laitin 1999, 2003b, Hegre and Sambanis 2006). Mountains are difficult to traverse, disrupt lines of sight, and are sparsely populated. Security force communications and formations are less effective and more difficult to maintain. They are easier to defend. Recruits may be trained and indoctrinated relatively unmolested. Extremely high altitude degrades the efficiency of helicopters and increases their vulnerability (Grau 1996). Average elevation is directly related to terrorism (Abadie 2006).

On the other hand, mountainous terrain may have little effect (Miguel, et al. 2004, Sambanis 2004). Small bands of terrorists, which account for the majority of groups, may eschew rough terrain. Outdoor lifestyles are more difficult. Mountains typically lack ready access to the media, high profile targets, or populations to draw support from or disappear into.

The case of the Taliban in Afghanistan illustrates how mountains increase the survivability of terrorists. The Taliban were created largely with the support of the Pakistani Inter-Services Intelligence agency in the wake of the Soviet intervention in

Afghanistan on December 27, 1979 (Coll 2004). The organization is large and well equipped by terrorist group standards.<sup>92</sup>

To be sure, not all or even most Taliban attacks qualify as terrorism. However, they are known to frequently attack noncombatant targets. Much of their violence is transnational. Nonetheless, Taliban terrorism is primarily domestic. Since 1980, the Taliban and their predecessors have used the mountains of Afghanistan as a refuge from which to project terrorist and guerilla assaults into population centers. Neither Russian, nor American, nor Afghan forces were able to successfully eradicate them from their hideouts.

The percentage and natural logarithms of mountainous terrain were sourced from Fearon and Laitin (2003b). Fearon and Laitin added 1 to the percentage of mountainous terrain and subsequently logged the sum. Adding 1 to the percentage of mountainous terrain avoided negative numbers for very flat states.<sup>93</sup> I followed Fearon and Laitin and used the natural logarithm of the percentage of mountainous terrain. For robustness, the raw percentage of mountains was also tested.

### Mountainous Terrain Hypothesis

Because of the difficulty of security operations in rugged terrain, mountains increase the survivability of insurgents of all sorts, to include terrorists. Conventional wisdom suggests insurgents prefer the survivability of rugged terrain.

*Hypothesis 11: The more mountainous terrain, the more terrorism.*

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<sup>92</sup> That may be characteristic of insurgents taking advantage of mountainous terrain.

<sup>93</sup> The natural logarithm of 1 is 0 and becomes negative for values of less than 1.

## *Urbanization*

The most infamous attacks occur in cities. Urbanization is directly related to the incidence of terrorism (Campos and Gassebner 2009, Kis-Katos, et al. 2011, Tavares 2004). Cities contain a large selection of symbolic and practical targets and easy access to the media (Crenshaw 1981, 382, Enders and Sandler 2006, 18, Huntington 1968, 290, Llussa and Tavares 2007, 63, Marighella 2008 [1969], 30-31, Tavares 2004, 1051). In highly urbanized states, cities may be the sole opportunity for terrorism.

Urban areas have three advantages. First, security forces are stretched and unable to protect all possible targets (Marighella 2008 [1969], 15). Second, any attack is almost guaranteed press coverage. This communicates terrorist prowess and government weakness to intended audiences. Third, cities are less tasking for personal survival, concentrate potential recruits, and allow more time for political activities. Terrorists are often educated in urban universities (Huntington 1968, 290). Berrebi (2007) found the majority of Palestinian terrorists had urban origins.

Alternatively, urban terrain could inhibit terrorism. Security forces have quicker and unimpeded access to hideouts. Informers may be easier to recruit and harder to avoid. Urban terrorism lore could be inflated and biased due to easier access to media and means of communication. With the exception of Islamist terrorism, Robison, et al. (2006) discounted the urban effect.

The World Development Indicators contain time-series cross-section data on urbanization. World Development Indicators do not define urban areas. Instead, they rely on figures provided by national statistical offices (WB 2012). This approach practically guarantees measurement error. Nonetheless, when aggregated as a national

percentage of urban population, the magnitude of error should not be problematic. By way of example, the United States Census Bureau defined urban areas as containing a population density of at least 1,000 persons per square mile.<sup>94</sup>

I used the natural logarithm of the percentage of urbanization to represent the relative distribution of the city dwelling population. Similar to mountain terrain, 1 was added to the percentage of urban terrain before the natural logarithm was calculated. For robustness, the raw percentage of urban terrain was also tested.

### Urbanization Hypothesis

Cities are widely heralded as the venue for terrorism. Conventional wisdom favors urban areas as breeding grounds.

*Hypothesis 12: The more urbanization, the more terrorism.*

## **The Statistical Methods**

The intent is to empirically test variables resulting in terrorist attacks. Using generic terms from literature, the base equation is:

$$\text{Domestic Events} = \alpha + \beta_1(\text{economic})_{(t-1)} + \beta_2(\text{political})_{(t-1)} + \beta_3(\text{systemic}) + \beta_4(\text{social}) + \beta_5(\text{control}) + \beta_6(\text{history})_{(t-1)}$$

where history is a one year lag of the dependent variable.

Substituting specific measures for generic categories, the initial equation becomes more complex:

$$\text{Domestic Events} = \alpha + \beta_1(\text{anocracy})_{(t-1)} + \beta_2(\text{democracy})_{(t-1)} + \beta_3(\text{GNI per capita})_{(t-1)} + \beta_4(\text{GNI per capita})^2_{(t-1)} + \beta_5(\text{GDP growth rate})_{(t-1)} + \beta_6(\text{Cold War}) +$$

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<sup>94</sup> ("Federal Register: Urban Area Criteria for the 2010 Census" 2011) This definition is greatly simplified. The original explanation required 15 pages.

$\beta_7(\text{linguistic/ethnic fractionalization}) + \beta_8(\text{religious fractionalization}) + \beta_9(\text{logged population}) + \beta_{10}(\text{domestic events})_{(t-1)}$

where linguistic and ethnic fractionalization are alternated in the models. Note the population and history control variables are included in the base equation. Population is near universally significant and substantive.<sup>95</sup> Failure to include it in the base model risks misspecification. The history variable is important for both theoretical and statistical reasons. To assess alternative explanations, additional control and robustness variables will be added to the base model.

The research time period is the years 1970-2010, for a total T of 41 years. The number of states, N, in the international system grew from 145 in 1970 to 194 in 2010. Because the time period, T, of 41 is greater than 20 and the N of 194 is greater than T, panel corrected standard errors need not be used (Beck and Katz 1995). To rule out stationarity, both the dependent variable and disturbances will be tested for unit roots. I will use the Fisher test for panel data and regress the dependent variable and error terms on their respective lags with robust standard errors.

Hypotheses are tested temporally and spatially with Stata© statistical software with two-tailed significance tests. Because the dependent variable is an event count, I will use a negative binomial regression model. Negative binomial models are maximum likelihood estimators more appropriate than either ordinary least squares (OLS) or Poisson techniques (Brandt, et al. 2000, Gardner, et al. 1995, King 1988). The count variable cannot be negative, over half of the states in the sample have a value of zero in any given year, and the observations are not randomly or normally distributed. The

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<sup>95</sup> I accept populous states have more terrorism. It would be surprising if population was not a salient causal variable.

negative binomial outperforms Poisson regression because it accounts for overdispersion - standard deviation greater than the mean - in the dependent variable. Table 4.2 illustrates the overdispersion of the data.

The zero inflated binomial regression is a less frequently used technique in terrorism research. Zero inflated negative binomial regression assumes certain states are systematically different in domestic terrorism risk. There is no obvious reason why this should be the case. Nonetheless, the possibility cannot be definitively ruled out. Table 4.7 reveals states with no recorded domestic events. The list is relatively short. The lack of attacks in some states is credibly due to their short lifespan. Of the nineteen seemingly immune states, twelve are islands,<sup>96</sup> six of which are in the Oceania region.<sup>97</sup>

**Cape Verde (1975-2010)**  
**Kiribati (1979-2010)**  
**Liechtenstein**  
**Marshall Islands**  
**Micronesia (1986-2010)**  
**Monaco**  
**Mongolia**  
**Montenegro (2006-2010)**  
**Nauru**  
**North Vietnam (1970-1975)**  
**Oman**  
**Saint Lucia (1979-2010)**  
**Saint Vincent and the Grenadines (1979-2010)**  
**San Marino**  
**Sao Tome and Principe (1975-2010)**  
**Seychelles (1976-2010)**  
**Tonga**  
**Turkmenistan (1991-2010)**  
**Tuvalu (1978-2010)**

**Table 4.7 States free of domestic terrorism**

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<sup>96</sup> Islands were defined as land masses surrounded by water in the United Nations Education Program Island Directory (Dahl 2004).

<sup>97</sup> All 14 states in Oceania are islands. A model using an Oceania regional dummy, both including and excluding Australia, was tested but it was not significant. Although not exhaustive of possible systemic immunity factors, these results suggest Oceania is not an inoculate to domestic terrorism. Excepting systemic immunity factors, zero inflated negative binomial regression is not the best method.



Zero inflated models allow for the coexistence of conditions systemically inducing 0 values and cases where attacks were possible but fortuitously avoided. As the conditions preventing attacks is unknown, the inability to distinguish between the two conditions makes it unclear a zero inflated model would be an improvement over a negative binomial model. I will use zero inflated binomial regression as a robustness check.<sup>98</sup>

### *Serial Correlation*

Independent variables were tested for serial correlation in the idiosyncratic errors. The Wooldridge (2002) and Drukker (2003) check used a Wald test. Their method did not allow for time-invariant variables. Therefore, social fractionalization measures had to be removed from the base model. Lagged dependent variables were permitted and included. As the model used random effects, the homoskedastic or heteroskedastic nature of the dependent variable distribution was irrelevant (Drukker 2003).<sup>99</sup> As expected, the null hypothesis of  $H_0 = \text{No Serial Correlation}$  was strongly rejected above the .01 significance level.

Given the strong evidence of serial correlation, the statistical precaution of including a lagged dependent variable is justified. I will use a one year lag of the dependent variable to correct for serial correlation. Serial correlation and missing variable bias may

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<sup>98</sup> The Vuong test indicated a zero inflated model would be justified. However, Piazza (2008) citing Long and Freeze (2001) found it overfit data absent a compelling rationale why some states have systemic terrorism immunity.

<sup>99</sup> Heteroskedastic data degrades the test for fixed effect models with small sample sizes, which does not apply here, and low serial correlation (Drukker 2003).

be substantively corrected through this method (Achen 2000, Beck and Katz 2009, Keele and Kelly 2006, Kristensen and Wawro 2003, 2007).

### *Random Effects versus Fixed Effects*

Fixed and random effects models are based on different assumptions about the nature of the data. Fixed effects require less restrictive assumptions. They allow correlation between state specific effects and other independent variables. Random effects require state specific effects to be uncorrelated with all other independent variables in all time periods (Wooldridge 2009, 482, 89).

The data is more likely to approximate the assumptions of fixed effects. However, fixed effects create a dilemma. They eliminate time invariant, and severely mask the value of near time invariant, variables (Kristensen and Wawro 2007, Lai 2007, Wooldridge 2009). Additionally, a fixed effects model perfectly predicts states with all 0 outcomes for the observation period, thereby precluding their inclusion (Freytag, et al. 2011, Kis-Katos, et al. 2011).

Because the research includes several constant or near time invariant independent and control variables, I used a random effects model.<sup>100</sup> Key explanatory factors include regime types, social fractionalization, mountains, and urbanization – all of which fit in this category. To compensate, a lagged dependent variable is included in the model.

### *Time Dummies*

Many researchers include time dummies to account for unobserved effects that equally influence all cases in a given year (e.g. Burgoon 2006, Dreher and Fischer 2010,

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<sup>100</sup> I considered and rejected use of the fixed effect vector decomposition (FEVD) technique (Plumper and Troeger 2007) with a fixed effects model. For deficiencies of the FEVD see Greene (2010) and Breusch, et al. (2011).

Kis-Katos, et al. 2011, Li and Schaub 2004, Piazza 2011, Robison, et al. 2006). This can mitigate cross-sectional spuriousness due to common trends (Gaibullov and Sandler 2011). The equal influence assumption is too strong for the main model. However, a year dummy will be added as a robustness check.

## **Summary**

This chapter outlined the research design. The dependent variable is an event count with a highly skewed distribution. Common independent and control variables and their summary statistics were listed. Robustness was discussed in terms of variables and regression techniques. A total of 12 hypotheses were proffered to test structural determinants of domestic terrorism. The relative merits of negative binomial and zero inflated negative binomial regression were summarized. The comparative advantages and disadvantages of random and fixed effects models were outlined. The use of time dummy variables to address spatial correlation was discussed.

Although there was little indication of a unit root, random walk, or high persistence in the dependent variable, there was strong evidence of serial correlation in the idiosyncratic errors. Due to the nature of the dependent, independent, and control variables, the research will use a negative binomial regression with random effects and include a lagged dependent variable.

## CHAPTER 5

### DETERMINANTS OF DOMESTIC TERRORISM

I did not find it very necessary to go into lengthy discussions of the historical, social, and identity issues. It was more appropriate to leave them to social scientists as topics for research.

- Abdullah Ocalan<sup>101</sup>

This chapter assesses the salience of structural determinants of domestic terrorism. The academic community broadly agrees structural explanations of domestic terrorism originate in economic, political, systemic, social, or historical conditions. That, unfortunately, is the limit of the consensus. There is little agreement on which structural determinants really matter or how they impact terrorism. This chapter analyzes the empirical evidence. Before exploring the results, I briefly review the interpretation of incidence rate ratios. The results of the statistical models follow.

#### Incidence Rate Ratios

The models were calculated using Stata software specifying the **irr** (incidence rate ratio) option. Therefore, table coefficients are incidence rate ratios. Following Burgoon (2006) and Kis-Katos, et al. (2011), I used incidence rate ratios because they are easier to interpret in nonlinear models.<sup>102</sup> For readers preferring the standard coefficients without the **irr** option, they are provided in Appendix F.

Incidence rate ratios are derived from the incidence of counts - in this case terrorist attacks. They may be thought of as a ratio of ratios (Hilbe 2008). In other words, the risk of suffering attacks correlated with the independent variable compared to

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<sup>101</sup> Kurdistan Workers Party (PKK) chief from the opening statement at his trial (Ocalan 1999)

<sup>102</sup> The negative binomial regression is a count model and nonlinear.

the baseline risk of terrorism. Incidence rate ratio coefficients, as reflected in the table, give the ratio by which the dependent variable changes per unit change in the independent variable (Buis 2010, 305).<sup>103</sup> Their effect is multiplicative. The predicted change to the baseline risk is easily derived. It is computed as (coefficient -1) X 100%. The baseline risk of terrorism is reflected in the **Constant** term (Buis 2012) of Table 5.1.

