May 2019

Applications of the Club Model to the Economics of Terrorism

Alexander Daniel Ray
Clemson University, aray5@u.rochester.edu

Follow this and additional works at: https://tigerprints.clemson.edu/all_dissertations

Recommended Citation

APPLICATIONS OF THE CLUB MODEL TO THE ECONOMICS OF TERRORISM

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Economics

by
Alexander D. Ray
May 2019

Accepted by:
Dr. Michael Makowsky, Committee Chair
Dr. Scott Barkowski
Dr. Robert Fleck
Dr. F. Andrew Hanssen

Preface

Terrorism remains a controversial topic both in academia and in the public discourse. Building on previous social science research investigating the determinants of terrorism in a rational choice framework, I analyze terrorism through an economist's lens that assumes terrorist groups to be rational actors that use violence as a tool in pursuit of tangible political or ideological goals.

In the first chapter, I develop an economic model for the formation of alliances between terror groups, and why intergroup cooperation is more effective if the groups have a similar ideology. Groups cooperate in order to increase access to resources while maintaining the advantages of decentralization in the face of counterterrorism pressure. I empirically test the hypothesis that religious groups obtain greater operational benefits from cooperation than secular groups on a panel dataset containing detailed information on 255 terrorist groups between the years 1970 and 2014, finding that alliances formed by religious groups are more effective than those of their secular counterparts.

In the second chapter, based on the so-called "club model of terrorism," which postulates that terror groups may improve their capabilities by extracting sacrifices that screen out low commitment members and thus mitigating defection and free riding costs, I estimate the effects of these "commitment devices" on the incidence of terrorism. I do this by employing various observable proxies as exogenous shifters of the marginal product schedules of the ability of groups to induce commitment from members. Using a panel dataset containing all documented incidents of terror attacks from 2007-2013 at the state-year level, I find that the effects of the commitment devices are significant, both on overall terrorism and on suicide terrorism.

The third chapter examines the relationship between party politics and terrorism. Combining economic theory with historical case studies of militant organizations in Lebanon, Turkey, Israel, Palestine, Spain, Ireland, and South America, I analyze the interplay between terrorism and party politics. Within a "market" framework that includes a supply side and a demand side, I describe how events affecting the marginal costs and marginal benefits of violence may induce an entry into, or exit from, terrorism.

Dedication

To my parents, Craig and Nancy

Acknowledgments

I would like to express my appreciation to my four committee members, Michael Makowsky, Robert Fleck, Andrew Hanssen, and Scott Barkowski, for their patience and guidance. I am grateful for the time and effort they have invested in me and my work. They have each set an example of what it means to be a good economist which I hope to live up to. The Clemson University Department of Economics is a vibrant community and I have learned so much from the faculty and fellow graduate students. I am indebted to the Department for taking a chance on me.

No words can express my gratitude to Michael Rizzo, who is the reason why I became an economist. I remember, like it was yesterday, attending the first lecture of his Econ 108 class my very first day of college at the University of Rochester. I signed up for his class not out of any predilection for economics, but simply to add some variety to a schedule filled with courses related to ancient history and the Classics, my passions in life. In the first couple minutes of that first Econ 108 class, Rizzo joked that within a couple weeks most of the 300 students sitting in front of him in that large Goergen Hall lecture auditorium would either be browsing Facebook during lecture or skipping class altogether. Well, I for one became hooked on economics that day, and showed up to each and every class thereafter, sitting in the front row eager to learn. He is the person responsible for teaching me economics and, more importantly, how to how think like an economist. His moral compass, passion for liberty, intellectual honesty, contrarianism, and steadfast dedication to his students has been an inspiration to me ever since. He instilled in me a healthy sense of skepticism and a love for classical liberalism. I was far from his most talented or impressive student, but he always believed in and encouraged me nonetheless, and I am proud to call him my mentor, teacher, and friend. If I turn out to be half as good an economist as him I will consider myself to be a success.

Chris Pillitere and Nate Mulberg have been my most loyal friends, and I am lucky to have them in my life. I have never had much to offer them, but they have always tolerated my quirkiness and provided me

Table of Contents

List of Tables

List of Figures

Chapter 1

The Role of Ideology in Terrorist Alliance Networks

Terrorist groups form alliances with one another in order take advantage of mutual gains from trade, thereby increasing group capacity in pursuit of their goals. Based on a club model of terrorism, I argue that the costs of forming alliances are heterogeneous by the ideological affiliation of the group, whether religious or secular. Analyzing a panel dataset containing detailed yearly information of over 250 militant organizations between the years 1970-2014, I estimate the benefits derived from alliances for both secular and religious groups. I find that, conditional on a given investment level, religious groups get higher output from alliances than secular groups. For example, on average, the yearly fatality rate (measured as the number of inflicted fatalities per attack) for a religious groups with 5 allies is predicted to be 56% higher than a religious group with no allies. The fatality rate for a religious group with at least 10 allies is expected to be more than twice as high as a religious group with no allies. On the other hand, I find that while secular groups experience modest returns for the first few alliances formed, they then receive negative returns to cooperation beyond 5 alliances. These results suggest that to the extent counterterrorism policies are aimed at disrupting terror networks, these policies should have the most significant impact when religious terror networks are targeted.

JEL categories: D74; H41; H56; Z12; Z13

Keywords: Terrorism, social networks, club goods, religion, national security

1.1 Introduction

One of the most difficult aspects of fighting terrorism is the fact that terror groups are generally small and not centrally organized, so if one part of a group is shut down by authorities, the rest of the group can continue functioning. This decentralization has a down side, however, in that it makes it harder for a terror group to mobilize resources for large-scale or difficult operations. One of the methods terror groups use to address this weakness is to use cooperation with other groups. This increases groups' access to resources while maintaining some of the advantages of small size and decentralization.

An important recent example of terror group cooperation is that between Hamas and Hezbollah. In June 2018, it was divulged that Israel had recently appealed to the United Nations Security Council, insisting that Palestinian terror group Hamas had been cooperating with Hezbollah in Lebanon to build missile factories and train thousands of fighters (TOI (2018)). Israel also accused Saleh al-Arouri, the deputy head of Hamas's political bureau, of routinely visiting Lebanon and meeting with Hezbollah's leader, Hassan Nasrallah, for military and political coordination (Khoury and Landau (2018)). According to Israel's Ambassador to the UN Danny Danon, "the cooperation between Hamas and Hezbollah crosses borders. We are witnessing the results of the Hamas terror government in Gaza, and now Hamas is tightening its ties with Hezbollah with the blessing and support of Iran, which is working to entrench its own forces also on Lebanese soil".

Extending back into the early 1990s, the cooperative relationship between Hamas and Hezbollah is illustrative because it reveals the increased operational effectiveness that a terrorist group may receive through collaboration. When members of Hamas and Palestinian Islamic Jihad (PIJ) returned to Israel in 1993 following a year training alongside Hezbollah, the casualties per attack for these two groups increased from about two to around ten (Horowitz and Potter (2014)). Between 1993 and 1999, Hamas carried out 18 suicide attacks against Israel, and then 60 more during the Second Intifada (*Al-Aqsa Intifada*), which began in September 2000 (Pedahzur et al. (2008), 92).[1] In return for their support, Hezbollah was able to boost its prestige and presence in the West Bank and Gaza Strip. In April, 2001, for example, at least two Hezbollah-style roadside bombs were detonated in the West Bank; Palestinian sources claimed they were set by activists working directly for Hezbollah (Rees (2001)).

---

[1]For historical context, in December 1992, members of the Izz ad-Din al Qassam Brigades, the military wing of Hamas, abducted and killed an Israeli police officer. The Israeli government responded by deporting 400 leaders of Hamas and PIJ to Lebanon, and it was here that they came into close contact with Hezbollah leaders (Pedahzur et al. (2008), 91-92; Pedahzur (2005)). This meeting was especially consequential, because it was from these Hezbollah leaders that the Hamas militants received instruction on how to effectively employ suicide tactics, knowledge which they imparted to their associates when they were permitted to return to Israel the following year due to international condemnation of the expulsion.

In this paper, I assess whether the benefits derived from cooperation between terrorist groups are heterogeneous by the ideological affiliation of a group. In my empirical analysis, using a panel dataset containing yearly information on hundreds of terror groups I measure the effects of cooperation on group productivity, finding that alliances made by religious groups are more effective than those made by secular groups. This study intends to make two contributions to the terrorism literature. First, I offer an economic justification for the formation of alliances between terror groups. Second, I test for heterogenous effects of coopoeration by ideology type.

The reason why organizations would seek to cooperate is intuitive: due to the difficulty in overcoming a size disadvantage, clandestine micro-governments (such as terrorist groups) have an incentive to achieve their goals by means of factors which are asymmetric and less capital-intensive (Nozick (2013)). Brokering horizontal relationships with other groups is therefore a substitute for achieving economies of scale through the normal method of vertical integration and growth.

The key distinction between the phenomenon of terrorism and other types of crime is the underlying motivation. Unlike normal criminal gangs or crime syndicates, terrorists are generally motivated by ideological or political objectives rather than financial interests (Enders and Jindapon (2010); National Consortium for the Study of Terrorism and Responses to Terrorism (START)). *Ideology* can be defined as the ideas or aims that constitute the basis of a worldview held by an individual or a group. Broad ideological categories that have historically been major drivers of terrorism include religious extremism, national separatism, and Marxism-Leninism. Ideology, as the raison d'être of terrorism, must then first and foremost be understood as the fundamental *outcome* pursued by a terror group, the main variable in a group's utility function that it seeks to maximize given a set of constraints.

Borrowing the methodological approaches found in models of rational choice theory and the economic theory of clubs, in this paper I argue that in addition to being the pursued outcome of terrorism, ideology also functions as a *production technology* that affects the quality of a terror group. For economic analyses of terrorism, the rational choice framework suggests that actors (individual terrorists or terrorist groups) have stable preferences over alternatives and chooses from among the best available alternatives (van Um (2015), 2; Anderton et al. (2009), 28). According to the premises of a rational choice framework of terrorism, then, I argue that a group's ideological affiliation can be understood as a *production technology* to the extent that it facilitates the transformation of inputs (e.g., labor and capital) into a final product, typically violence against non-combatants in pursuit of a political agenda.

Extant literature analyzing the behavior of terrorism within the rational choice framework models

terror groups as clubs that face high costs due to defection and free-riding which they mitigate by deploying devices that screen out low-commitment members. To this end (assembling a coalition of highly committed operatives), a religious ideology provides two key advantages to a terror group relative to a secular ideology. Iannaccone and Berman (2005), Berman and Laitin (2008), and Berman (2009) argue that religion is an effective node around which to organize a militant sect because many common features of religion–such as initiation rites, codes of behavior, and the provision of social services–are highly useful mechanisms in screening out low-commitment individuals from the group, thus giving religious radicals a comparative advantage in solving free-rider problems and assembling coalitions of highly committed operatives. Building off of this club framework, Raynold (2018) takes this reasoning a step further, suggesting that due to the supernatural nature of religion, the "commitment enhancement technologies" at the disposal of religious terror groups are qualitatively superior to those of secular groups. It naturally follows that religious terror groups should be more effective in producing political violence than secular terror groups for any given investment level, a supposition that has found empirical support (Berman and Laitin (2008)).

On a secondary level, because religious groups can screen out low commitment and ineffective members more effectively than secular groups, we should expect them to be more desirable allies. In other words, the ideology of a group (religious or secular) functions as a proxy for ally quality. In this regard, secular ideologies are maladaptive as alliance-building technologies. Religious groups, on the other hand, have a comparative advantage in forming alliances because, given their use of superior technologies at the club level to motivate commitment, all else equal they are seen as relatively valuable partners. For this reason, alliances made by religious organizations are higher quality than those made by secular types.

I empirically test the hypothesis that religious groups obtain greater benefits from cooperation than secular groups on a panel dataset containing detailed information on 255 terrorist groups that existed at any time between the years 1970 and 2014. My analysis focuses on distinguishing whether the benefits from cooperation materialize at the extensive margin or at the intensive margin. The extensive margin refers to initial decision of a terrorist group to pursue alliances, while the intensive margin captures whether there is a heterogeneous effect of cooperation as additional alliances are formed. This is a meaningful distinction, and prudent counterterrorism policy ought to depend on which margin has the greatest effect on terrorist productivity. At both the extensive and the intensive margins, I compare the benefits derived from alliances for both types of groups, religious and secular. The primary outcome variable that

4

I use as a measures of a group's 'productivity' is $\frac{fatalities_{it}}{attacks_{it}}$, that is, the average number of fatalities inflicted by group i per attack, for each year t. This can be thought of as a group's "fatality rate" (Berman and Laitin (2008); Berman (2009)).