The process may be illustrated with an example. Refer to the results for anocratic regimes in Table 5.1, Model 1. A change from autocracy (the base political regime type not listed in the model to avoid multicollinearity) to anocracy is predicted to cause an 86% ( $1.8582 - 1 = .8582$ ;  $.8582 \times 100\% = 85.82\% \approx 86\%$ ) increase to the baseline risk of terrorist attacks (the **Constant** term), all other variables being held constant. To compute the new overall risk of terrorism in a state changing from autocracy to anocracy, multiply 1.86 X the **Constant** term. Incidence rate ratio coefficients  $>1$  indicate an increasing, direct relationship between the independent variable and terrorism. Incidence rate ratio coefficients  $<1$  indicate a decreasing, indirect relationship. If the confidence interval included 1, the effect of the variable was indeterminate and therefore not significant, even if it “passes” the standard *t*-test (Hilbe 2008, 17).<sup>104</sup> For example, the coefficient of natural logarithm of mountainous terrain in Model 3 is 1.0491 and at the  $p \leq .1$  level. However, the .95 confidence interval of the incidence rate ratio is .9959-1.1051. Therefore, the direction of the relationship is indeterminate and mountainous terrain is not significant.

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<sup>103</sup> Further explanation is contained on UCLA Institute for Digital Research and Education webpage ("Stata Annotated Output Negative Binomial Regression" 2012)

<sup>104</sup> I retained the \* significance indicators in the table but included the @ sign to indicate the confidence interval included 1.

## Empirical Results

Table 5.1 shows the empirical results for the base and advanced models. Because ethnic and linguistic fractionalization are highly correlated, they were not tested simultaneously. Model 1 lists ethnic fractionalization and all other models list linguistic fractionalization results.<sup>105</sup> All independent variables, except ethnic and religious fractionalization, were significant at the .01 level or higher, meaning the chance of their random correlation to domestic terrorist acts was less than 1%. Ethnic fractionalization was significant at the .05 level. Religious fractionalization was not significant. Among control variables, history, Cold War, and population were significant at the .01 level or higher. Neither mountainous terrain nor urbanization were significant.

Confirmed and Probable Attacks (states only) Independent and Control Variables (lags)	Model			
	1	2	3	4
Anocracy (t-1)	1.8582 (8.05)***	1.8354 (7.94)***	1.8509 (8.03)***	1.8498 (8.02)***
Democracy (t-1)	1.4135 (4.20)***	1.4247 (4.31)***	1.4307 (4.35)***	1.4288 (4.33)***
GNI per capita (t-1)	1.0469 (3.90)***	1.0673 (5.54)***	1.0682 (5.58)***	1.0665 (4.68)***
GNI per capita squared (t-1)	.9990 (3.16)***	.9986 (4.21)***	.9986 (4.15)***	.9986 (3.69)***
GDP growth rate (t-1)	.9765 (6.16)***	.9759 (6.30)***	.9762 (6.20)***	.9762 (6.20)***
Linguistic Fractionalization		1.412 (2.67)***	1.4229 (2.72)***	1.4262 (2.73)***
Ethnic Fractionalization	.7148** (2.20)			
Religious Fractionalization	1.0502 (.33)	.8537 (1.03)	.8753 (.85)	.8777 (.83)
History (t-1)	1.0055 (25.25)***	1.0055 (25.24)***	1.0055 (25.06)	1.0055 (24.89)***
Cold War	1.2191 (3.97)***	1.2187 (3.97)***	1.2294 (4.14)***	1.2329 (4.06)***
Population	1.2716 (10.21)***	1.2665 (9.94)***	1.2474 (9.13)***	1.2471 (9.11)***
Mountainous Terrain (log)			1.0491@ (1.80)*	1.0498@ (1.82)*
Urbanization (log)				1.0169 (.21)
Constant	.0052 (12.41)***	.0041 (13.13)***	.0046 (12.75)***	.0044 (10.91)***
Log Likelihood	-8304.1056	-8302.9336	-8253.0322	-8253.0091
Wald	983.05***	977.28***	978.23	978.96
Observations	4037	4037	3924	3924

\*p value <=.1, \*\*p value <=.05, \*\*\*p value <=.01  
 @.95 confidence interval includes 1  
 coefficient >1 direct relationship; coefficient <1 indirect relationship; Constant is baseline risk  
 format: Incident Rate Ratio  
 (Absolute Z-statistic Value)

**Table 5.1 Negative binomial results**

<sup>105</sup> Advanced models substituting ethnic fractionalization for linguistic fractionalization maintained the same pattern. Ethnic fractionalization was significant and indirectly related to terrorism and there was little change to any other variables. Results are available upon request.

Table 5.2 shows the empirical results using a zero inflated technique. As in the negative binomial version in Table 5.1, Model 1 lists ethnic fractionalization and all others use linguistic fractionalization. Anocracy, per capita income and its squared term, history, Cold War, population, and mountainous terrain were significant at the .01 level or higher. Growth rate was significant at the .05 level and at the .01 level in Model 2. Religious fractionalization was significant at the .05 level in Model 1 and the .01 level in Model 2. Democracy was not significant in Model 1 and not significant within the .95 confidence interval for Models 2 through 4.<sup>106</sup> Linguistic fractionalization, ethnic fractionalization, and urbanization were not significant.

Confirmed and Probable Attacks (states only) Independent and Control Variables (lags)	Model			
	1	2	3	4
Anocracy (t-1)	1.4214 (3.00)***	1.4239 (3.07)***	1.4241 (3.12)***	1.4132 (3.05)***
Democracy (t-1)	1.1945 (1.61)	1.2170@ (1.80)*	1.2211@ (1.85)**	1.2294@ (1.88)*
GNI per capita (t-1)	1.0282 (2.47)**	1.0339 (3.08)***	1.0412 (3.59)***	1.0543 (4.12)***
GNI per capita squared (t-1)	.9989 (3.43)***	.9988 (3.89)***	.9987 (4.17)***	.9984 (4.67)***
GDP growth rate (t-1)	.9886 (2.47)**	.9879 (2.62)***	.9903 (2.19)**	.9894 (2.38)**
Linguistic Fractionalization		1.1148 (.84)	1.1859 (1.33)	1.1823 (1.30)
Ethnic Fractionalization	.8556 (.99)			
Religious Fractionalization	.7532 (2.04)**	.6935 (2.61)***	.7755@ (1.79)**	.7569@ (1.93)**
History (t-1)	1.0207 (14.67)***	1.0207 (14.56)***	1.0204 (14.60)***	1.0206 (14.59)***
Cold War	1.3594 (4.35)***	1.3661 (4.42)***	1.3535 (4.31)***	1.3583 (4.34)***
Population	1.3008 (12.90)***	1.2975 (12.62)***	1.2751 (11.50)***	1.2750 (11.50)***
Mountainous Terrain (log)			1.1163 (4.83)***	1.1135 (4.72)***
Urbanization (log)				.8809@ (1.68)*
Constant	.0748 (7.49)***	.0695 (7.74)***	.0639 (7.86)***	.0993 (5.44)***
Log Pseudolikelihood	-6769.566	-6769.759	-6735.231	-6733.111
Wald	859.19***	874.53***	898.03***	889.35
Observations	4037	4037	3924	3924

\*p value <=.1, \*\*p value <=.05, \*\*\*p value <=.01  
@ .95 confidence interval includes 1  
coefficient >1 direct relationship; coefficient <1 indirect relationship; Constant is baseline risk  
format: Incident Rate Ratio  
(Absolute Z-statistic Value)

**Table 5.2 Zero inflated negative binomial results**

<sup>106</sup> Democracy was significant with a .92 confidence interval.

Unless otherwise noted, the interpretation of findings is with regard to the negative binomial results in Table 5.1. The difference between the two models undermines the confidence in the effects of democracy, social determinants, and mountainous terrain. These differences will be addressed in the appropriate following paragraph. I begin with economic determinants.

### *Economic Determinants*

#### Wealth

Contrary to conventional wisdom, wealth increases terrorism. The relationship between wealth and terrorism, however, was not monotonic. There is a nuanced connection. The relationship was further clarified by the addition of the GNI per capita squared term. The significant and indirect relationship of the squared term to terrorism indicated the overall effect was an inverse U. States at the low end of the wealth spectrum suffer the least terrorism. The apex of terrorism is reached prior to the wealthiest states. The decline from the apex is, however, gradual. The squared term indicated a less than 0.1% decrease per unit of change. For practical purposes, the decline in terrorism may be difficult to discern in the short term. Per capita income outcomes were robust to alternative versions of the dependent variable, zero inflated negative binomial specifications, and the use of year dummies.

Wealth represents a less dynamic, longer term indication of economic conditions. Results imply abject poverty decreased terrorism compared to even the wealthiest states. Terrorist group claims of fighting for altruistic motives on behalf of the impoverished may be effective recruiting narratives, public relations, or psychological salves. They do not appear to have basis in objective conditions.



Relatively wealthy societies have more disposable income to divert to political objectives and terrorism. Wealth appeared to increase opportunity for terrorism overall. Eventually, wealth creates a mollifying satisfaction effect, enables better security, or both. The exact reasons wealth inspires terrorism remain unclear. The microprocesses require further study.

### Growth

Evidence supports the proposition higher growth retards terrorism. Growth rate was indirectly related to terrorism and robust to alternate dependent variables, zero inflated models, and year dummies. Growth rate results suggest near term perceptions of economic prospects matter as well as the more static conditions of overall wealth. If the future is promising, the incentive to risk supporting or participating in terrorism is less. If the current political system and regime are producing results, better to trust them than an unknown future under victorious terrorists.

With sustained growth, the depressing effect on terrorism is potentially substantial. At a 2-3% predicted reduction per unit increase, economic growth may correspond to noticeable reductions in terrorism. For example, a respectable and fortuitous 4% annual growth rate is predicted to depress terrorism by a corresponding 8-12% in a single year. Nonetheless, growth effects are short term. They require lengthy growth or decline for long term impact.

### Economic Synopsis

Both short economic performance and long term wealth impact the generation of terrorist events. Wealth, as measured by income per capita, exhibits an inverse U shaped relationship with terrorism. Prospects, as measured by economic growth rate, reduce

terrorism in the near term. A long term virtuous circle results from increased growth which in turn generates more income per capita. The transition process from poverty to high per capita wealth, however, means more rather than less terrorism.

The reverse process of economic decline is less clear. A death spiral relationship between widespread violence and negative growth is easily imaginable. Sustained economic decline, *ceteris paribus*, would eventually result in abject poverty which is an overall pacifying condition. An economic race to the bottom could be a formula for domestic tranquility, but few would seek poverty solely for the goal of reducing terrorism. The negative growth rates implicit in the path to poverty mean this transition process is likely to be bloody as well.

### *Political Determinants*

#### Democracy

Democracies are more victimized by terrorism than autocracies. Recall political determinants were measured trichotomously with dummy variables representing autocratic, anocratic, and democratic regimes. Autocracy was the base condition omitted from the models. Results indicate the change in terrorism compared to autocracy. Likened to closed regimes, most models predicted increases in terrorism of approximately 42%. Results were significant and robust to alternative measures of the dependent variable and year dummies. They were not robust to zero inflated negative binomial regression or the *Freedom House* alternative measurement.<sup>107</sup>

The failed significance of the *Freedom House* measurement introduced an element of doubt. Nonetheless, *Polity* is the most frequently used source for regime characteristics.

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<sup>107</sup> Results are available upon request.

There are apparent differences between the scales. The failure of the zero inflated technique likewise created doubt in democratic regime effects. Democracy was “significant” at the .1 or .05 levels, but the .95 confidence interval included 1 meaning the direction of the relationship was indeterminate. Of note, the .92 confidence interval allows the observer to conclude the relationship between democracy and terrorism is direct. Overall, the direct relationship between democracy and domestic terrorism is plausible and probable.

Democracy features political openness, free media, unfettered travel, high standards for conviction and incarceration, and restraints on security forces. These features benefit citizens but also provide opportunity for clandestine groups to practice terrorism. Likewise, the opportunity for peaceful political change in democracy may be a dual-edged sword. On the one hand, there is little need for citizens to practice antisystem violence to achieve goals. On the other hand, fringe groups could perceive little chance having their agendas enacted. Their political goals or ideological narratives may be unpopular, leaving true believers little choice but to employ alternative means. Terrorist violence is one of those alternative means.

### Anocracy

Hybrid regimes are prone to terrorism. Anocracy was both significant and directly related to increased terrorism. It was the single most substantive impact for a one unit change. Transitioning from an autocratic to anocratic regime was predicted to increase the incidence of terrorism by 83-107%, *ceteris paribus*. Results were robust to alternative versions of the dependent variable, zero inflated models, and year dummies. Once again, *Freedom House* measures were not significant.

The contingent political direction of anocracies suggests terrorist leaders exploit opportunities to shape the state in their image. Defective democratic processes combined with a partially constrained security apparatus and media are a dangerous cocktail conducive to political violence. Underdeveloped political institutions struggle to contain the volatile environment. In short, anocracies lack both the legitimacy of democracy - voluntary citizen acceptance of the political system - and autocratic Hobbesian-like instruments of compliance. Citizens, at least those potentially inclined to support terrorism, are neither satisfied nor resigned.

### Political Synopsis

Political regime outcomes suggest at least two factors strongly influence the occurrence of terrorism. First, effective security institutions matter. Effectiveness is a function of the capabilities of the security forces and the restraints upon them. Strong security reduces the opportunity for terrorism. Autocracies clearly face the fewest security restraints and democracies the most. Anocracies generally have the least security capability for both political and, speculatively, fiscal reasons. Second, political and institutional legitimacy have a pacifying effect. Democracies have strong legitimacy. Autocracies suffer a crisis of legitimacy (Huntington 1991), but compel reluctant citizen acceptance of conditions or fear induced domestic tranquility. Hybrid regimes lack strong legitimacy. They are frequently transitional systems with contingent futures. Overall, autocracies are the most secure from terrorism, followed by democracy. Anocracies possess a lethal mixture of conditions conducive to terrorism.

### *Systemic Determinants*

Controlling for other variables, the post-Cold War years were more peaceful. The Cold War was positively correlated with increased terrorism. It was robust to alternative versions of the dependent variable, a zero inflated model, and year dummies. Cold War maintained its significance and positive correlation in all models. This suggests competition under bipolar systems encouraged proxy warfare in the form of support for domestic terrorism. States suffered approximately a quarter more terrorism than they would have otherwise during the Cold War.<sup>108</sup> Adverse effects of post-Cold War unipolarity, if any, appear to be confined to transnational terrorism.

External resources, safe havens, or rhetorical support interfere in domestic processes. They represent relatively low cost methods of conducting warfare. Foreign governments can provide weapons, intelligence products, and technical tradecraft likely to sustain domestic terrorism. Powerful foreign governments may even direct domestic terrorists.<sup>109</sup> Conceivably, bipolar competition passively promotes terrorism even without deliberate interference. Alternative ideological systems encourage political pilgrims seeking to reorder their state into alignment with competitors.

### Systemic Synopsis

As a systemic condition, bipolarity produces more domestic terrorism than unipolarity. Speculatively, the impact of systemic power transitions may not be abrupt but evolve over time. The immediate post-Cold War years were more violent for many states than the Cold War era, particularly for the former Soviet Union and Yugoslavia. In

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<sup>108</sup> Or at least since 1970.

<sup>109</sup> To date there is little evidence to support foreign government control over domestic terrorists.

the near term, transition may provide opportunity for terrorism. The benefits of unipolarity occur over time. This is a subject for future research.