I find that the fatality rate for a religious group with 5 allies is predicted to be 56% greater than a religious group with no allies. Religious groups with at least 10 allies are shown to have a fatality rate that is 78% higher than religious groups with 5 allies. This implies that religious groups with at least 10 allies are over twice as productive as those with no allies (a 133% boost in fatality rate). On the other hand, my results suggest that secular groups experience negative returns to cooperation beyond 5 allies. The implication of this study is that the optimal network size for secular groups is smaller than for religious groups. The results also suggest different policy prescriptions for each type of organization. Because religious organizations are shown to derive greater benefits from networks than secular organizations, policy makers may wish to focus on crippling religious networks as well as try to undermine the ability (i.e., raise the costs) of religious groups to form alliances.

1.2   Model

1.2.1   A Club Theory of Terrorism

The argument I put forth in this study, that the benefits of intergroup alliances are heterogeneous by ideology type, is built upon the club theory of terrorism. Building off of Iannaccone (1992)'s and Berman (2000)'s theory of religious clubs Iannaccone and Berman (2005), Berman and Laitin (2008), Berman (2009) argue that militant religious clubs efficiently mitigate free-rider costs and defection concerns by deploying devices that screen out low-commitment members. These screening techniques, referred to as *sacrifice and stigma* Iannaccone (1992) or *commitment inducement technologies* (Raynold (2018)), raise the costs of club membership sufficiently high so that low commitment individuals will not choose to join.

Sacrifice and stigma techniques take the form of costly prohibitions, stigmatizing behavioral requirements, or required sacrifices. Restrictions on diet, distinctive clothing, sabbath laws, and regulations on socializing with non-members are examples of seemingly gratuitous or "extremist" sacrifices required by religious clubs that in practice raise the opportunity costs of membership and hence help solve free-rider problems (Iannaccone (1992)). Both in the context of nonviolent conservative religious communities

(such as the Amish and Ultra-Orthodox Jews) and in the context of militant religious terrorism, *sacrifice and stigma* is designed to distort the incentives of members by reducing their outside options, thus serving as barriers to membership ensuring that only committed and trustworthy individuals are admitted. For militant religious groups, the sacrifices signal to the leadership that its members are trustworthy, giving the group a comparative advantage in the joint production of political violence because it can undertake logistically complex missions with minimal risk of defection.[2]

Clubs may also induce commitment through the provision of local social services which provides an incentive to members not to defect. Terror groups such as Taliban, Hamas, Hezbollah, and Muqtada al-Sadr's Mahdi Army have proven to be proficient suppliers of local public goods in areas with weak central government authority (Berman and Laitin (2008)). Public goods provision by a terror group functions as a substitute for non-sect consumption and improves its credibility by signaling its competence. Most importantly, as a complementary technology to *sacrifice and stigma* it induces commitment and mitigates defection risks, giving a group a comparative advantage in producing violence (Iannaccone and Berman (2005). Using data on terrorist activity in Israel in Lebanon between 1968 and 2006, Berman and Laitin (2008) test the hypothesis that a religious extremist group is a more effective and efficient producer of terrorism when the group provides local public goods, finding that the two social service providing organizations, Hamas and Hezbollah, are far more lethal than all the other terror groups operating in Israel which do not offer social services (including Palestinian Islamic Jihad (PIJ), Popular Front for the Liberation of Palestine, Fatah, and Democratic Front for the Liberation of Palestine). Morales et al. (2018) use country-level data to estimate the effect of *sacrifice and stigma* and social service provision on the incidence of terrorism using cross-sectional data, finding robust evidence in support of the hypothesis that the deployment by terror groups of these commitment inducement devices increases the frequency and lethality of terror attacks. Ray (2019) tests the same hypothesis using a panel dataset containing all documented incidents of terror attacks from 2007-2013 at the state-year level, finding that *sacrifice and stigma* has a statistically significant impact on both the incidence of overall terror attacks and the incidence of suicide terrorism in particular, while social service provision only has a significant effect on suicide terrorism.[3]

---

[2]The costs associated with defection extend beyond the immediate threat that the defector will hand over secret information to authorities. Defections also reinforce doubt in the minds of existing members of the worthiness of commitment to the group itself, thereby leading to a lowering of the maximum amount of utility that members are willing to forgo to remain in the group. A reduction in the average level of commitment within the group then follows, implying increased easy-riding and further reductions in average commitment levels (Raynold (2018)).

[3]This latter result is striking because it validates one of the most compelling predictions made by Berman and Laitin (2008), namely that terror groups have a comparative advantage in sending operatives on risky suicide missions when they provide social services that create incentives mitigating defection.

Raynold (2018) notes that just as for religious terror groups, defection poses an equally existential threat for non-religious terrorist groups, who deploy their own commitment inducement technologies to mitigate the risk. While *sacrifice and stigma* technologies are therefore essential inputs into the production of violence for both religious and secular organizations, Raynold contends that religious groups have a comparative advantage in commitment enhancement because of their ability to promise non-falsifiable, supernatural rewards in return for commitment. This implies that to an extent, religious extremism ought to be viewed as a distinct category of terrorism from secular extremism.

Adopting the intermediation framework developed by Raynold (2013), which holds that due the supernatural motive for religiosity, religious sects ought to be modeled as *faith intermediaries* rather than clubs, Raynold (2018) argues that religious terror groups have a fundamental advantage over their secular counterparts in inducing commitment from members.[4] Aware that its adherents are motivated not by secular rewards but by supernatural rewards that cannot be verified, leaders of religious sects have greater flexibility to adjust the incentive structure within the group to align with its current preferences. Affiliation to a religious sect is therefore ultimately based on trust without verification, an idea that has been referred to as a "meta-credence good" (Ekelund Jr et al. (2006)). Non-religious terror groups, on the other hand, do face a verifiability constraint, because members are generally able to independently evaluate the credibility of the secular rewards promised by the leadership, thus limiting the magnitude and scope of promises that the leadership is plausibly able to make. As such, the commitment enhancement technologies utilized by religious groups to motivate commitment will tend to be more potent than those utilized by secular groups, leading to greater success in assembling coalitions of highly committed operatives.

There is empirical evidence to support this observation that religious groups consist of higher quality members than secular groups. Berman (2009) finds that between 1968 and 2007, religious groups designated as terror organizations by the US State Department perpetuated 1,855 attacks that killed 9,689 people, a rate of 5.2 fatalities per attack. During this same time period, secular groups conducted 2,077 attacks, killing 2,668 people, a fatality rate of 1.3.[5]

Additionally, Berman and Laitin (2008) observe that between 1968 and 2006, Hamas and Hezbollah, two organizations notable for social service provision, averaged 5.4 fatalities per attack from 1968-2006. During this time period all other Palestinian groups, none of which are social service providers, averaged

---

[4]What makes a religious denomination a faith intermediary is the fact that the production of supernatural hope is its primary motive.