### *Social Determinants*

As previously discussed, ethnic and linguistic fractionalization are highly correlated. They were not tested in the same equation. Religious fractionalization was not highly correlated with either and was included in all models. Robustness was checked with the different versions of the dependent variable, zero based inflation models, and year dummies. In addition, alternative social identity data from Montalvo and Reynal-Querol and Desmet et al. were substituted for Alesina et al. data. Alternative social data are discussed in Appendix D.<sup>110</sup> Results from each of the social identities are examined separately.

### Linguistic Social Tensions

Linguistic fractionalization was directly related to terrorism and significant at the .01 level. The results were similar in Models 2 to 4. A unit increase in fractionalization predicted a 41-42% rise in attacks. The relationship held for one of the alternate dependent variables. The population using original country codes was robust.

Violent national political competition can be expected to focus the heart and mind, willingly or reluctantly, on deeply-rooted loyalties. Linguistic identities appear to be readily exploited by terrorists. Identity based terrorism concerns a rejection of the state by a portion of the population. It may also be a rejection of a portion of the population by those claiming to act out of concern for the state.

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<sup>110</sup> Linguistic fractionalization results were robust to both.

Caution should be exercised in the interpretation of linguistic fractionalization results. They were not robust in zero inflated models or with year dummies. Linguistic fractionalization was not robust to the dependent variable including only casualty-producing attacks. This was curious. Other independent variables maintained their usual significance, direction, and magnitude with casualty attacks.<sup>111</sup> There seems no readily apparent reason why linguistic identity motivated terrorism would be less violent. In addition, linguistic fractionalization was not significant in a model using only social determinants and control variables. It required the other independent variables to become significant.<sup>112</sup> A cautious approach would conclude the impact of linguistic fractionalization is undetermined.

### Ethnic Social Tensions

There is little evidence supporting ethnicity as a factor driving domestic terrorism. To the contrary, the evidence is in the opposite direction. Ethnic fractionalization was significant at the .05 level and inversely related to the incidence of terrorism.<sup>113</sup> Ethnic fractionalization was robust to all versions of the dependent variable, to include casualty-producing attacks, and to year dummies. Ethnic fractionalization was not robust to a zero inflated model.

These results suggest the distribution of ethnic identities matter. Ethnic fractionalization suppresses domestic terrorism. Plausibly, ethnically diverse states have solved the most centrifugal identity issues. They are more tolerant societies or have effective power sharing procedures. Alternatively, terrorist leaders or potential terrorist

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<sup>111</sup> There are roughly half as many casualty-producing events as the primary dependent variable.

<sup>112</sup> This was not the case for ethnic fractionalization.

<sup>113</sup> Ethnic fractionalization results are only depicted in model 1 of Table 5.1. There was little change when it was substituted into Model 3 and 4.

leaders may simply abandon the utility of ethnic identity in places where no group is likely to be dominant. Because of the zero inflated results, the ethnic fractionalization results are somewhat weak.

### Religious Social Tensions

Religious social tensions were not predictive of terrorism. Religious fractionalization was not significant in any model. The results were robust, in their predicted irrelevance, to alternate versions of the dependent variable and time dummies. Zero inflated Model 1 and Model 2 were significant at the .05 level and indicated religious fractionalization was indirectly related to terrorism. Similarly, alternative data from Montalvo and Reynal-Querol indicated religious fractionalization was significant and decreased terrorism.<sup>114</sup>

Refer to Appendix D.

Globally, the state has replaced religion as the primary source of identity. Terrorist recruiters exploit other identities. Religion can be, however, an effective individual or group level narrative. The effectiveness of the narrative does not rely on the societal distribution of religious groups. The high end of the religious fractionalization scale may indicate tolerant societies where religious identity has lost its divisive attributes. The low end of the scale may represent homogenous societies where religious minorities have been assimilated or driven out. However, based on the zero inflated technique and the alternative data from Montalvo and Reynal-Querol, these results bear additional scrutiny. Additional research on the impact of religious fractionalization would be prudent.

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<sup>114</sup> There are substantial differences in religious fractionalization numbers between Alesina et al. and Montalvo and Reynal-Querol.



## Social Synopsis

Social determinants affect terrorism differently. Linguistic diversity increases the quantity of violence, but the evidence is debatable. Ethnic diversity decreases the incidence of domestic terrorism. Religious diversity does not appear to matter. Future research should address the processes, if any, by which social fractionalization impacts domestic terrorism. Social determinants were often not robust to alternative specifications. It would be premature to predict their influence on terrorism. Speculatively, social determinants may only be pertinent for certain types of domestic terrorism. For example, separatist terrorism may be more likely in linguistically diverse states. Ethnic and religious fractionalization could dampen terrorism. The effects of polarization may be different than the effects of fractionalization.

## *Population*

Population was, significant, substantive, and directly related to terrorism in all models. It was robust to alternative versions of the dependent variable, zero based inflation, and year dummies. The predicted increase in the base incidence rate hovered between 21-23% per unit increase in population. Populous states suffer more terrorism.

Conventional wisdom is credibly correct. It is difficult for governments to control and monitor huge numbers of people. Large populations are more likely to be dispersed across considerable distances. The sheer scope of the problem impedes security and crime suppression. Singling out those responsible for supporting or conducting terrorism is more challenging. Potential terrorist recruitment pools are larger. The larger pool means groups can pick those most likely to be disciplined, skilled, and survivable.

Populous states also have more varied and countervailing societal issues. By volume, regimes are hard pressed to satisfy competing interests. More population increases the probability some group will reject the legitimacy of the state. Diverse populations could also be more likely to contain groups identifying primarily with foreign interests. Extreme disaffection is more likely under these conditions.

### *History*

The incidence of terrorism in the previous year is correlated with current year terrorism. The result was significant at the .01 level and directly related to violence in all models. History was robust to the alternative dependent variables, zero inflated models, and year dummies. Interestingly, a history of terrorism does not increase the odds ratio of current year terrorism very substantively. The predicted increase was between 0.5% and 0.6% over the base incidence rate. Recall history was measured with a one year lag of the dependent variable. Results using additional lags are discussed in Appendix E.

While successful terrorist campaigns are difficult to eradicate and can be persistent, they tend not to find the theoretical spark to ignite masses into revolution. Terrorist groups survive their first year, but they do not become more prolific. Terrorist leadership frequently judges the masses need a "propaganda by the deed" example to "wake up" (e.g. Bakunin 1870, Piscane 1857). In other words, a demonstration effect will bring about their envisioned revolution. Terrorism breeds terrorism, but it does not correlate with explosive growth. History results are supportive of either or both of the following logics.

First, terrorist group resources, both human and physical, are relatively small. Terrorist groups wishing to preserve their operatives plan violence carefully. Meticulous

planning implies increased time between attacks.<sup>115</sup> The availability of weapons or explosives could be constrained. The capability to rapidly expand violence could be limited simply by the inability to practically do so.

Second, violence could drive increased provision of security. Enders and Sandler (1999, 155-56) posited terrorism resulted in public demand for security crackdowns. States obliged public demands by dedicating additional resources. Terrorists reacted to increased security by curtailing activity to avoid arrest.

### *Mountainous Terrain*

Mountains were not significantly related to terrorism. Recall mountainous terrain was a log transformed variable. The robustness version, measured in straight percentages, was not significant either.<sup>116</sup> Caution, however, should be exercised in interpreting the results.

First, mountainous terrain was significant at the .01 level and directly related to terrorism in the zero inflated models. The difference between the inflated and negative binomial techniques was stark. Future research should explore why this is the case.

Second, mountainous terrain can be measured in several ways. Not all features of mountains are equally relevant to terrorist survivability. Fearon and Laitin's (2003b) mountain data was based on original work by geographer A.J. Gerard. Their dataset contained 139 states, 22 of which were provided by Fearon and Laitin and 107 from Gerard. Fearon and Laitin calculated the log of the elevation difference between high

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<sup>115</sup> Even groups using suicide tactics still plan, but only their most useful cadres need be preserved.

<sup>116</sup> Models 3 and 4 reflect mountains were significant at the .1 level, but the 95% confidence interval included 1. The direction of the relationship was indeterminate and therefore not significant.

and low points to determine the percentage of mountainous terrain (2003a, 3). It is unclear is how Gerard's percentages were calculated.

In the context of terrorism, mountainous terrain must account for a number of factors. Elevation difference is certainly one of them. However, elevation, slope, area, foliage, and the availability of water are others. Many combinations of these factors could degrade or increase terrorist survivability. A more precise and relevant measure could better tease out any substantive impact of mountains.

### *Urbanization*

Urbanization, measured as either a log transformed variable or straight percentage, was not significant. Alternative dependent variables, a zero inflated model, and a straight percentage measurement of urbanization made no difference. For all the infamous violence attributed to urban terrorists, the association appears more anecdotal than real. Although the most famous incidents occur in cities, the romance of urban terror by writers such as Carlos Marighella (2008 [1969]) does not hold up under further scrutiny. Overall, urbanization is not significantly correlated with domestic terrorism.

Urban venues have advantages such as almost guaranteed press coverage and a wide selection of symbolic and efficacious targets. In the long term, cities may have countervailing disadvantages. Cities increase the operational security risk to terrorist groups. Informers have better access to the outside world and security force eavesdropping is easier. Security forces can react more quickly to tips and make arrests. Government agents could be more easily infiltrated into the local populace than in rural settings. The reputation effect of urban settings could simply be reporting bias.

### *Results versus Conventional Wisdom*

In general, conventional wisdom asserts the structural determinants of transnational and domestic terrorism are synonymous. This conclusion is based on theories of causal equivalence and empirical evidence based on entirely transnational data or data that fails to differentiate between the two types. When tested with strictly domestic terrorism data, the evidence offers both confirming and some disconfirming indications. Table 5.3 summarizes the results compared to conventional wisdom.

<b>Variable</b>	<b>Relationship</b>	<b>Conventional Wisdom from mostly Transnational Testing</b>
Wealth	Inverse-U	Indirect
Growth	Indirect	Not Significant
Anocracy	Direct	Direct
Democracy	Direct	Direct
Cold War	Direct	N/A
Linguistic Fractionalization	Direct*	Direct
Ethnic Fractionalization	Indirect*	Direct
Religious Fractionalization	Not Significant*	Not Significant
Population	Direct	Direct
History	Direct	Direct
Mountains	Not Significant	Direct
Urbanization	Not Significant	Direct
*Results lack robustness		

**Table 5.3 Results and Conventional Wisdom**

Economic determinants do not conform to conventional wisdom. The inverse-U effect of wealth is more nuanced than the direct relationship common in literature. This research confirms the inverse-U findings of Lai (2007) and Freytag, et al. (2011) but

disconfirms a monotonic relationship between wealth and terrorism. Poverty is a questionable explanation for domestic terrorism.

In contravention to conventional wisdom, I found short term economic performance mattered. Growth rate was indirectly related to domestic terrorism. In a way, the disparate results are unsurprising. Most existing research measured the effect of economic growth on being the victim of transnational terrorists. There is no readily apparent reason why that would be important for transnational terrorists.

Political determinants matched conventional wisdom. Anocracy and democracy are more conducive to terrorism. One may conclude that autocracies have effective security that suppresses victimization. Terrorism appears where it has opportunity. Although democracy is less susceptible to terrorism than anocracy, both regime types lose out to autocracy. Recall that transnational literature is weighted toward the target of attacks. It is an open question as to whether regime types are equally likely to generate transnational and domestic terrorists.

The bipolar conditions of the Cold War increase terrorism over the unipolarity of the post-Cold War years. The paucity of empirical research on systemic determinants precluded identifying an existing conventional wisdom. These results suggest systemic factors do intrude into domestic political violence.

Compared to conventional wisdom, social determinants provided both confirmatory evidence and some surprises. As in some literature, linguistic fractionalization was directly related to domestic terrorism. In accord with literature, religious fractionalization was found unrelated to domestic terrorism. Unlike conventional wisdom, ethnic fractionalization was indirectly related to terrorism. This suggests

terrorist leaders consider the societal distribution of groups. Where there are no dominant ethnic groups, identity based terrorism loses its appeal. Nonetheless, social determinant results were not robust.<sup>117</sup> These findings are very suspect due to a lack of robustness to alternative specifications.

Among control variables, population and history conform to expectations. Populous states are harder to control. A terrorist group is hard to eradicate in a single year. I found mountainous and urban terrains unrelated to domestic terrorism. This defied conventional wisdom. The difference may be plausibly explained due to the media requirements of transnational terrorists. Cities simply have the media coverage needed to attract international attention. Domestic terrorists may have a lower threshold for garnering publicity.

### *Casualty Producing Attacks*

Enders and Sandler (2000, 2002) and Enders, et al. (2011) found only casualty-producing attacks form a coherent pattern for transnational terrorism. These results suggest that may not be the case for domestic terrorism. Whether terrorist events were measured as casualty-only attacks or casualty and noncasualty events combined made little difference. Future research should investigate if domestic noncasualty attacks exhibit a different pattern than casualty-producing terrorism.

### **Sample Cases**

The findings can be demonstrated through examination of actual terrorist campaigns. Patterns of terrorism in India and Guatemala are plausibly explained by the

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<sup>117</sup> In a model using only social determinants and control variables, only ethnic fractionalization was significant. The other social determinants required additional variables or a zero inflated model to become significant.

research results. Structural conditions shaped the environment for terrorist leaders and potential leaders. Although neither case featured all determinants equally, they are instructive nonetheless.

### *India*

Several structural conditions in India are conducive to terrorism. In particular, the change in per capita income, regime type, linguistic fractionalization, and population may explain the increase in terrorism. Per capita income increased steadily in constant dollars. It can be estimated at \$630 for the 1970s.<sup>118</sup> In 1980, it stood at \$1002 and averaged \$1019 for the decade. It had improved roughly 400% from the 1970s to \$2804 in 2010. That year, the World Bank ranked India number 153 in Purchasing Power Parity, roughly the 75th percentile. India still qualifies as a poor country, but it has made impressive gains relative to its starting position. The decade totals of terrorist attacks increase in concert with improvements in per capita income.

Per the *Polity* measure, India was a democracy every year from 1970 to 2010. Democratic regimes are predicted to allow for and increase the amount of terrorism, *ceteris paribus*. Terrorists appear to be enabled by Indian democracy.

Ethnic fractionalization is relatively low at .42 on a 0 to 1 scale. The models predict it would have little influence on terrorism. On the other hand, linguistic fractionalization is much higher at .81 and is predicted to increase terrorism. Since 1970, the GTD identifies 61 different groups as perpetrating attacks. Of those, at least 13 may be

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<sup>118</sup> Figures for 1970 through 1979 are missing. I estimated \$630 as a plausible average per capita income for the 1970s.



described as identity based separatists.<sup>119</sup> Plausibly, the prevalence of separatist terrorism in India may be linked to linguistic fractionalization.

India is the second most populous country in the world, with 1,224,000,000 people in 2010. Other factors aside, the models predict India would suffer more terrorism based solely on population. Populous states are more difficult to police.

The GTD indicates India is a hotbed of terrorism. At its poorest in the 1970s, it recorded 13 domestic terrorist events. It suffered 941 during the 1980s and 1145 during the 1990s. Since 2000, there have been 1466 domestic terrorist attacks. Of the postulated factors driving terrorism, only per capita income and population increased along with the number of attacks. Democracy and linguistic fractionalization were constant. To be sure, not all structural conditions predicted more violence. India has clearly been more violent since the Cold War ended. There is no clear evidence annual economic growth had the predicted effect on the annual number of incidents.