[5]These statistics are quoted in Raynold (2018).

only 2.3 fatalities per attack.[6] During the time period Hamas and Hezbollah also conducted more suicide attacks (63 and 44, respectively), and had an average fatality rate for these attacks (7.2 and 17.3, respectively), than the other groups. Of the other groups, the PIJ conducted 37 suicide attacks, with a fatality rate of 4.0. Berman and Laitin (2008) and Raynold (2018) attribute this relative efficiency of Hamas and Hezbollah to its ability to ensure high levels of average member commitment.

1.2.2 Why Terrorist Groups Form Alliances

The reason terror organizations form alliances is in order to take advantage of scale economies without assuming the vulnerabilities of scale. Accessing scale effects is generally costly for groups given their clandestine nature and the risk of exposure to counterterrorism forces that scaling in size would imply. Unlike a regular military that can efficiently expand the scope of its operations through a horizontal 'merger' between two infantry divisions, or a vertical 'merger' between, for example, an intelligence unit and a combat unit, similar consolidations would undo the comparative advantage of a terrorist group because of the increased exposure to counterterrorism forces that this would necessarily imply. Previous scholarship has noted many potential benefits to cooperation, including improving group lethality (Asal and Rethemeyer (2008), Horowitz and Potter (2014)) and longevity (Phillips (2014), Acosta (2016a)).

Organizations cooperate in ways such as conducting joint attacks (Karmon (2005)), exchanging tactical and technological information and weaponry (Asal and Rethemeyer (2008); Horowitz (2010); Asal et al. (2012); Phillips (2014); Horowitz and Potter (2014)), receiving funding, and sharing training grounds (Horowitz and Potter (2014)). Sageman (2004) highlights role that networks play in success of global Salafi jihad. Acosta and Childs (2013) emphasize the significance of terror networks in spreading influence and perpetuating the phenomenon of suicide attacks, explaining that the quality of a group's network increases with the number of connections and relationships it has to other terror organizations, so that the more connections a group has, the more successful it is at spreading its ideology to like-minded organizations and overcoming collective action problems.

---

[6]The Palestinian Islamic Jihad (PIJ), a group that shares the same theology of Hamas, averaged 2.9 fatalities per attack. The Popular Front for the Liberation of Palestine (a secular, socialist organization) averaged 2.8 fatalities per attack. Fatah/Palestine Liberation Organization (secular group) averaged 2.7, and the Democratic Front for the Liberation of Palestine (secular, socialist group) averaged 1.0.

1.2.3   How Ideology Affects Alliances

Scholarly research has noted that cooperation tends to occur between ideologically-similar group (Acosta and Childs (2013)), especially if the partners are both Islamic (Asal et al. (2011). Acosta and Childs (2013) contend that the single most important characteristic that determines the 'network expansion' abilities of a terrorist is *ideological congruence* within an existing network. But the mere fact that alliances are established along ideological lines warrants a more refined explanation, because the precise mechanism by which ideology influences alliance formation is not self-evident. One possible mechanism is that two ideologically-congruent organizations that share a political objective cooperate in order to pursue that objective by joining forces. Alternatively, two organizations may not necessarily care about the aspirations or ideology of the other, but cooperate simply to take advantage of mutual gains from trade. For the purpose of my model, I assume the latter, that cooperation occurs to exploit mutual gains from trade, and hence I remain agnostic concerning the extent to which cooperation transpires on the basis of a shared objective.

The theoretical framework described in Section 1.2.1 suggests that the ideology of a group sends a signal to others regarding its quality. In other words, ideology functions as a *proxy for ally quality*. Based on Equation **??**, because a religious group is able to screen out low commitment and ineffective members more efficiently than a secular group, it can be expected to be a higher quality ally, meaning that conditional on a given level of investment in alliance-formation, religious groups are more valuable partners than their secular counterparts. What this implies is that religious groups will be: 1) more effective overall; 2) more effective as allies; and 3) more inclined to invest in alliance-formation as a way of taking advantage of scale economies.

Testable hypothesis: *Religious groups receive greater benefits from alliances than do secular groups.*

1.2.4   al-Qaeda and the Global Salafi Jihad

An example of a sectarian movement that has spawned groups which have succeeded in exploiting networks to great effect is modern radical Islamism. Islamic-based terrorism can take many forms, but generally falls into one of two categories. The first is a localized form of *jihad* that typically targets a foreign occupation in Muslims lands or a secular Muslim ruler. Examples of these straightforward, localized jihads include: the jihad in the 1980s against Russian intervention in Afghanistan; the Bosnian jihad from 1992-1995; the struggle for the liberation of Palestine; and jihads for the liberations of Kashmir and

9

Chechnya, respectively. While all of these conflicts are religious wars, they are not global in scope and many of the grievances expressed by the militants (e.g., persecution against minority groups, disputes over territory) are similar to those expressed by secular militants engaged in insurgency against a state.

This type of localized jihadism–a religious war directed against a *near enemy*–must be contrasted with the *global* brand of jihad that is associated with al-Qaeda. The global Salafi jihad–a struggle that seeks not the simple overthrow of a single state enemy, but the total destruction of Western civilization as a whole–was popularized by al-Qaeda no earlier than the late 1990s.[7] Taking its roots from the ideology of the Salafist movement, an ultra-conservative Sunni reform movement that developed on the Arabian Peninsula in the 18th century, al-Qaeda's basic motivation is to expel Western presence and influence from the Muslim world, overthrow "apostate" regimes in Muslim countries, and to establish a worldwide Islamic caliphate based on its own interpretation of sharia law (Rollins (2011)). [8]

The spiritual founder of the militant Salafi jihad was Sayyid Qutb (1906-1966), a leading member of the Egyptian Muslim Brotherhood in the 1950s and 1960s. An Egyptian, he insisted on the violent overthrow of the secular Egyptian government of Gamal Abdel Nasser. While Qutb had spent two years in the United States from 1948-1950 and despised the West, he had no interest in waging war against it. His goal was simply to wage war against the "near enemy," the apostate government in his own country (Sageman (2004), 8-14).[9]

While Qutb's direct influence was only on the Egyptian Islamic Salafi groups fighting the "near en-emy" (the secular government in Cairo), his influence extended as well to the global jihad movement through his student, the co-founder and current leader of al-Qaeda, Ayman al-Zawahiri al-Zawahiri is the link between Qutb's ideology of jihad against the "near enemy" and al-Qaeda's ideology of jihad against the "far enemy," the United States and Western civilization as a whole. An Egyptian, al-Zawahiri joined the Muslim Brotherhood as a youth, and in the 1980s became the leader of the terror group "Egyptian Islamic

---

[7]In fact, the development of global Islamism initially highly controversial among many even within the militant Muslim revivalist movements (Sageman (2004), 44-45).