Years	Per Capita Income	Growth	Regime	Linguistic Fractionalization	Ethnic Fractionalization	Cold War	Total Attacks
1970-1979	\$630*	2.93%	Democracy	.81	.42	Y	13
1980-1989	\$1019	5.69%	Democracy	.81	.42	Y	941
1990-1999	\$1308	5.63%	Democracy	.81	.42	N	1145
2000-2010	\$2072	7.36%	Democracy	.81	.42	N	1466
*Data not available - estimate							
Groups	61; at least 13 separatist						
Population	1,224,000,000						

Figure 5.1 Selected statistics - India

<sup>119</sup> This is based on my coding and interpretation of identity groups. Alternative classifications are plausible. For example, several identity groups may also be described as Leninists or Maoists. Given the reciprocal violence between the Leninists and Maoists reflected in the database, I judged identity as probably more explanatory than ideology.

The interactions among structure conditions are complex and require further study. However, all factors considered, one would predict an even bloodier near to midterm future for India if per capita income continues to rise and it does not implement draconian restrictions to civil liberties.

### *Guatemala*

The Guatemalan case features different structural determinants. Regime type and Cold War plausibly explain the presence of terrorism. Per capita income, social fractionalization, and population may explain its absence. Guatemala suffered considerable terrorism for its size. The transitions between anocracy and autocracy are illustrative.

Guatemala was an anocracy from 1970 to 1981 and 1985 to 1995. Inspection of the data indicates a downward trend in violence as Guatemala regressed to autocracy. The first year of dictatorship, 1982, there were 234 attacks. The next two years the violence declined to 45 and 36 attacks respectively. The transition to autocracy had dramatic impact on the number of attacks, particularly if lagged a year after autocracy was implemented in 1982. There was a roughly fivefold decrease in the number of attacks over a 2 year period from 1983 to 1984 compared to the last 2 years of anocracy in 1980 to 1981. With the transition from autocracy back to anocracy in 1985, the number of attacks quickly began to rise. Guatemala remained terror prone through 1995. Terrorism trended lower beginning in 1996, the first year of democracy, and fell to 0 by 1998. Over the 15 year period since 1996, there have only been 50 terrorist attacks recorded in Guatemala. Of those, 41 are accounted for in 1996 and 1997.

A Cold War conflict erupted in the region between 1979 and 1990. In Nicaragua, the United States supported *contra* insurgents and the Cubans and Soviets supported the *Sandinistas*. In El Salvador, the United States supported the government and accused the Nicaraguans, Cubans, and Soviets of supporting the *Farabundo Martí National Liberation Front* (FMLN). The competition spilled over into the regional states of Honduras and Guatemala. Between 1970 and 1978, there were 30 domestic attacks in Guatemala. Beginning in 1979 - the year conflicts ticked up in El Salvador and Nicaragua - domestic terrorism increased substantially. There were 30 attacks in 1979 alone. During the economic contractions of the 1980s and contemporaneous escalation of regional Cold War competition, terrorism was much higher than in the 1970s. Violence remained high for approximately 4 years after the regional conflict ended, but the lingering impact of the Cold War plausibly explains this.

Per capita income was \$4342 in 1980 but declined or stagnated until 1989.<sup>120</sup> It trended modestly higher beginning in 1990 with intermittent years of stagnation. Per capita income figures are unavailable for the 1970s but economic growth was fairly strong with an annual average of 5.86%. In the 1980s, growth averaged 0.97%. The 1990s averaged 4.07% and the 2000s had 3.37% annual growth. The impact of economic factors is unclear, but weighted toward holding terrorism in check absent regional Cold War conflict.

Ethnic and linguistic diversity hovered around midpoint on the scale. Ethnic fractionalization is .51 and linguistic fractionalization is .46. The models predict little influence for social determinants in Guatemala. The GTD identifies 20 groups carrying out domestic terrorist attacks in Guatemala. The most active were the Rebel Armed

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<sup>120</sup> The statistics in this paragraph are based on different year groupings than Figure 5.2.

Forces of Guatemala (FAR), the Guerrilla Army of the Poor (EGP), the *Mano Blanca*, the Secret Anti-Communist Army (ESA), the Guatemalan Labor Party (PGT), the Revolutionary Organization of People in Arms (ORPA), the Anti-Communist Commando of the South, the 31 January People's Front (FP-31), and the Guatemalan National Revolutionary Unity (URNG). Among these groups, separatist politics are muted compared to left and right extremes.

All told, the structural factors were countervailing. Wealth did not change appreciably. With the exception of the 1980s when it was often negative, annual economic growth was respectable. The country varied regime types with autocracy decreasing domestic terrorism from its high point. There would be little predicted influence for identity fractionalization. Population was small but the Cold War conflict was in full swing in Central America.

Years	Per Capita Income	Growth	Regime	Linguistic Fractionalization	Ethnic Fractionalization	Cold War	Total Attacks
1970-1978	\$3900*	5.99%	Anocracy	.46	.51	Y	30
1979-1981	\$4037	3.04%	Anocracy	.46	.51	Y	493
1982-1984	\$3358	-1.87%	Autocracy	.46	.51	Y	78**
1985-1990	\$3094	2.34%	Anocracy	.46	.51	Y	191
1991-1995	\$3235	4.28	Anocracy	.46	.51	N	249
1996-2010	\$3527	3.55%	Democracy	.46	.51	N	50
*Data not available - estimate; **does not include 1982							
Groups	20; 0 separatist						
Population	14,000,000						

Figure 5.2 Selected statistics - Guatemala

Guatemala benefitted from moderately positive annual economic performance, the end of the Cold War, modest linguistic fractionalization, and a transition from anocracy to democracy. The short period of authoritarianism drove down terrorism.

Over the research time frame, Guatemalan per capita income can best be described as steady. Guatemala is a small state, with only 14,000,000 people in 2010. Given its relative poverty and small population, the models predict low levels of future terrorism.

## **Summary**

Commonly postulated determinants of terrorism were empirically tested with solely domestic terrorism data. The impact of economic, political, systemic, social, and control variables were assessed using negative binomial regressions. The base model was further tested for robustness using alternative dependent variables, alternate measures of independent and control variables, zero inflated negative binomial regression, and year dummies.

The impact of economics on terrorism is nuanced. Wealth as measured by per capita income increases domestic terrorism. However, the squared term of wealth had a negative effect. This suggests the overall effect of wealth on terrorism is an inverse U relationship. Somewhat paradoxically, short term economic growth depressed terrorism. This suggests incentives for terrorism are gauged in both short term economic performance and societal wealth. Anocracy was the political regime type most conducive to terrorism, followed by democracy. The Cold War systemically encouraged terrorism. Among social determinants, linguistic diversity encouraged terrorism while ethnic fractionalization reduced it. Religious social tensions were not structural determinants of terrorism. Overall research conclusions and areas for future inquiry are addressed in Chapter 6.

## CHAPTER 6

### CONCLUSIONS

The New American Patriot will be neither left nor right, just a freeman fighting for liberty. The new politics of America is liberty from the NWO [New World Order] Police State and nothing more.

Louis Beam<sup>121</sup>

This dissertation examined structural determinants of domestic terrorism in the modern era. Empirical research on terrorism is too rare, and almost nonexistent in its domestic variety. Before now, literature has been primarily anecdotal and case specific. This project scientifically explored domestic terrorism, filling a current gaping void.

The definition and operationalization of terrorism was discussed at length. This unfortunate but necessary exercise is topically common. I defined *domestic terrorism* as the premeditated use or threat to use violence by individuals or subnational groups against noncombatants in order to obtain a political or social objective through the intimidation of an audience beyond that of the immediate victims in which the nationality of the perpetrators, victims, and attack location match. As observed by Tilly (2004, 8), definitions are neither true nor false but "useful definitions should point to detectable phenomena that exhibit some degree of causal coherence."

Research results suggest three things. First, domestic terrorism is a distinct phenomenon at least partially independent from transnational terrorism. In many ways, this is unsurprising. Second, several structural determinants clearly matter. However, a political economy explanation stands out. Political and economic determinants were robust to several alternative specifications. Third, domestic terrorism merits considerably

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<sup>121</sup> Klansman and Aryan Nations theorist quoted from Laqueur (2004, 478-79).

more research. This dissertation revealed many promising avenues for future exploration.

## **Contributions**

By design, the GTD is tolerant of Type 2 errors, preferring to give researchers the flexibility to determine more restrictive criteria. This project created a cross-national domestic terrorism dataset from 1970-2010 derived by applying definitional criteria to the GTD database. For the purposes of transparency, the construction of the population of events was addressed in detail in Appendix A. Hopefully, the new dataset is a beginning step toward more scientific research on domestic terrorism.

Alesina, Devleeschauwer, Easterly, and Kurlat (2003) social identity data was supplemented by forward and backward expansion to account for dead and newly emergent polities. By using comparable sources, missing data was largely eliminated. The supplemented dataset supports future research by mitigating the missing data problem.

Most importantly, structural determinants of domestic terrorism were scientifically analyzed on a comprehensive basis. Using cross-national time-series and constructively valid data, frequently posited economic, political, systemic, and social variables were empirically tested. The study both confirmed and disconfirmed conventional wisdom.

## **The Approach**

In Chapter 2, the seven recurring definitional attributes of who, to whom, for whom, what, why, how, and psychological effect were described. Fearful psychological effect and how (premeditation) were unnecessary for operationalization. The remaining

attributes were converted into criteria on perpetrators, targets, audience, violence or threats, and motives. To separate transnational from domestic terrorism, three additional criteria on attacker, victim, and location nationalities were added.

Chapter 3 reviewed the literature on the structural determinants of terrorism. The preponderance of findings were described as conventional wisdom. Economic explanations favored poverty as driving terrorism. Political research predicted autocracy to be indirectly related to terrorism while anocracy and democracy were correlated with more terrorism. Research on systemic effects is rare, with no clear consensus on the impact of bipolarity or unipolarity on terrorism. Social tension literature is divided among three forms of identity. Linguistic and ethnic diversity were predicted to increase terrorism while religious fractionalization is believed to be unrelated to it.

Chapter 4 outlined the research design. The research used a negative binomial regression with random effects. For robustness, the models were tested with a zero inflated binomial regression, variant versions of the dependent variable, and year dummies. Independent and control variables used alternative measures of regime types, social fractionalization, mountainous terrain, and urbanization.

## **Findings**

As presented in Chapter 5, results suggested the relationship, or lack thereof, between structural determinants and domestic terrorism. The summary results are reproduced below in Table 6.1. Conventional wisdom was often confirmed but the research also yielded some surprises. Terrorism is complex. As there were significant findings for many determinants, it calls into doubt the sufficiency of monocausal explanations.



Variable	Relationship	Conventional Wisdom from mostly Transnational Testing
Wealth	Inverse-U	Indirect
Growth	Indirect	Not Significant
Anocracy	Direct	Direct
Democracy	Direct	Direct
Cold War	Direct	N/A
Linguistic Fractionalization	Direct*	Direct
Ethnic Fractionalization	Indirect*	Direct
Religious Fractionalization	Not Significant*	Not Significant
Population	Direct	Direct
History	Direct	Direct
Mountains	Not Significant	Direct
Urbanization	Not Significant	Direct
*Results lack robustness		

**Table 6.1 Summary Results**

Nonetheless, a political economy cause and effect relationship is likely. Economic conditions were robust to alternative dependent variables, measurements, and regression techniques. Regime types were fairly robust as well, with some question on the impact of democracy. Should there actually be systemic inhibitors of terrorism - the zero inflated assumption - then democracy may not, in fact, matter. Social determinants were weakly robust. Conceivably, they may be more salient for separatist terrorism. The Cold War has gone and the world is transitioning to a multipolar configuration. These results have important implications for policymakers.

## Policy Implications

The most obvious implications are not necessarily useful or desirable. At face value, civil liberties provide opportunity for terrorism. Their suspension is not an appealing antidote to domestic violence. Palatable policy choices must be more nuanced. The results are also somewhat opaque on the causal connection between policy and desired outcome. The microprocesses of terrorism remain to be discovered.

There are many reasons to pursue economic development. Reducing domestic terrorism is not one of them. Wealth and short term growth impact terrorism differently. There is little reason to believe economic development, in isolation, results in less domestic terrorism. Wealth has an inverse U relationship with terrorism. Until the apex of the inverse U is reached, wealth increases terrorism. Policymakers pursuing economic development should do it in full knowledge it will not diminish terrorist violence. To account for the mitigating effect of short term growth, officials should stress economic good news and highlight the economic consequences of terrorism.

Next, anocratic governments should strive to develop legitimate institutions and rule. This may require painful efforts to combat patronage and corruption. It requires constraint toward what may be an openly hostile media. The transition to democracy will reap antiterrorist rewards over time. Transition to autocracy would potentially reduce terrorism even more but is normatively abhorrent.

Anocracies and democracies can both take steps to lessen the enabling aspects of the political environment. States should professionalize security forces and intelligence organs. Skilled policing is more likely to succeed against terrorists and avoid antagonizing the public. Realistically, this may require resources many states will be

hard pressed to find. Liberal institutions and legal restraints must be maintained. Law should be modernized to keep abreast of new technology and minimize its exploitation by terrorists. For example, communication technologies have largely made wiretap laws irrelevant. Failure to adapt could be dangerous. The opportunity for terrorism will remain. With improved security, however, its costs to practitioners will escalate.

The negative aspects of linguistic diversity should be mitigated. Using repression to encourage monolingual outcomes is likely to backfire. One need only look to the Kurdish PKK response to Turkish attempts to do so. Societies could pursue incentives analogous to Adam Smith's economic *hidden hand*. For example, the United States has been largely successfully assimilating diverse waves of immigrants without overbearing state involvement. There was no need to establish an official language. Old languages simply disappeared over time. Encouraging a *lingua franca* may reduce antagonisms. If that is impractical, official multilingual requirements, similar to the Canadian model, could reduce tension. Official and unofficial barriers to ethnolinguistic advancement and participation should be abolished.

## **Future Research**

Domestic terrorism remains under-explored and many new research avenues are available. I will focus on five with the most potential benefit. First, each significant finding may be disaggregated for processes linking cause and effect. For example, I found democracies suffer more terrorism than dictatorships. Is it because fringe groups are frustrated by the political process, personal freedoms enable mischief, a postmodernist malaise develops, or some other reason? These questions persist. If wealth encourages terrorism, is it because of competition, maldistribution, disposable

income, or revulsion at consumerism? When and why does wealth begin to moderate the occurrence of terrorism? Exactly how do systemic factors result in more domestic terrorism? Microprocesses bear considerably more investigation.

Second, future research needs to determine if conditions generating terrorists differ from those encouraging victimization. The question is of immediate import. To date, literature is considerably weighted toward victimhood explanations.<sup>122</sup> If the explanations are identical, the problem is considerably simpler. If causation differs, policies implemented to combat victimhood may generate more terrorists. As George (1993) observed, in the real world *ceteris paribus* never applies.

Third, the accuracy and validity of both domestic terrorism and social identity data require improvement. The GTD is a giant step forward in data completeness and availability. My own efforts to refine the data were limited and tentative. There is room for considerable progress. The same holds for social identity data. In particular, the religious identity data of Alesina et al. and Montalvo and Reynal-Querol yielded substantively different summary statistics and starkly dissimilar outcomes. Both sources are widely used, but which is more constructively valid?

Fourth, Enders and Sandler (2000, 2002) and Enders, et al. (2011) found only casualty-producing attacks reflected a coherent pattern for transnational terrorism. This research suggests casualty and casualty-free attacks combined produce discernible patterns. Models using the alternative dependent variable limited to casualty-producing attacks also revealed discernible patterns. Would a variable using only casualty-free

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<sup>122</sup> This is somewhat understandable. Events such as attacks are observable. Terrorist numbers are much harder to observe.

attacks expose perceptible correlations? If it does, then why are transnational and domestic violence different?

Finally, does the salience of social diversity hold equally for transnational and domestic terrorism? Speculatively, the answer is “no.” Domestic terrorists focus on, borrowing from Muslim Brotherhood philosopher Faraj (1986), the “near enemy.” One might expect ethnic and linguistic fractionalization to be less prominent for generating transnational terrorists. The near enemy lives in the neighborhood. Religious identity, however, is speculatively weighted more heavily for transnational terrorism. Current Islamist based terrorism travels widely. Contemporary literature appears to be evenly split on the subject.

## **APPENDIX A**

### **OPERATIONALIZING EVENTS**

Domestic terrorism data is largely unavailable. One of the contributions of this research is its modification, expansion, and operationalization of the Global Terrorism Database (LaFree and Dugan 2011a) to produce a dataset useful for large  $n$  research. Transparency requires detailing the process and paradigm used to derive the new dataset. This will allow other researchers to judge its construct validity, strengths, and flaws.

#### **Criteria**

Recall terrorism has seven recurring definitional attributes - perpetrators, targets, audience, violence or threats, motives, premeditation, and psychological effect.<sup>123</sup> In addition to these attributes, isolating domestic terrorism required interjecting perpetrator, target, and location nationalities. Each event must be filtered through these conceptual criteria. Each criterion introduces uncertainty in the translation of a complex and often murky reality into a conceptual category.

The GTD codebook assigned values to ninety-eight different variables. GTD used three "attributes" and three "criterion" as database inclusion criteria. Inclusion required all three attributes of intentionality, violence, and subnational actors (LaFree and Dugan 2011b, 5). Additionally, an incident had to meet at least two of these three criteria.

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<sup>123</sup> Psychological effect was assumed inherent to terrorist violence.

1. The incident must be directed toward a political, economic, religious, or social goal.
2. The incident must be intended to influence an audience larger than the immediate victims.
3. The incident must violate international humanitarian law.

Original coding contained some inaccurate and questionable coding. In those cases, or if the original entries could be made more useful, they were recoded. In particular, there were widespread anomalies in humanitarian law violation coding (3 above).<sup>124</sup> To correct for humanitarian law discrepancies, I replaced that criterion with a target/victim type variable.

Three of the database variables were useful for separating the domestic from transnational population - incident location, nationality of target/victim, and target/victim type. GTD did not record the nationality of the perpetrators. Therefore, I researched and added a perpetrator nationality to the database.<sup>125</sup>

For ease of reference, the attributes, criteria, and variables are relabeled below as nine criteria. All are hereafter referred to as criteria.

- Criterion 1: the perpetrators of the incident must be subnational actors.
- Criterion 2: the incident must affect a noncombatant target type in violation of international humanitarian law.<sup>126</sup>
- Criterion 3: the incident must be intended to influence an audience larger than the immediate victims.
- Criterion 4: the incident must entail some level of violence or threat of violence - including property violence as well as violence against people.
- Criterion 5: the incident must be directed toward a political, economic, religious, or social goal.
- Criterion 6: the incident must be intentional – the result of a conscious calculation.
- Criterion 7: the state/nationality of the incident location.
- Criterion 8: the nationality of the target.

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<sup>124</sup> Combatant and noncombatant targets appeared miscoded on numerous events. A review by an experienced law of war attorney confirmed the author's interpretation premises. Any mistakes are the author's.

<sup>125</sup> Comparison to the top 20 groups located by Kis-Katos, et al. (2011) indicated 100% agreement.

<sup>126</sup> Defined as anything except police or military targets.

Criterion 9: the nationality of the perpetrators.

These criteria correspond to the definitional attributes. Failure of any criterion from 1-6 removed an event from the population. Criteria 7-9 concern classifying events as domestic or transnational. Any mismatches among them made the attack transnational (Enders, et al. 2011, Hoffman 2006, Mickolus, et al. 2003b) and also removed it from the population. Table A.1 indicates event filtering criteria.<sup>127</sup>

Attribute	Filtering Criteria
Subnational groups or individuals	Criterion 1
Noncombatant targets	Criterion 2
Audience beyond immediate victims	Criterion 3
Violence or Threats	Criterion 4
Political or social objective	Criterion 5
Premeditation	Criterion 6
Location	Criterion 7
Target Nationality	Criterion 8
Perpetrator Nationality	Criterion 9

**Table A.1 Definitional attributes and corresponding criteria**

There were two steps in creating the population. The first was classifying an attack as an act of terrorism. Events were screened through criteria 1-6 to determine if they were terrorism. As detailed below, criterion 1, 2, 3, and 5 required extensive interpretation.

GTD effectively filtered for criterion 4 and 6 and they merited little scrutiny. The second

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<sup>127</sup> Enders et. al. (2011, 322) eliminated events that did not meet criteria 2, 3, or 5 (as do I) and an additional variable titled Doubt Terrorism Proper. However, they did not recode any of the criteria. Due to database coding anomalies, especially with regard to humanitarian law, this approach is too insensitive. Kis-Katos et. al. (2011) did not filter GTD events on any criteria and I found this approach not sensitive enough. As Enders et. al. and Kis-Katos et. al. used the 2007 version of the data and my filtering criteria differed, there is no direct comparison between our populations. GTD databases were refined with their 2007, 2010, and 2011 releases. Superseding databases did not merely update incidents; they both added and subtracted incidents for all years. For example, there were overall 7 deletions and 1008 additions for 1970-2007 between the 2010 and 2011 versions. Differences in number of incidents were aggregate and no attempt was made to determine if individual events matched from one version to the other. Between 1970-2007, Enders et. al. had a confirmed and ambiguous domestic event population of 46,413, Kis-Katos et. al. had 70520, and my population is 57758 (63407 through 2010).



step was separating domestic from transnational attacks. Events were screened through criteria 7, 8, and 9 to determine their international or domestic nature. The two step process is depicted in Figure A.1 and Figure A.2.

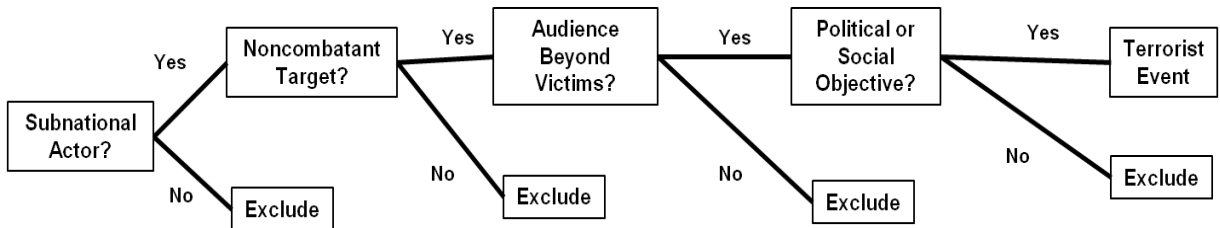


Figure A.1 Categorizing Terrorist Events

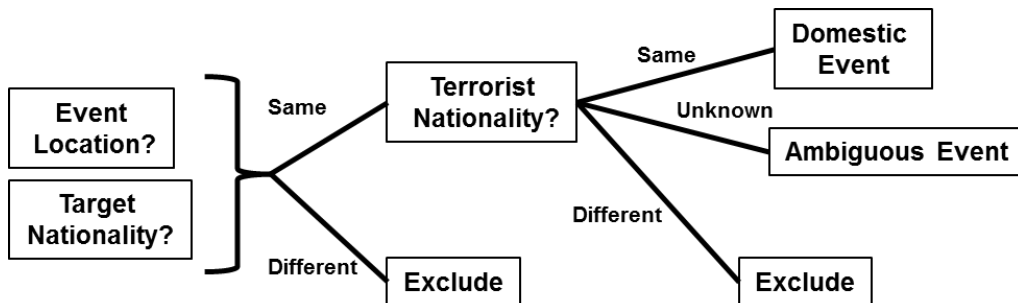


Figure A.2 Categorizing Domestic Events

### Is it Terrorism?

The GTD was assembled by different companies, using different coders, and different coding instructions. The long lifespan of the data gathering process undoubtedly necessitated several changeovers in personnel. A degree of coding inconsistency was unavoidable. Original coders were broadly successful in interpreting sparse information. Wide latitude was given to their original judgment.

Nonetheless, inspection of the database revealed coding inaccuracies that could not be easily forgiven. Specifically, information in event summaries was not completely incorporated into perpetrator descriptions. Differing country codes were used for the

same polity. Interpretation of humanitarian law was frequently questionable. Missing target country codes were often attributable. Interpretation of the goals and audience criteria were inconsistent. In addition, new information emerged that was not available at the time of coding. Paradigmatic and construct transparency require specificity. In an effort to achieve it, detailed criterion interpretation follows.

### *Subnational Groups or Individuals*

Terrorists must be subnational groups or individuals. Chapter 2 rejected the possibility of states and terrorism being synonymous. As expected in the shadowy world of terrorism, shades of gray obscure clear black and white categorizations. Interpreting reality was dubious in four areas - state sponsored terrorism, false flag state terror, rogue employees of the state, and lone wolf perpetrators.

States surreptitiously use terrorist groups as instruments of foreign policy. Many argue nominally independent groups act at governmental direction. This would make them *de facto* arms of the state. If states cannot commit terrorism, attacks by these groups would be excluded. For example, the Abu Nidal Organization (ANO) was frequently identified as a terror for hire organization. It conducted operations at the behest of Libya, Iraq, and perhaps others (Hoffman 2006). Nonetheless, ANO and similar actors possess independent incentives to act. Reliable state attribution is episodic at best and not addressed in public databases. Even in an environment of strong dependencies, states and terrorist groups are independent and disparate actors (Laqueur 1986, Richardson 1999). Mercenary terror organizations were assumed to be similar to more independent organizations. Their acts were not filtered from the data.

In a slightly different phenomenon, agents of national agencies conduct attacks and falsely attribute them to fictitious terrorist groups. The clandestine nature of terrorism provides exploitable opportunities for this tactic. Agents, unlike terror for hire organizations, are not independent actors. They are therefore definitionally incapable of committing terrorism. The incentives for agent attacks are a product of the calculations of a state. This delimitation leads to rhetorically odd, yet constructively valid, categorizations. For example, Abdelbaset al-Megrahi, security chief for Libyan Arab Airlines and Libyan intelligence officer, was convicted for the December 21st, 1988 Pan American flight 103 bombing over Lockerbie, Scotland. According to former Justice Minister Abud Al Jeleil, Colonel Muammar Qaddafi, Libyan head of state, personally ordered the attack (Hamade 2011). If this interpretation of facts is correct, this attack was an act of state. It is not a data point in the population.<sup>128</sup>

Verified agent attacks are rare but not entirely trivial. Some historically prominent incidents were credibly blamed on agents.<sup>129</sup> The Pan American flight 103 bombing was a case in point. GTD does not knowingly include attacks perpetrated by state agents (Miller 2011b). I excluded 14 questionable events from the population.<sup>130</sup>

Rogue state employees conduct terrorism. State agents commit terrorism if they act on their own initiative independent of official sanction. Ambiguity enters because official denials may or may not be credible. This is often a question concerning terrorism

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<sup>128</sup> In this example, the attack was transnational anyway. Its practical impact would be on future research. There were less famous domestic cases in the GTD.

<sup>129</sup> Reflexive blame on foreign or domestic government agents is rife after terrorist events.

<sup>130</sup> Per communication with the database manager, 3 will be removed from their next release, 1 will be retained, and 10 were received positively but awaiting final determination. One event concerned a probable Algerian false flag operation by the Organization of Young Free Algerians. Two events concerned probable Israeli false flag operations by the Organization for Preventing the Spread of Nuclear Weapons. The other events were more transparently state actors. For example, two attacks were attributed to the Vanuatu Mobile Force which is an official paramilitary organization and one event was attributed to the Turkish National Intelligence Organization.

from the right. For example, is death squad violence rogue or state sanctioned? GTD attempts to filter out events of state sanctioned violence (LaFree and Dugan 2011b, 5). Inspection of the data gives no indication they were not largely successful. Attacks attributed to “death squads” or similar groups were accepted as unsanctioned violence.

The final complexity concerns individuals acting independently or spuriously claiming to be members of a group. Are these individual attacks political violence or criminality and mental illness justified with self-aggrandizing claims? The increased use of the internet, and television and radio before it, justified the inclusion of lone wolf actors. Revolutionary causes attract adherents at a distance. The problem of self-radicalization is not new, but it is growing (Jenkins 2009). The GTD includes acts by individuals. The judgment of the original coders was accepted as accurate. No attacks were excluded solely because an individual committed it.

### *Noncombatant Targets*

Targets must be noncombatants. This attribute is an abstraction of the larger concept of international humanitarian law or what is often called laws of war.<sup>131</sup> Laws of war are beyond the scope of this research but they may be summed up in four principles: (1) military necessity, (2) unnecessary suffering, (3) proportionality, and (4) distinction between combatants and noncombatants and military objectives and property of no military value (Sharp 2007, E1-E2). The fourth principle was key to differentiating terrorism from legitimate warfare.

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<sup>131</sup> Laws of warfare are codified in the Geneva Conventions. Common Article II contains rules for conflict which allow for subnational groups to engage in legitimate warfare. Laws of war are not without debate and national differences exist. Not all states are signatories to every protocol. A good reference for what members of the United States and many Western armed forces are actually taught is *Joint Publication 3-60: Joint Targeting* (2007), Appendix E.

GTD humanitarian law coding was frequently inconsistent and questionable.<sup>132</sup> For example, attacks on elementary schools, houses of worship, shopping malls, and diplomatic targets, which even the most nonrestrictive interpretation of humanitarian law would prohibit, were coded as consistent with the laws of war.<sup>133</sup> The much larger issue was the coding of attacks directed at military and police targets as inconsistent with the laws of war. Of 11810 attacks on military targets, 9265 or 78% were coded as violations. Of 11544 on police targets, 9780 or 85% were coded as violations. Inspection of incident summaries, when available, indicated dubious interpretation of the laws of war.

Fortunately, the GTD **target type** variable provided a more accurate method to avoid Type 1 and Type 2 errors.<sup>134</sup> Military and police target types could be used to equivalent effect with less risk of errors. Military target types were fairly clearly combatants. Police targets were less clearly combatants but were justifiably classified as such. Police are often in the "front lines" in fights with insurgents. Many countries' security forces dwarf the size of their regular military. Some, such as Costa Rica, have no military forces at all. Rhetorically, states typically define attacks on their military or security forces as terrorism.<sup>135</sup>

My assumption was that attacks on military or police targets were overwhelmingly attacks on combatants. The attacks may be abhorrent, but for construct

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<sup>132</sup> The explanation in the GTD codebook is "action must be outside the context of legitimate warfare activities, i.e. the act must be outside the parameters permitted by international humanitarian law (*jus in bello*) as reflected in the Additional Protocol to the Geneva Conventions of 12 August 1949 and elsewhere" (LaFree and Dugan 2011b, 19). The explanation was compelling, application was not.