[8]As an imperfect but convenient parallel, the essence of the Salafi Islamic revivalist movement may be compared to the 16th century Protestant Reformation within Christianity. Like the Protestant reformers' accusations against the Catholic Church, the Salafists reject what they consider to be innovations that crept into the Muslim faith over the past 1,400 years and which, in their view, oppose clear Quranic teachings. The Salafists promote an autodidact approach to the Quran and hadith and a return to the purer teachings of the "forefathers" (the salaf). This entails a wholesale rejection of the centuries-old Islamic religious establishment and a more literal, less compromising, and stricter interpretation of the Quran, similar to the way in which the Protestant reformers advocated a Christianity that derived from Scripture alone without the novelties which they believed had developed within the medieval Church. While all adherents to Salafism take a fundamentalist approach to Islam, not all Salafists support armed jihad.

[9]Qutb's influence spread throughout Salafi groups in his country, and his disciples strategized on how to effectively implement his vision of establishing an Islamic government in Egypt. In 1966, he was convicted of conspiracy to assassinate President Nasser and was executed by hanging. Qutb's influence cannot be understated; for example, it was one of his student's, Muhammad Abd al-Salam Faraj (1954-1982), who was the head of the Tanzim al-Jihad terror cell which assassinated President Anwar al-Sadat in 1981 (Sageman (2004), 15).

Jihad" (EIJ) (Sageman (2004), 26). In the mid-1980s al-Zawahiri went to Afghanistan to fight alongside the mujahideen against the Soviets, and it was in Afghanistan that he became close with Osama bin Laden, the chief fundraiser for the jihad in Afghanistan (Sageman (2004), 35). Both men shared a vision for expanding the notion of jihad and the "globilization" of martyrdom operations beyond that of a simple war waged against a foreign occupying power or an apostate Muslim government (Moghaddam (2009)).[10]

Following the end of the Afghan war, al-Qaeda moved its headquarters to the Sudan. From the Sudan the seeds of what would become a global network of terror operations began to take shape. Al Qaeda had training camps in the Sudan, Afghanistan, Bosnia, Yemen, and the Philippines, and was expanding the network of its alliances (Sageman (2004), 44). For example, al Qaeda established relations with the Egyptian Islamic Group (EIG), which was led by Khalid Sheikh Mohammed.[11] The association with the EIG was to prove consequential by linking bin Laden with jihadi Khalid Sheikh Mohammed, who a decade later would be the mastermind behind the 9/11 attacks.

This historical narrative is relevant to this study because it reveals the incentives facing a terror movement that is globally oriented. With transnational political goals that often involve waging war on multiple continents simultaneously, a Salafi jihadi group is able to most efficiently obtain scale benefits not through horizontal or vertical merging with other groups, but rather through a decentralized global network of alliances. Changes in the costs and benefits of two factors in particular encouraged al-Qaeda to adopt decentralization as its guiding operational principle. First, heightened pressure from counterterrorism authorities, especially following 9/11, increased the costs to al-Qaeda of expanding its operations in the manner of a regular army. For example, in the 1990s, prior to 9/11, it was common for bin Laden to send his own operatives to various Muslim countries to assist and direct local Islamist groups (Zimmerman (2013)). This type of direct meddling became increasingly impractical for al-Qaeda as time went on, and consequently it adopted a policy of exerting influence in local affairs by forming working relationships with small, autonomous local groups.[12]

Second, the invention of the Internet gave al-Qaeda a platform by which it could, with low cost and

---

[10]See also Hoffman (2004) and Horowitz (2015).

[11]The EIG formed during a split within the ranks of the Egyptian Salafists after the assassination of Sadat: the Salafist faction stationed in Cairo went on to establish itself as the EIJ, while the network centered in Upper Egypt became the EIG.

[12]Testifying in a hearing on the Worldwide Threat in 2000 before the Senate Select Committee on Intelligence in February, 2000, then-director of the CIA George Tenet remarked that "[al-Qaeda] and other terrorist groups are placing increased emphasis on developing surrogates to carry out attacks in an effort to avoid detection". In a 2004 testimony, before the Senate Select Committee, Tenet warned of the growing threat posed by "small local groups, with limited *domestic* agendas, that work with international terrorist groups in their own countries. These far-flung groups increasingly set the agenda, and are redefining the threat we face. They are not all creatures of bin Laden, and so their fate is not tied to his. They have autonomous leadership, they pick their own targets, they plan their own attacks. [al Qaeda] is a learning organization," and facing heightened counterterrorism pressure has induced it to "transform the organization into a loose collection of regional networks that operate more autonomously" (Zimmerman (2013)).

without the need for normal expansion, exert global influence and coordinate the activities of affiliates.[13] In response to changes in these two constraints, al-Qaeda embraced a policy of contracting horizontally with a worldwide network of dispersed cells, making decentralized networks a viable substitute for group size.

Zimmerman (2013) details how the resilient, adaptive, and complex structure within which social ties and informal, personal relationships between individuals across different groups strengthen the al-Qaeda-centered network. Such informal human networks include relationships built in mosques and *madrasas* (religious schools). These horizontal personal relationships, sustained by a sense of shared experience and a shared worldview based on the ideology of Islamism, produce social capital which in turn facilitates cooperation between loosely affiliated organizations within the decentralized network, as well as between militants and non-violent ideological sympathizers.[14] What my framework suggests is that this cooperation occurs not because these affiliates necessarily have identical strategic objectives, but rather because the ideology of Islamism, selected at the organizational level by various groups as a guiding principle to both optimize commitment among members and lay out an agenda of organized political violence, has the secondary advantage of generating social network externalities that allows disparate groups to access scale benefits through mutual gains from exchange.