<sup>133</sup> Before applying other filters such as military target types, I found 55 problematic events.

<sup>134</sup> GTD used 22 target types including business, general government, police, military, abortion related, airports and airlines, diplomatic, educational institution, food or water supply, media, maritime, NGOs, other, private citizens and property, religious, telecommunications, terrorists, tourists, transportation, unknown, utilities, and violent political parties.

<sup>135</sup> Authorities are not unbiased, disinterested observers and it makes little political sense to speak in terms of lawful warfare. It risks granting legitimacy to enemies.

validity they are acts of war and not terrorism.<sup>136</sup> This approach effectively eliminated normative judgment on the legitimacy of the cause and categorized events on the legitimacy of the target.

By categorizing the military and police as combatants, the operationalization became more straightforward. These events were eliminated from the population, barring additional information indicating extenuating circumstances. Of the remaining target type variables, telecommunications, transportation, and utilities could conceivably have military value. Exclusion of attacks aimed at these target types was contingent upon event summaries. Original coding was given presumptive credibility.<sup>137</sup> All other target type codes were considered noncombatant.

#### *Audience Beyond Immediate Victims*

Intended audience is relatively simple to discern with spectacular events. It is much more difficult with more discriminating violence. From the operational definition of terrorism, there is no need to specify the audience or require the audience be large. However, attacks must be for more than utilitarian disposal of victims or property.

Original GTD coders frequently classified assassinations, bank robberies, utility attacks, educational facility attacks, and mass exterminations as not intended for audiences beyond the immediate victims.<sup>138</sup> Each summary description, target, and attack type was reviewed with regard to the likely audience. Original classifications were

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<sup>136</sup> Military or police men or women may be victims of terrorism when perpetrators were unaware or unconcerned with their presence in the target area. In this case, there would be no intent by terrorists to attack a combatant target.

<sup>137</sup> Attacks on telecommunications, transportation, and utilities of military value were generally coded as not meeting the audience beyond immediate victims (criterion 3) requirement. Although unclear why, the net effect was the same. Failure to meet this criterion also eliminated events from the population.

<sup>138</sup> Before applying other filters, GTD coded 8820 of 98113 incidents between 1970-2010 (less 1993) as not intended for audiences beyond the immediate victims.

presumptively valid but recoded when reasonable evidence existed the attacks were intended to influence an audience.<sup>139</sup> Assassinations and educational facility attacks illustrate difficulties in determining audience intent.

Assassinations are problematic. For example, the Irish Republican Army (IRA) murdered Frank Hegarty, a suspected informer, and dumped his body alongside a country road (Breen 2011, LaFree and Dugan 2011a, 198605260003).<sup>140</sup> Informers are threats to insurgent organizations and the violence was selective. Hegarty's family was easily accessible to the IRA, yet remained unharmed. The IRA taped a "confession" but the only known distribution was to his family (Breen 2011). The body was not hidden yet neither was it displayed in an area guaranteed to generate wide publicity. In an alternative technique, the Communist Party of India-Maoists killed suspected police informer Bhogi Kumar. They dragged him to the center of the small village of Katulpeta, India and shot him, leaving behind a letter warning others on the consequences of cooperation with authorities (LaFree and Dugan 2011a, 200901100012).

The second method was clearly intended for a wider audience.<sup>141</sup> It is unclear whether the IRA method was. One suspects informer punishments are disseminated, at the very least within the organization, to serve as an example to would be traitors. Are informer murders intended for audiences beyond the immediate victim and thereby acts of terrorism? Barring evidence to the contrary, the judgment of the original coders was assumed correct.

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<sup>139</sup> After removing attacks on military and police targets, I recoded 1464 previously excluded events as meeting this criterion.

<sup>140</sup> This event was coded as not intended for a wider audience, although several IRA informant assassinations were coded as intended for larger audiences.

<sup>141</sup> Original coding was as not intended for a wider audience.

Attacks on educational institutions illustrate the importance of viewing similar events in aggregate as well as in isolation. The Pakistani army and other security forces occasionally use schools in remote areas as staging areas. Destroying a school may deny shelter to an opposing combatant force, making it a military objective and legitimate. School destruction, in isolation and particularly with no obvious accompanying effort to publicize the attack, may not *ipso facto* be an act of terrorism. However, the aggregate pattern reveals probable intentions. In 2009 alone, various Pakistani and Afghan militant groups attacked schools, playgrounds, teachers and principals, busses, and students on 86 separate occasions. The overwhelming majority of attacks were unclaimed, yet the pattern indicated clear intent to intimidate a wide audience from pursuing education.<sup>142</sup>

### *Political or Social Objective*

Terrorism is political violence. The definition of "political" may be wider or narrower, including or excluding social, religious, or ideological goals. Nonetheless, the intent is the pursuit of objectives beyond private interests. Effectively, this eliminated violence in pursuit of self-serving economic gain, personal vengeance, or psychopathic gratification.

The biggest difficulty arose in interpreting violence inhabiting the conceptual border between crime and politics. For example, the Colombian FARC and Peru's Shining Path are widely acknowledged to have co-opted drug trafficking organizations - or arguably vice versa. Attacks by these organizations require careful scrutiny as to their actual purpose. Criminal activity becomes more palatable with a veneer of political

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<sup>142</sup> Original coding on audience intent was mixed for these events. I recoded several to reflect an audience beyond the immediate victims was intended.



justification. Overall, a degree of political motivation endures for political-criminal groups. Violence attributed to these types of organizations should lean toward inclusion.

More difficult is the encroachment of purely criminal organizations into politics. For example, Mexican and Colombian drug traffickers have tried to influence elections and foreign policy. They have sponsored candidates for public office. Events attributed to criminal organizations conjecturally should be treated the opposite of political organizations meddling in crime. In other words, violence attributed to them should lean toward exclusion. The GTD contains a very small number of incidents attributed to primarily criminal organizations. This is an indication of cautious application of the political motivation criterion. Original coder judgment was given due consideration.<sup>143</sup>

### **Is it domestic terrorism?**

The difference between transnational and domestic terrorism revolves around national identity. Enders et. al. (2011) opted to risk type 2 errors, excluding actual cases, in the identification of international events. Similar to Kis-Katos et. al. (2011), I do the opposite for domestic events. I risk type 1 errors, including errant cases, by including ambiguous but probable domestic attacks. Inspection of the data indicates the weight of evidence in the most difficult cases strongly leans toward domestic terrorism. Speculatively, transnational terrorists may be more likely to claim their events to attract more international media coverage. The risk of systemic Type 1 errors is minimal. Of 63407 events, almost half or 31674 are ambiguous but probably domestic terrorism.

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<sup>143</sup> A total of 172 events were recoded. Most involved targets of no economic value to the perpetrators and not indicative of personal vengeance - for example infrastructure attacks.

All versions of the dependent variable compared country codes among location, target nationality, and perpetrator nationality.<sup>144</sup> The main version of the dependent variable used location state (and only actual states) country codes where the attack occurred.<sup>145</sup> For purposes of compatibility with other research, the robustness version of the dependent variable retained original country codes. In all dependent variable versions, attacks in dependencies, autonomous regions, and territories were aggregated with the count from their parent state.<sup>146</sup>

### *Location*

Cross-national terrorism research uses states as data containers. Terrorist groups may recognize and act upon dissimilar perceptions. Terrorists, at least in their anticolonial, separatist, religious or millenarian varieties, operate in contravention to existing state boundaries. States may aggregate peoples who feel no affinity for it or each other. The stage is set for location disputes. For example, was the Algerian Revolution of 1954-1962 a conflict between one people or two (or more)? France claimed Algeria as its home territory. Was National Liberation Front (FLN) or Algerian National Movement (MNA) violence against "French"<sup>147</sup> Algerians better described as domestic or transnational terrorism?

The GTD codebook described locations as follows:

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<sup>144</sup> GTD had 297 cases where location and target nationality used country codes that did not coexist - for example Germany and West Germany. The database also contained 1 incorrect location coding and 3 incorrect target nationality codings. If researchers use uncorrected GTD country codes to determine the transnational/domestic nature of incidents, transnational incidents will be inflated and domestic incidents deflated.

<sup>145</sup> Taiwan was considered a state. Palestine, Western Sahara, and Vatican City were not.

<sup>146</sup> GTD country codes are not necessarily states. The net effect of this approach was to either maintain the same number of domestic events or decrease them. Domestic events could not increase over the base version of the dependent variable.

<sup>147</sup> Most settlers in Algeria were of East European origin and adopted French citizenship.

"[Country] includes non-independent states, dependencies, and territories, such as Northern Ireland and Corsica. If an incident occurs in an autonomous or geographically non-contiguous area, it is listed separately from the "home" country. However, separatist regions, such as Kashmir, Chechnya, South Ossetia, Transnistria, or Republic of Cabinda, are coded as part of the "home" country (LaFree and Dugan 2011b, 9)."

The ITERATE treatment is similar:

"While many of these [separatist ] attacks are considered to be domestic terrorism, such attacks are included if the terrorists traverse a natural geographical boundary to conduct attacks on the metropole, e.g. Northern Irish attacks on the main British island, Puerto Rican attacks outside of the island, and attacks within Israel by Palestinian refugees." (Mickolus, et al. 2003b, 9)

Both GTD, and ITERATE, used "country" codes for nonstate entities. This approach distorts states as data containers and introduces presumptive political judgments on where state boundaries are. "Natural" geographic boundaries and "autonomy" are not explained and do not appear to be blindly applied. Using nonstate country codes masks determinants of domestic terrorism. For example, linguistic, ethnic, or religious social diversity may explain IRA violence. ITERATE codes IRA terrorism targeted against other parts or citizens of the United Kingdom as transnational terrorism. With a Northern Ireland country code, those events are excluded from a domestic terrorism population. Likewise, nonstate country codes could artificially increase transnational terrorism by increasing "states" in the system. A strict interpretation of states is a more constructively valid, albeit uncommon, operationalization.

### *Target Nationality*

Target nationality is the state, or multinational entity, harmed by an attack.<sup>148</sup>

Ambiguity ensued from the difference between intended and actual victims of an

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<sup>148</sup> If multinational or international are coded then the attack is automatically transnational.

attack.<sup>149</sup> For construct validity, the intended, or symbolic, target is a better indicator.<sup>150</sup> Target symbolism matters in terrorism (Crenshaw 1981, Harris 2004, Hoffman 2006, Jenkins 1974, McCormick 2003, Richardson 1999, Ross 1993). The GTD contained many cases where it is unclear whether actual or intended target states were coded.

For example, was an attack on an international operation symbolically aimed at the United Nations or the specific nationality whose citizens were harmed? The United Nations seems more plausible, especially if the victims were from states that are not diplomatically prominent. Intended target states were recoded where original GTD data was missing or reasonably corrected through descriptions in other variables.<sup>151</sup> No attempt was made to discern and code counterfactual victims. For example, an attack on state A was intended to effect state B - which was entirely unaffected. State A is coded as the target.

Only primary victim states were used. Collateral victims were ignored in categorizing events.<sup>152</sup> Of note, GTD coded hijacking incidents as the nationality of the plane, not the passengers. This logic is consistent with the interpretation identifying intended victims rather than actual victims.

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<sup>149</sup> Per conversation with the database manager, GTD coding guidelines were unclear on whether to use intended or actual target nationalities. Her future intent was to specify intended victim for the aggregate target variable while maintaining actual nationalities for individual victims.

<sup>150</sup> Enders *et. al.* argued "on occasion, an intended domestic terrorist attack may become transnational owing to random factors – e.g. a foreigner near a blast that injures her – but since terrorists carefully plan their attacks, there are no grounds for anticipating this occurrence to be frequent or non-random" (2011, 321). The frequency and non-random nature of collateral damage is questionable. Terrorists are generally untroubled with collateral damage, especially among foreigners unlikely to support them anyway. Randomness is a psychological benefit to purveyors of terrorism (Cronin 2003, Hoffman 2006, Ross 1993, Ruby 2002).

<sup>151</sup> Before applying other filters, there were 564 cases of author coded target states replacing originally missing, questionable, or incorrect data.

<sup>152</sup> This is in effect the opposite of the Enders *et al.* approach. Note GTD uses, and I retained, a multinational and international country code.

## *Perpetrator Nationality*

Terrorist nationality was the most difficult criterion. Although GTD attributed events to perpetrator groups, or provided other descriptors, it did not provide terrorist nationalities. Based on supplemental research, each perpetrator group, or individual acting alone, was coded for state of origin. Lamentably, terrorist groups are not stationary, transparent, or nationally pure. This created four difficulties - group nationality, exile groups, intermingled groups, and individual perpetrators.

Group nationality usually refers to physical location of the group. This determination was relatively straightforward when attacks were attributed to identifiable organizations. Although the nationality of most groups was reasonably determined, some were so obscure they were coded as unknown. Additionally, some groups resided in more than one state. Typically, one location is predominant and the satellite locations were ignored with plausibly minimal measurement error. Only the primary state of origin was used in determining the domestic or transnational nature of the event.

Over half of GTD events are attributed to generic descriptors rather than named groups. For these cases, I assumed a group was either “homegrown”, unknown, or a specific nationality.<sup>153</sup> When the event was homegrown, the perpetrators were coded with the same nationality as the location of the attack. When coded as unknown, the perpetrator nationality was missing.<sup>154</sup> For example, the descriptor “student demonstrators” was assumed to be homegrown. It seemed unlikely mass numbers of

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<sup>153</sup> GTD used 155 generic descriptors of which I assumed 129 to be homegrown, 8 to be a specific nationality, and 18 to be unknown.

<sup>154</sup> When perpetrator nationality was unknown, but location and target nationality matched, the event became an ambiguous but probable domestic event and included in the population. Dependent variable versions excluding ambiguous events may be easily derived. Although not included in the dissertation, when ambiguous events were dropped results were generally similar.

students would travel abroad to protest. The descriptor “Arabs” was less deterministic. The term is applicable to so many locations it was coded as unknown. Table A.2 and Table A.3 list generic descriptor operationalization.

Unknown: (country code = -99)			
Anarchists (except Greece)	Extortionists	Muslims (except Philippines, Sri Lanka)	Unknown
Anti-Semitists	Extremists	Other	Unknown Masked Raiders
Anti-Soviet Protest Group	Guerrillas	Scooter Borne Terrorists	Urban Guerrillas
Arabs	Gunmen	Several Individuals	
Armed Guerrillas	Hooded Men	Terrorists	
Other: (country code as described)			
Armenian Extremists (Armenian country code with homegrown secondary nationality)	Armenian Guerrillas (Armenian country code with homegrown secondary nationality)	Armenian Nationalists (Armenian country code with homegrown secondary nationality)	Armenians (Armenian country code with homegrown secondary nationality)
Armenian Group (Armenian country code with homegrown secondary nationality)	Armenian Militants (Armenian country code with homegrown secondary nationality)	Armenian Paramilitary Group (Armenian country code with homegrown secondary nationality)	Jewish Terror (Israel country code although some may actually reside in West Bank/Gaza)
When other incident variables contained better information it was used in lieu of this table.			