1.3   Research Design

1.3.1   Data

I test my hypothesis on a panel dataset containing detailed information on 255 terrorist groups that existed at any time between the years 1970 and 2014. Titled the *Revolutionary and Militant Organizations Dataset (REVMOD)*, the data were compiled by Acosta (2016a).[15] Tracking each group's attributes over

---

[13]al-Qaeda was a pioneer in the use of social media by a terrorist group to pursue its goals. In a 2007 speech quoting Singaporean diplomat Kishore Mahbubani, then Secretary of Defense Robert Gates asked "How has one man (Osama bin Laden) in a cave managed to out-communicate the world's greatest communication society?" (Al-'Ubaydi et al., 2014)

[14]Over time the organization developed a sophisticated, self-sustaining business enterprise that no longer relied on the vast personal fortune bin Laden himself, but instead on diversified investments and numerous funding streams, most of which derive from benign sources. Since 2004 the primary method of financing for the organization was through donations from sympathizers and Islamic charities (Gandel (2011)). According to the 9/11 Commission,

> [B]y 2004, al Qaeda financed itself by raising money from "witting and unwitting donors, mosques and sympathetic imams, and nongovernment organizations such as charities," says the report. Intelligence reports reveal a financial web that is nearly impossible to track, as the money is distributed as fast as it is raised by a network of couriers. Each strand in the web is taken down and distributed as fast as it is woven. There is no war chest to discover and no bank from which al-Qaeda draws funds (Benner (2011)).

[15]Acosta provides a detailed codebook accompanying the dataset, in which he defines each variable and notes the sources he referenced in constructing each (Acosta (2016b)).

time, the unit of analysis is terror organization i in time t. The quantitative attributes tracked include attacks, suicide attacks, inflicted casualties, suicide attacks, network ties, age, state sponsors and safe havens.[16] Each of these variables was constructed by cross-referencing numerous sources, such as the Global Terrorism Database (GTD) of the National Consortium for the Study of Terrorism and Responses to Terrorism (Database (2016)), RAND Corporation's Database of World Terrorism Incidents (DWTI), and National Counterterrorism Center (NCTC), among others. Table 1.1 provides summary statistics and shows that over the entire sample, the mean number of inflicted casualties per year is 30.76, and the mean number of attacks per year is 10.16.

I test my hypotheses by comparing the relative productivity of religious and secular groups. Ideology classifications are provided for each terror organization in my dataset. These ideology types include *Islamic, Ethnonationalist, Leftist, Right-wing,* and *Anarchist.* These classifications are not mutually exclusive; each ideology may potentially be compounded with a second ideology for a single group.[17] Summary statistics for all of the variables used in this study can be found in Tables 1.1 and 1.2.

Based on the definitions supplied Acosta (2016b), a group is considered Islamist if it subscribes to a variant of political Islam. Ethnonationalism refers to groups pursuing an agenda involving secession, autonomy, or the liberation of a specific identity group currently ruled by a different identity group. Leftism is defined as subscribing to an ideology such as Marxism-Leninism, Maoism, or radical environmentalism. Anarchism is defined as seeking the collapse of a given political system, and right-wing denotes groups that are ultranationalist, conservative, or seeking to preserve the status quo. In my analysis, I consider a group to be *religious* if it subscribes to a form of political Islam. I also designate to be *religious* groups that have both Islamist and ethnonationalist elements. My sample of *secular* groups therefore consists of groups that are Leftist and ethnonationalist (excluding groups that are both Islamist and ethnonationalist).

1.3.2 Measures of Alliances

The most important explanatory variable used in my empirical analysis is the variable (network size)$_{i,t-1}$, which is a count variable denoting, for each group i in time t, the number of direct network connections (allies) it maintains with other non-state organizations. Acosta (2016a) defines a tie as a "de-

---

[16]State sponsorship is defined as the intentional assistance–material or diplomatic–to a militant organization by a state. A noteworthy example of state sponsorship of terror is the government of Iran, which sponsors both Hezbollah and Hamas.

[17]Only one group in the dataset, the 'Eritrean Liberation Front', is classified as holding three ideologies, Islamist, ethnonationalist, and Leftist.

clared formal alliance, affiliation, or partnership between two organizations." Other forms of documented collaboration, like co-sponsored attacks and sharing a training camp, also demonstrate a network tie, which is thus identified as a 'conduit' that link together two or more groups.[18] A list of the organizations with the highest number of mean ties over the entire sample is displayed, along with the associated ideological affiliation for each, in Table 1.3. *Ties* ranges from 0 to 39, with an average of 2.81 and standard deviation of 3.41. al-Qaeda is by far the most well-connected group, followed by Tehrik-i-Taliban Pakistan, and then Taliban. In its first year of existence, 1988, al-Qaeda had seven ties, with groups such as Haqqani Network, Hezb-e Islami Gulbuddin, and Egyptian Islamic Jihad. Its network connections increased each subsequent year, so that by 1995 it had 20 established ties and reached its pinnacle in 2008 when it had 39 ties. Table 1.2 displays summary statistics for the *allies* variable, broken down by ideology type. Histograms showing the mean level of logged ties over the period 1970-2014 across all terrorist groups is displayed in Figure 1.1.[19] Figure 1.2 shows histograms of the mean level of ties broken down by the three broad ideology types, and in Figure 1.3 I show histograms of ties for each specific ideology. Figure 1.4 then shows the trend of alliances over time, separated by general ideology type (religious vs. secular).[20]

Of the general, overlapping categories, Islamists average the highest amount of yearly ties maintained at 3.92, followed by ethnonationalists and Leftists, with 3.21 and 2.60, respectively. However, when al-Qaeda is removed from the sample, the mean level of ties for Islamists drops by almost 10%. Further, the sub-category of *Religious-ethno* (those organizations which have both Islamist and ethnonationalist motivations) averages about 16% more alliances than the *Pure Islamist* type even with al-Qaeda included in the sample, and 38% when it is not included.

As opposed to a simple enumeration of allies, the concept of *eigenvector centrality* describes the "quality" of the ties. Eigenvector centrality captures how well-connected a node's connections are, so that being connected to "popular" friends gives one a higher score than being connected to unpopular friends. I anticipate that the costs of achieving economies of scale through cooperation decrease as more consequential allies are obtained because connections to important actors in a network should permit higher-quality information and resources to diffuse through the cooperative relationships. Previous stud-

---

[18]The sources which Acosta (2016b) referenced to construct this variable include: Alexander and Swetnam (2001); Byman (2005); Gunaratna (2003); Hoffman (2006); Jones and Libicki (2008); Karmon (2005); Kushner (2003); Memorial Institute for the Prevention of Terrorism (MIPT); Radu and Tismaneanu (1990); Salehyan et al. (2011); The Institute for the Study of Violent Groups (ISVG); The National Counterterrorism Center (NCTC); The National Counterterrorism Center (NCTC); Vice President's Task Force on Combating Terrorism (1988).

[19]In each histogram of *allies*, I use the log transformed value of this variable. I perform the transformation *log(allies + 1)* so that no zeros are dropped. This transformed variable can be understood as a group's *network size*, since every network must have at least one node in it.

[20]I remove al-Qaeda, an extreme outlier, from the sample.

ies have examined eigenvector centrality in the context of the productivity of terror groups. Horowitz and Potter (2014) find that groups with higher quality allies are more lethal than groups with lower-quality allies, but Phillips (2014) finds that the number of a group's allies is more important to its longevity than the quality of those allies.

While the dataset I employ for this study does not contain eigenvector centrality scores for each group-year observation, it does provide a list of a group's known allies for each year, and for each group-year observation I compute an eigenvector centrality score.[21]. In Table 1.2 I present the respective mean levels of this variable for each ideology type. This variable ranges from 0 to 0.612, with a mean of 0.03 and a median value of 0.

I also generate diagrams of the global terrorism network, for each decade starting in 1970, shown in Figures 1.6-1.11. The nodes displayed in the diagrams represent each terrorist group contained in my dataset, and links between them denote network connections. [22] In the figures the size of each node corresponds to its relative eigenvector centrality value. A key takeaway from these figures is how the relative influence of the main clusters fluctuates over time. In 2000, the Palestinian cluster was the most substantial.[23] The influence of the main Islamist cluster, centered around al-Qaeda, was minuscule in comparison, but subsequently became the most dominant. Explained in Section 1.2.4, the natural economic story that can be inferred from this is that counterterrorism pressure following 9/11 incentivized al-Qaeda to embrace a strategy of expansion through decentralized networks of alliances rather than expansion through group size, hence accessing scale benefits without taking on the usual vulnerability of scale through size.

1.3.3 Empirical Strategy

To test my hypotheses I estimate the benefits received from alliances for both religious and secular terrorist groups using a panel dataset for the 1970-2014 period. I specifically consider whether it is the *first* alliance that a group forms that is most consequential in increasing operational capacity, or whether the effect of alliances varies depending on the level of alliances. This reflects the distinction between *whether* to ally and *how much* to ally at the orgnaizational level, referred to as the *extensive margin* and *intensive* margin, respectively. To this end, I run two sets of regressions. To test the effect of alliances at

---

[21] I compute these scores using the social network analysis software package UCINET (Borgatti et al. (2002))

[22] I include in the diagram only those groups who maintained at least one tie in the respective years; I therefore remove all "isolates."

[23] The main actors among the Palestinians include the Palestine Liberation Organization (PLO), Fatah, Popular Front for the Liberation of Palestine (PFLP), Democratic Front for the Liberation of Palestine (DFLP), Hamas, and Palestinian Islamic Jihad (PIJ).

the extensive margin, I first utilize as my measure of alliances a simple indicator variable that takes a value of 1 if a group has at least one ally in a given year, and 0 otherwise. To test for the effect at the intensive margin, I include the count variable *allies* as an explanatory variable. To allow for a heterogeneous effect of this variable (for example, diminishing marginal returns) I include a quadratic term, *allies*^{2}.

I use as my primary outcome variable a measures of a group's 'productivity': $\frac{fatalities_{it}}{attacks_{it}}$, that is, the average number of fatalities inflicted by group i per attack, for each year t. This can be thought of as a group's "fatality rate" (Berman and Laitin (2008); Berman (2009)), and corrects for skewness in the overall number of yearly fatalities that may result if a single attack inflicts a particularly large number of fatalities (Horowitz and Potter (2014)).[24] Henceforth I refer to this variable as (*fatality rate*)$_{it}$. In addition, I also employ two other outcome variables: the number of yearly suicide attacks conducted by group i in year t; and, finally, the longevity of a group. Figure 1.5 displays the fatality rate trend over time, separated by general ideology type. The slope of the religious fatality rate trend is greater than the slope of the secular fatality rate trend, an interesting observation suggesting that religious groups have become relatively more effective over time.[25]

In my regression analysis, I separate terrorist groups into two categories: religious and secular. Based on the ideological classifications supplied by the author of my data (Acosta (2016a)), I denote as 'religious' all organizations that subscribe to a variant of political Islam. In this category I include both organizations that are solely Islamist, and those whose Islamism is compounded with an ethnonationalist ideology as well. Ethnonationalist and Leftist groups are the two main types of secular organizations.[26] I explicitly include the *religious* indicator in my regressions, and leave out the *secular* category, which therefore functions as the omitted ideology category.

To examine the effect of cooperation at the *extensive margin* (the participation decision) I estimate

$$y_{it} = \beta_0 + \beta_1 allies_{i,t-1} + \beta_2 religious_i + \theta X_{i,t-1} + \delta_t + \epsilon_{it}, \tag{1.1}$$
$$\scriptstyle 1/0$$

where *allies*$_{i,t-1}$ is a categorical variable that takes a value of 1 if group i has at least one ally in year
$\scriptstyle 1/0$

---

[24]Horowitz and Potter (2014) refers to this measure as a terrorist group's "efficiency."

[25]I remove the year 2001 from the sample, as this year's fatality rate for the religious type is extraordinarily high due to the 9/11 attacks.

[26]Because I count groups that are both Islamist anad ethnonationalist under the *religious* category, only groups which are *solely* ethnonationalist are placed in the secular category.

t, and 0 otherwise. To examine the effect of cooperation at the *intensive margin* I estimate

$$y_{it} = \beta_0 + \beta_1 \,(network\ size)_{i,t-1} + \beta_2 \,religious_i + \beta_3 \,(network\ size)^2_{i,t-1} +$$
$$+ \beta_4 (eigenvector\ centrality)_{i,t-1} + \beta_5 (eigenvector\ centrality)^2_{i,t-1} + \theta\,X_{i,t-1} + \delta_t + \epsilon_{it},$$

(1.2)

where $allies_{i,t-1}$ is a measure of the number of networks ties group i maintains in time $t-1$, and $allies^2_{i,t-1}$ is a quadratic term that allows for a non-linear relationship between alliances and the outcome variable. As an additional measure of cooperation, I also include linear and quadratic terms for the variable *eigenvector centrality*, signifying how well connected a group's allies are. In these equations, y_{it} is one of the three outcome variables, $(fatality\ rate)_{it}$, $(suicide\ attacks)_{it}$, or longevity. $religious_i$ is an indicator variable denoting whether a group has a religious ideology. δ_t is a year fixed effect.