**Table A.2 Generic descriptors coded as unknown or specific nationalities**

Homegrown: (country code = location of attack)			
Muslim Separatists	Rebels	Rival Parties	Shiite Muslims
Narco-Terrorists	Right-Wing Death Squad	Rival Party Members	Sunni Muslims
Neo-Fascists	Right Wing Extremists	Rival Peasant Band	Tamils
Neo-Nazi Group	Right Wing Group	Rival Soccer Clubs	Taxi Drivers
Opposition Group	Right Wing Gunman	Secessionists	Tribal Clash
Opposition Militants	Right Wing Militants	Separatists (of any description)	Tribal Group
Organized Crime	Right-Wing Paramilitaries	Sinhalese Militants	Tribal Guerrillas
Paramilitaries	Right-Wing Terrorists	Skinheads	Unemployed Persons
Peasant Squatters (Paraguay only case)	Right-Wing Vigilantes	Strikers	Union Members
Political Activists	Right-Wing Youths	Students	Vigilante Group
Political Group	Rioters	Student Demonstrators	Villagers
Protestors (several varieties)	Rival Activists	Student Militants	White Extremists
Radicals (term used only for Japan)	Rival Caste	Student Radicals	Workers/Employees
Rebel Military Unit	Rival Clan	Subversives	Youths
When other incident variables contained better information it was used in lieu of this table.			

**Table A.3 Generic descriptors coded as homegrown**

Second, exile groups complicate nationality determination. The ITERATE database differentiated between resident exiles and citizens.<sup>155</sup> This treatment is problematic. When doubt arose as to whether groups were citizens or exiles, I coded nationality based on the political purpose of the organization. Categorizing domestic and transnational attacks based on exile or citizenship status is a legitimate concept. Accurately determining it is nigh impossible for large  $n$  research. A sample attack in the United States demonstrates the difficulty of discerning between domestic and transnational terrorism.

On December 20th, 1977 the Cuban exile group Omega 7 carried out two improvised explosive attacks in Elizabeth and Union City, New Jersey against the *Almacen el Espanol* shipping company (LaFree and Dugan 2011a, 19771220002-3). *Almacen el Espanol* sent food, medicine, and clothing to Cuba. The location of the attacks was not in doubt. They were in the United States. The target of the attack, *Almacen el Espanol*, was owned and operated by American citizens or at least permanent residents. There is no doubt Omega 7, a group largely based in Florida, carried out the attack. What is unknown, and is overwhelmingly unknown in terrorism databases, was the identities of any of the perpetrators and whether they were citizens, permanent residents, legal or illegal refugees, or a combination of all of these.<sup>156</sup> A reasonable assumption is that Omega 7 committed acts of terrorism based on the politics of Cuba. The attack should therefore be considered transnational terrorism.

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<sup>155</sup> The specific ITERATE codebook wording is “Attacks by exiles resident in but not citizens of a nation are also included [as transnational attacks], e.g. South Moluccans in the Netherlands, Cuban exiles in the US.” (Mickolus, et al. 2003b, 9)

<sup>156</sup> Under provisions of the Cuban Adjustment Act of 1966, immigrant Cubans become legal residents after residing in the United States for a period of one year. Procedurally, legal permanent residence is a stepping stone on the path to American citizenship. Legal residence is not sufficient for citizenship. The children of Cubans born in the United States automatically become citizens. None of this detail is helpful when the perpetrators are unknown other than that they belonged to Omega 7.

The complications of Cuban exiles are matched by similar ones among Armenians, Palestinians, and a host of others. Exile groups are not bit players on the world terrorist stage. The categorization of their attacks could bias causal analysis. Further, citizenship policies of states are not alike. For example, the United States traditionally favors assimilation of legal immigrants.<sup>157</sup> Other states actively discourage assimilating immigrants. Over time, policy differences could lead to inconsistent treatment of exile groups.

Third, groups are comprised of intermingled individuals, not all of whom share the same country of origin. A common, but severely limited, treatment in literature is to attribute origins proportionally on an *individual* basis (e.g. Krueger and Maleckova 2003). For example, of the 9/11 hijackers, 15 were Saudi Arabian, 2 were from the United Arab Emirates, and 1 each came from Egypt and Lebanon. Therefore each of those states "generated" the corresponding number of terrorists. Although this treatment is reasonable, the level of detail required is not available for large *n* research. Terrorism is more about group than individual behavior.

Individual political pilgrims exist among the ranks of terrorist organizations, but their numbers are small.<sup>158</sup> For security reasons alone, terrorist group members tend to share a common nationality. With one notable exception, this research treated terrorist groups as having a single national origin and ignored individual perpetrator nationality.<sup>159</sup> Al Qaeda "central", although not necessarily its affiliate organizations, was an outlier in its multinational makeup (Crenshaw 2001, 432, Feldman and Ruffle 2008, 13, Hoffman

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<sup>157</sup> Debatably of illegal immigrants also.

<sup>158</sup> Blomberg and Hess (2008b, 121) found the perpetrators were nationally homogeneous in 98% of attacks.

<sup>159</sup> Basuchoudhary and Shughart (2010) used the same approach.



2006, 282, Rapoport 2004, 64, Sageman 2008, Sanchez-Cuenca and De la Calle 2009, 37). Al Qaeda was coded as multinational and any attacks attributed to it were default categorized as transnational.

Individual perpetrators were the final difficulty. In some cases, individuals assume foreign "nationalities" to which their daily relationship appears tenuous. Some examples illustrate the difficulty. Were the perpetrators of July 7th, 2005 bombing in London British or some other nationality? They were second or third generation descendants of immigrants and British citizens. Still, they identified with a foreign Al Qaeda entity, ideology, and grievances. Political pilgrims that physically migrate present difficulties as well. Did United States citizens John Walker Lindh, Adam Gadahn, or Colleen LaRose<sup>160</sup> become *de facto* foreign by renouncing their citizenship? Naturalized citizens who turn to terrorism in the service of foreign causes are also difficult. Their citizenship oaths could have been genuine or simply ruses to give advantage in the conduct of attacks.

To date, the individual attacker phenomenon is small compared to more traditional group operations. Small does not imply benign or trivial. The ability of individuals to inflict casualties grows as technical means and knowledge diffuses. The growing trend potentially impacts the concept of domestic and transnational terrorism.<sup>161</sup> I coded attacks attributed to unidentified individuals with the nationality of the location

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<sup>160</sup> Popularly known as the "American Taliban", "Adam the American", and "Jihad Jane" respectively.

<sup>161</sup> In the United States alone, Bjelopera (2011, 1) counted 53 homegrown jihadist-inspired plots or attacks by American citizens between May 2009 and October 2011, although some were not intended to be individual operations.

of the attack.<sup>162</sup> For known individuals, their nationality matched their official citizenship.

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<sup>162</sup> There were 254 such attacks in population.

## APPENDIX B

### REGIONAL GROUPINGS OF STATES

This appendix lists the regional groupings of states as categorized in the GTD codebook. I used GTD to analyze global regions over the more commonly used 5 regions contained in, for example, EUGene© (Bennett and Stam 2008), because it allows for more granular collections of states. This appendix clarifies any analysis using terms such as Western Europe, the Middle East, etc.

The GTD divides the world into 13 regions. Differences between GTD and more common regional groupings are not necessarily stark. For example, the Middle East is a common regional control variable in terrorism literature. Comparison between GTD and EUGene© reveals the states are nearly identical. Bennett and Stam included Sudan while GTD substituted Cyprus for it.

Some states are missing from the GTD codebook. I assigned them to regions based on geographic proximity. An asterisk\* denotes author coded states.

#### **Australasia and Oceania**

Australia  
Fiji  
Kiribati\*  
Marshall Islands\*  
Micronesia\*  
Nauru\*  
New Zealand  
Palau\*  
Papua New Guinea  
Samoa  
Solomon Islands  
Tonga\*  
Tuvalu\*

#### **Australasia and Oceania (cont)**

Vanuatu

#### **Central Asia**

Kazakhstan  
Kyrgyzstan  
Tajikistan  
Turkmenistan\*  
Uzbekistan

#### **Central America and Caribbean**

Antigua and Barbuda  
Bahamas  
Barbados

**Central America and Caribbean (cont)**

Belize  
Costa Rica  
Cuba  
Dominica  
Dominican Republic  
El Salvador  
Grenada  
Guatemala  
Haiti  
Honduras  
Jamaica  
Nicaragua  
Panama  
Saint Kitts and Nevis  
Saint Lucia\*  
Saint Vincent and the Grenadines\*  
Trinidad and Tobago

**East Asia**

China  
Japan  
Korea, South  
Korea, North  
Mongolia\*  
Taiwan

**Eastern Europe**

Albania  
Bosnia-Herzegovina  
Bulgaria  
Croatia  
Czech Republic  
Czechoslovakia  
Hungary  
Kosovo  
Macedonia  
Moldova  
Montenegro  
Poland  
Romania  
Serbia and Montenegro  
Serbia  
Slovak Republic  
Slovenia  
Yugoslavia

**Middle East and North Africa**

Algeria  
Bahrain  
Cyprus  
Egypt  
Iran  
Iraq  
Israel  
Jordan  
Kuwait  
Lebanon  
Libya  
Morocco  
Oman\*  
Qatar  
Saudi Arabia  
Syria  
Tunisia  
Turkey  
United Arab Emirates  
West Bank and Gaza Strip  
Yemen  
Yemen, North  
Yemen, South

**North America**

Canada  
Mexico  
United States

**Russia and Newly Independent States**

Armenia  
Azerbaijan  
Belarus  
Estonia  
Georgia  
Latvia  
Lithuania  
Russia  
Soviet Union  
Ukraine

**South America**

Argentina  
Bolivia  
Brazil

**South America (cont)**

Chile  
Colombia  
Ecuador  
Guyana  
Paraguay  
Peru  
Suriname  
Uruguay  
Venezuela

**South Asia**

Afghanistan  
Bangladesh  
Bhutan  
India  
Maldives  
Mauritius  
Nepal  
Pakistan  
Seychelles  
Sri Lanka

**Southeast Asia**

Brunei  
Cambodia  
Indonesia  
Laos  
Malaysia  
Myanmar  
Philippines  
Singapore  
Thailand  
Timor Leste  
Vietnam  
Vietnam, North  
Vietnam, South

**Sub-Saharan Africa**

Angola  
Benin  
Botswana  
Burkina Faso  
Burundi  
Cape Verde\*  
Cameroon

**Sub-Saharan Africa (cont)**

Central African Republic  
Chad  
Comoros  
Congo, Democratic Republic of  
Congo, Republic of  
Cote D'Ivoire  
Djibouti  
Equatorial Guinea  
Eritrea  
Ethiopia  
Gabon  
Gambia  
Ghana  
Guinea  
Guinea-Bissau  
Kenya  
Lesotho  
Liberia  
Madagascar  
Malawi  
Mali  
Mauritania  
Mozambique  
Namibia  
Niger  
Nigeria  
Rwanda  
Senegal  
Sierra Leone  
Somalia  
South Africa  
Sudan  
Swaziland  
Tanzania  
Togo  
Uganda  
Zambia  
Zimbabwe

## APPENDIX C

### SUPPLEMENTATION OF ALESINA DATA

Alesina et al. (2003) published comprehensive, nearly-global, social identity data. Their original dataset did not include dead polities or, obviously, polities emerging after their compilation. This presented a research problem. States such as the former Soviet Union existed for 21 of the 41 years of the research. Czechoslovakia existed for 22 years. Successor states of Yugoslavia were another subset of missing polities. Notwithstanding their brevity as states, identity-based violence in the Balkans following the Yugoslav breakup could be influential in any assessment of social determinants. In addition to missing states, some listed states contained missing values for linguistic, ethnic, or religious fractionalization.

Missing data can seriously impede empirical modeling. Replacing missing data with reasonable, if imperfect, values could have substantive impact. Table C.1 summarizes missing data.

## Missing Data

### Dead Polities

Czechoslovakia  
Democratic Republic of Vietnam (North)  
Federal Republic of Germany (West)  
German Democratic Republic (East)  
People's Democratic Republic of Yemen (South)  
Republic of Vietnam (South)  
Union of Soviet Socialist Republics  
Yemen Arab Republic (North)

### Emergent Polities

Kosovo  
Montenegro  
Serbia

### Missing Measures

Maldives  
Serbia and Montenegro  
Timor Leste  
Yemen

Table C.1 Missing social identity data

## Constructing Supplemental Data

Alesina et al. used different data sources for each identity type. Ethnic data was culled from a smattering of sources, including the *Encyclopedia Britannica*, the Central Intelligence Agency (CIA) *World Factbook*<sup>163</sup>, Levinson (1998), Mozaffar and Scarritt (1999), *World Directory of Minorities*, and national census figures. Linguistic and religious data were sourced solely from the *Encyclopedia Britannica*.

Three considerations bear upon assembling supplemental data. First, the common assumption in literature is identity demographics are constant. This assumption is necessary because temporal social data is unavailable. Furthermore, the assumption is reasonable in terms of decades. Different birth rates or religious conversions take time to substantively alter distributions. The assumption is questionable for states suffering bouts of ethnic cleansing. For example, civil violence between Kosovo and Serbia or

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<sup>163</sup> Assumedly either the 2002 or 2003 version.

between Indonesia and Timor Leste caused rapid swings in population distributions. Nonetheless, the measurement error caused by assuming constant identity distributions should be relatively minor.

Second, I assumed different versions of the same original source were equally valid. Specifically, the *Encyclopedia Britannica* and *CIA World Factbook* should use similar methods to gather and classify data over time. This allowed for moving the clock both forward and backward in time to derive data for both emergent and dead polities. Even were there differences in collection and interpretation over time, the induced error should be minor.

Third, new original sources were avoided when possible. New sources risk introducing measurement error as data may be gathered and interpreted in different ways. The most consistent source of data was Alesina himself. If no alternative source was available, daughter state data was applied backwards to “parent” states. For example, Czechoslovakian data was derived by combining figures from the Czech Republic and Slovakia and performing simple mathematical adjustments.

Similarly, the country of Yemen resulted from the 1990 merger of the People’s Democratic Republic of Yemen and the Yemen Arab Republic. Yemen’s linguistic data was applied to the two pre-merger states. This is not an ideal solution, but this method was better than missing data. The measurement error should be minimal.<sup>164</sup>

Sources identical to Alesina’s originals were available for ethnic data. The same was not true for linguistic and religious data. Although not an original Alesina source for linguistic and religious demographics, the *CIA World Factbook* contained the needed information. Exact *CIA World Factbook* methodology and sources are not publically

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<sup>164</sup> Note over 99% of Yemenis speak Arabic.



known. Their website lists several United States government agencies “and other public and private sources.”<sup>165</sup> Sample comparisons of social data revealed little evidence *Encyclopedia Britannica* was not a primary CIA source. By substitution, the *CIA World Factbook* was a reasonable replacement for unavailable versions of *Encyclopedia Britannica*.

After supplementing Alesina’s data, the outcome was 37 of 38 missing values were replaced. Table C.2 lists sources used to supplement original data.

Polity	Ethnic Data Source	Linguistic Data Source	Religious Data Source
Czechoslovakia	Alesina*	Alesina*	Alesina*
Democratic Republic of Vietnam (North)	Alesina**	Alesina**	Alesina**
Federal Republic of Germany (West)	Alesina**	Alesina**	CIA 1990
German Democratic Republic (East)	CIA 1990	CIA 1990	CIA 1990
Kosovo	Encyclopedia Britannica 2011	Encyclopedia Britannica 2011	Encyclopedia Britannica 2011
Maldives	Encyclopedia Britannica 2011	No Change	No Change
Montenegro	CIA 2011	CIA 2011	CIA 2011
People’s Democratic Republic of Yemen (South)	CIA 1990	Alesina**	Alesina**
Republic of Vietnam (South)	Alesina**	Alesina**	Alesina**
Serbia	CIA 2011	CIA 2011	CIA 2011
Serbia and Montenegro	No Change	CIA 2004	CIA 2004
Timor Leste	Encyclopedia Britannica 2011	No Change	No Change
Union of Soviet Socialist Republics	CIA 1990	-	CIA 1990
Yemen	Encyclopedia Britannica 2011	No Change	No Change
Yemen Arab Republic (North)	CIA 1990	Alesina**	Alesina**
*assembled from daughter state data **no alternative source, used successor state data - missing			

**Table C.2 Sources used to supplement original Alesina et al. data**

<sup>165</sup> [https://www.cia.gov/library/publications/the-world-factbook/docs/contributor\\_copyright.html](https://www.cia.gov/library/publications/the-world-factbook/docs/contributor_copyright.html)

## APPENDIX D

### ALTERNATIVE SOCIAL TENSION MEASURES

As a robustness check, alternative identity data from Montalvo and Reynal-Querol (2005) and Desmet, Ortuno-Ortin, and Wacziarg (2012) were substituted for the Alesina et al. data.<sup>166</sup> A robustness check could not be performed on the ethnic identity variable. Neither Montalvo and Reynal-Querol nor Desmet et al. produced data equivalent to Alesina's ethnicity measure. Desmet et al. did not produce religious data either.

#### Linguistic Data

Montalvo and Reynal-Querol used different original sources than Alesina et al. and a combined ethnolinguistic indicator. The exact makeup of the ethnolinguistic measure was unclear, but appears to be essentially equivalent to what Alesina et al. termed *linguistic*.<sup>167</sup> Montalvo and Reynal-Querol used the *World Christian Encyclopedia* as their primary source for linguistic data. Alesina et al. used several sources, but exclusive of the *World Christian Encyclopedia*.

Montalvo and Reynal-Querol's data included only 137 of 194 states. In terms of observations, there were 5413 for Montalvo and Reynal-Querol compared to 7231 for Alesina et al (see Table 4.5 and Table D.1). There were approximately 25% fewer observations (1-5413/7231) when using Montalvo and Reynal-Querol data. Comparing

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<sup>166</sup> A main difference among all the measures is the original source of identity distributions - *World Christian Encyclopedia*, *L'Etat des religions dans le monde*, *Encyclopedia Britannica*, *Atlas Nadorov Mira*, the CIA *World Factbook*, Levinson (1998), Mozaffar and Scarritt (1999), *World Directory of Minorities*, national census figures, and *Ethnologue*.

<sup>167</sup> Montalvo and Reynal-Querol argue ethnicity consisted of color, language, and religion (2000, 29). They subsequently developed a measure based on religion alone and what appears to be linguistics alone. "Color" is not obviously accounted for in their measures.

mean values and standard deviations between the two datasets revealed they were closely matched.

Similar to Montalvo and Reynal-Querol, the Desmet et al. "ethnolinguistic" measure was solely a linguistic measure in Alesina's terms. Desmet et al. source data was gathered from *Ethnologue*. They measured diversity at different levels along a language tree. High levels of aggregation (low numbers) represented linguistic divisions of past millennia while lower levels (high numbers) represented more recent evolutions (Desmet, et al. 2012, 323). The lower the level of aggregation, the more fundamental was the linguistic cleavage.

Desmet et al. provided comprehensive coverage of contemporary states, but did not address dead polities and some of the emergent states of the former Yugoslavia. The total observations between the two datasets were fairly close. Desmet had 7082 compared to 7231 or about 98% coverage of the Alesina data (see Table 4.5 and Table D.2). Like Montalvo and Reynal-Querol, their original microdata was unavailable, preventing the derivation of values for missing data.

Variable Montalvo and Reynal-Querol	Observations	Mean	Standard Deviation	Minimum	Maximum
Ethnolinguistic Fractionalization	5413	.4467	.2749	.0100	.9586
Religious Fractionalization	5413	.2828	.2335	.0006	.7822

Table D.1 Montalvo and Reynal-Querol descriptive statistics

Variable Desmet et al.	Observations	Mean	Standard Deviation	Minimum	Maximum
Ethnolinguistic Fractionalization 1	7082	.1547	.1803	0	.6466
Ethnolinguistic Fractionalization 2	7082	.2174	.2062	0	.8054
Ethnolinguistic Fractionalization 3	7082	.2468	.2228	0	.8392
Ethnolinguistic Fractionalization 4	7082	.2784	.2435	0	.8570
Ethnolinguistic Fractionalization 5	7082	.3043	.2607	0	.9030
Ethnolinguistic Fractionalization 6	7082	.3508	.2802	0	.9408
Ethnolinguistic Fractionalization 7	7082	.3678	.2909	0	.9773
Ethnolinguistic Fractionalization 8	7082	.3818	.2943	0	.9841
Ethnolinguistic Fractionalization 9	7082	.4084	.2963	0	.9869
Ethnolinguistic Fractionalization 10	7082	.4295	.3045	0	.9892
Ethnolinguistic Fractionalization 11	7082	.4442	.3123	0	.9900
Ethnolinguistic Fractionalization 12	7082	.4449	.3131	0	.9902
Ethnolinguistic Fractionalization 13	7082	.4450	.3132	0	.9903
Ethnolinguistic Fractionalization 14	7082	.4450	.3132	0	.9903
Ethnolinguistic Fractionalization 15	7082	.4450	.3124	0	.9903

Table D.2 Desmet et al. descriptive statistics

## Religious Data

Montalvo and Reynal-Querol used religious source data from the *L'Etat des religions dans le mond*. As with the linguistic measures, the number of observations was smaller, 5413 vice 7256 and again approximately one quarter fewer than Alesina et al. (see Table 4.5 and Table D.1). A comparison of the means of the two measures reveals a substantive difference. The mean value of religious fractionalization for Alesina et al. is .43 against .28 for Montalvo and Reynal-Querol. The .15 difference in mean is considerable.

## **Alternative Social Determinant Results**

Table D.3 shows results using Montalvo and Reynal-Querol data. Montalvo and Reynal-Querol raised the possibility data sources could drive different results but did not test it further in their research. Their prediction was correct for religious fractionalization.

Linguistic fractionalization was generally robust with this data, with the exception of becoming not significant when mountainous terrain was introduced. It became significant again when urbanization was added to the model. Interestingly, religious fractionalization was significant at the .01 level and indirectly related to domestic terrorism. The religious fractionalization incidence rate ratio was approximately 0.5, indicating a one half reduction in the reference rate of terrorism per unit increase in fractionalization. This was substantively different from the lack of significance using Alesina et al. data.

The indirect relationship between religious fractionalization and terrorism using Montalvo and Reynal-Querol suggests two things. It contradicts the hypothesis that religious identity is not a structural determinant. Religious fractionalization may, in fact, decrease terrorism. The causal mechanism could be similar to the postulated logic for ethnic fractionalization. More religiously fractious societies may be more tolerant ones with fewer incentives for religiously motivated terrorism.

The second implication is that Alesina et al. and Montalvo and Reynal-Querol used strongly divergent original sources. Different data resulted in different outcomes. The true question runs deeper than assembling databases. Which measurement is a more

constructively valid indicator of religious diversity? The answer requires further research.

Confirmed and Probable Attacks (states only)	Model		
Independent and Control Variables (lags)			
Anocracy (t-1)	1.8276 (7.35)***	1.8273 (7.34)***	1.8308 (7.36)***
Democracy (t-1)	1.3903 (3.75)***	1.3975 (3.81)***	1.4098 (3.89)***
GNI per capita (t-1)	1.0573 (4.38)***	1.0532 (4.07)***	1.0699 (4.34)***
GNI per capita squared (t-1)	.9988 (3.40)***	.9989 (3.09)***	.9986 (3.50)***
GDP growth rate (t-1)	.9867 (2.67)***	.9868 (2.65)***	.9870 (2.60)***
Ethnolinguistic Fractionalization (Montalvo & Reynal-Querol)	1.4089 (2.08)**	1.3808@ (1.96)**	1.4714 (2.29)**
Religious Fractionalization (Montalvo & Reynal-Querol)	.5122 (3.35)***	.4970 (3.49)***	.4706 (3.72)***
History (t-1)	1.0055 (24.90)***	1.0055 (24.67)***	1.0055 (24.55)***
Cold War	1.2604 (4.50)***	1.2640 (4.55)***	1.2325 (3.91)***
Population	1.2827 (9.65)***	1.2637 (8.93)***	1.2650 (8.97)***
Mountainous Terrain (log)		1.0334 (1.20)	1.0268 (.95)
Urbanization (log)			.8599@ (1.85)*
Constant	.0035 (12.70)***	.0043 (12.20)***	.0070 (9.57)***
Log Likelihood	-7387.7249	-7365.0850	-7363.3809
Wald	918.47***	917.65***	914.02***
Observations	3327	3254	3254
*p value <=.1, **p value <=.05, ***p value <=.01 @.95 confidence interval includes 1 format: <u>Incident Rate Ratio</u> (Absolute Z-statistic Value)			

Table D.3 Model results using Montalvo and Reynal-Querol data

Linguistic diversity was robust to Desmet et al. data at all levels of aggregation. Linguistic fractionalization was significant and directly related to terrorism. This data made little difference to other independent variables. These results also suggest considerable compatibility between *Ethnologue* and Alesina's sources. As they confirmed the primary models, the results are not reproduced here. They are available upon request.

## APPENDIX E

### HISTORY VARIABLE ROBUSTNESS

Because it was the most common approach in literature, I used a single lag of the dependent variable to represent history.<sup>168</sup> Still, the subject is not well researched. Some groups, for example the Irish Republican Army (IRA) and its offshoots or the Revolutionary Armed Forces of Colombia (FARC), have remarkable staying power. Supplemental statistical analysis provided some insight into the historical effect.

Historical effects were tested by regressing the dependent variable on its lags. The results for the base version of the dependent variable are listed in Table E.1.<sup>169</sup> In all models, the first and second lags were uniformly significant and substantive.<sup>170</sup> Model 1 used three lags, Model 2 used four lags, and Model 3 used five lags. In Model 1, the third lag was neither significant nor substantive and the confidence interval for the coefficient included 0, meaning it was indeterminate. In Model 2, adding the fourth lag made the third lag significant and negative but only marginally substantive. The fourth lag was significant and positive but not substantive. Model 3 added a fifth lag. The result was the third lag remained significant and negative. The fourth lag improved its significance to the  $\leq .01$  level but remained of little import. The fifth lag was not significant.

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<sup>168</sup> Drakos and Gofas (2006) used 2 lags of the dependent variable.

<sup>169</sup> All versions of the dependent variable had similar results

<sup>170</sup> Not depicted in table.

Model	Observations	Lag 1 Coefficient	Lag 2 Coefficient	Lag 3 Coefficient	Lag 4 Coefficient	Lag 5 Coefficient
1	6647	.7546 (.0123)***	.1336 (.0154)***	-.0138@ (.0126)	-	-
2	6445	.7532 (.0126)***	.1296 (.0157)***	-.0476 (.0159)**	.0485 (.0130)**	-
3	6243	.7539 (.0128)***	.1286 (.0160)***	-.0458 (.0162)**	.0522*** (.0163)	-.0078@ (.0133)
**p value<=.05 ***p value <=.01                      format: coefficient @.95 confidence interval includes 0                      (standard error)						

Table E.1 Additional lags of the dependent variable

Two lags of the dependent variable could be strongly justified in the research equations. The fourth and fifth lags appear to have little justification. The third lag is debatable. The small coefficient and wavering significance argue against including it. It also requires the fourth or fifth lags to make it significant. However, the consistently negative sign on the coefficient is curious. It may indicate interactions between opposing forces. For example, security forces and terrorists react and adapt to each other. After three years, security forces could be more successful in deterring or preventing attacks. The third lag may capture some of this dynamic.

All the research models were tested with versions using two lags of the dependent variable. The results were similar to those contained in Chapter 5. Both lags of the dependent variable were also significant. However, neither the first nor the second lag were very substantive. Additional theory is needed to justify the temporal limits of historical effects on terrorism.



## APPENDIX F

### STANDARD COEFFICIENTS

This appendix contains standard Stata© output without using the incidence rate ratio (**irr**) option. Negative binomial regression models the logarithm of the expected event count as a function of the independent variables. The coefficient can be interpreted thus. For a “unit change in the predictor variable, the difference in the logs of expected counts of the response variable is expected to change by the respective regression coefficient” while holding the other variables constant.<sup>171</sup>

Confirmed and Probable Attacks (states only)	Model			
	1	2	3	4
<b>Explanatory and Control Variables (lags)</b>				
Anocracy (t-1)	.6196 (8.05)***	.6073 (7.94)***	.6157 (8.03)***	.6151 (8.02)***
Democracy (t-1)	.3461 (4.20)***	.3540 (4.31)***	.3581 (4.35)***	.3568 (4.33)***
GNI per capita (t-1)	.0458 (3.90)***	.0651 (5.54)***	.0695 (5.58)***	.0644 (4.68)***
GNI per capita squared (t-1)	-.0010 (3.16)***	-.0014 (4.21)***	-.0014 (4.15)***	-.0014 (3.69)***
GDP growth rate (t-1)	-.0238 (6.16)***	-.0244 (6.30)***	-.0241 (6.20)***	-.0241 (6.20)***
Linguistic Fractionalization		.3447 (2.67)***	.3527 (2.72)***	.3550 (2.73)***
Ethnic Fractionalization	-.3358** (2.20)			
Religious Fractionalization	.0490 (.33)	-.1582 (1.03)	-.1332 (.85)	-.1304 (.83)
History (t-1)	.0055 (25.25)***	.0055 (25.24)***	.0055 (25.06)***	.0055 (24.89)***
Cold War	.1981 (3.97)***	.1978 (3.97)***	.2065 (4.14)***	.2094 (4.06)***
Population	.2399 (10.21)***	.2362 (9.94)***	.2211 (9.13)***	.2208 (9.11)***
Mountainous Terrain (log)			.0479@ (1.80)*	.0486@ (1.82)*
Urbanization (log)				.0167 (.21)
Constant	-5.2591 (12.41)***	-5.4876 (13.13)***	-5.3797 (12.75)***	-5.4367 (10.91)***
Log Likelihood	-8304.1056	-8302.9336	-8253.0322	-8253.0091
Wald	983.05***	977.28***	978.23	978.96
Observations	4037	4037	3924	3924
<p>*p value &lt;=.1, **p value &lt;=.05, ***p value &lt;=.01            @.95 confidence interval includes 0            format:     Coefficient                      (Absolute Z-statistic Value)</p>				

**Table G.1 Standard Stata coefficients**

<sup>171</sup> ("Stata Annotated Output Negative Binomial Regression" 2012)

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