A omitted variable that is likely correlated with both the outcome variable y_{it} and the regressor $allies_{i,t-1}$ is funding. Failing to account for this variable would therefore lead to a biased and inconsistent estimator. Yearly measures of the funding obtained by the groups in my sample are obviously not available. My dataset does contain two variables which, I argue, can be viewed as potential proxies for funding. $X_{i,t-1}$ is vector of these two control variables, the *number of state sponsors* and the *number of safe havens* for group i in time $t-1$. *state sponsors* marks the number of state sponsors that a group maintains. Previous literature has noted the strong connection between state sponsorship and a group's funding (Carter (2012); Asal et al. (2011); Phillips (2018)). *Safe havens* denotes the number of official harbors that state sponsors offer, or the "unsanctioned sanctuary that many organizations enjoy in failed states and other 'lawless' regions" (Acosta (2016b)). This is another potential proxy for funding, as territory offers access to exploitable resources.[27]

Another way that I attempt to address endogeneity concerns is to include an ideology dummy variable, $religious_i$, that functions as a fixed effect controlling for all time-invariant trends between the ideology types. A pertinent piece of information absent from my dataset, which this ideology dummy variable may address to a limited extent, is a measure for group size. I am unable to directly control for group size, however, because reliable yearly data on membership totals for covert militant groups simply do not

---

[27] Perhaps the most well-known case of a terrorist group exploiting its controlled territory for financial gain is Islamic State, which at its peak in late 2014 controlled more than 100,000 km^2 containing more than 11 million people (Jones et al. (2017)). The group obtained considerable financial resources from these holdings, especially from selling oil (Piven (2014); Barrett (2014); Laub (2016); Jones et al. (2017)), taxation (Jones et al. (2017)), extortion (FATF Report (2015); Jones et al. (2017)), kidnapping for ransom (Cohen (2014); FATF Report (2015)), and seizing bank holdings (Al-'Ubaydi et al. (2014); Force (2015)).

exist.[28]

In order to test my main hypothesis, namely whether there is a heterogeneous effect of allies between religious and secular terrorist groups, I next run an interaction model where the parameters of interest are the respective coefficients on the interaction between the measures of cooperation and the religious ideology indicator. At the extensive margin, I estimate

$$y_{it} = \beta_0 + \beta_1 \underset{1/0}{allies_{i,t-1}} + \beta_2 religious_i + \alpha_1 (\underset{1/0}{allies_{i,t-1}} \times religious_i) + \theta X_{i,t-1} + \delta_t + \epsilon_{it}. \qquad (1.3)$$

In this equation, parameter α_1 signifies the potential heterogeneous effect that ideology has on benefits from cooperation at the extensive margin. At the intensive margin I then estimate

$$y_{it} = \beta_0 + \beta_1 (network\ size)_{i,t-1} + \beta_2 religious_i + \beta_3 (network\ size)^2_{i,t-1} + \beta_4 (eigenvector\ centrality)_{i,t-1} +$$

$$+ \beta_5 (eigenvector\ centrality)^2_{i,t-1} + \alpha_1 ((network\ size)_{i,t-1} \times religious_i) + \alpha_2 ((network\ size)^2_{i,t-1} \times religious_i) +$$

$$+ \alpha_3 ((eigenvector\ centrality)_{i,t-1} \times religious_i) + \alpha_4 ((eigenvector\ centrality)^2_{i,t-1} \times religious_i)$$

$$+ \theta X_{i,t-1} + \delta_t + \epsilon_{it}.$$

$$(1.4)$$

In this equation, parameters α_1, α_2, α_3, and α_4 signify potential heterogeneous effects that ideology has on benefits from cooperation at the intensive margin.

The outcome variable *(suicide attacks)*$_{it}$ is an event count, and hence a count model is a more suitable estimation technique to use than OLS when estimating those outcomes. Because I have panel data and would like to control for time trends, I employ a Poisson regression; this estimator does not suffer from the incidental parameters problem that may result from the inclusion of fixed effects, and hence provides consistent estimates, unlike a negative binomial regression (Greene (2004), Cameron and Trivedi (2013)). The outcome variable (*fatality rate*)$_{it}$ is not an event count; for these regressions, I use OLS with the three

---

[28]In their study concerning the reasons why terror groups for alliances, Asal et al. (2011) collect cross-sectional data on group size for the period 1998-2005. Their main data source was a now-defunct online portal called the "MIPT Terrorism Knowledge Base" that contained group-level information on 499 groups. While the group-level data contained on MIPT are now reportedly presented on Database (2016), I am unable to confirm whether the data collected by Asal et al. (2011) is equivalent to those currently found on the Global Terrorism Database. Asal et al. (2011) admit that they were only able to collect reliable information on group size for a limited number of groups from MIPT, and for the observations with missing size data–over half of all organizations–resorted to asking a panel of experts to provide a best size estimate based on a series of intervals. And even after this, the authors confess that for 77 of the organizations they had only "low-confidence" size data.

levels of fixed effects defined above. In each of the regressions I cluster the standard errors by terrorist group.

A militant organization's duration or longevity is a noted proxy for its durability (Carter (2012), Phillips (2014).) The approach that I take to test for the effect of ties on longevity is a survival analysis using a Cox proportional hazards model. This is a common method for modeling failure when the covariates vary over time, as is the case with my data (Box-Steffensmeier and Jones (2004), Acosta (2016a)). This model assumes that the hazard ratios are constant over time. Diagnostic tests on my data suggest that this assumption does hold.

1.4 Results

1.4.1 The Extensive Margin of Cooperation

Tables 2.3 and 2.4 present results of the estimation of Equations 1.1 and 1.3 for the *extensive margin* of alliance-formation (this is the participation decision of how engaging in intergroup cooperation affects a group's productivity, irrespective of how many actual alliances were formed). Hence, the key explanatory variable is $allies_{i,t-1}^{1/0}$, denoting whether or not a group has any allies in a given year. To allay concerns of reverse causality, I include a one-year lag on on this variable. The dependent variable in both model in Table 2.3 is the logged value of $(fatality\ rate)_{it}$, which I define as fatalities per attack and should be seen as a measure of overall efficiency.[29]

In model (1) of this table, I include only the basic explanatory variables without an interaction term (corresponding to Equation 1.1). This column suggests that having at least one ally is expected to increase a group's fatality rate by about 63% ($p < 0.1$). The parameter estimate of 1.025 for $Religious_i$ indicates that irrespective of alliances, religious groups are over *twice* as productive in their attacks as secular groups ($p < 0.01$). Additionally, the statistically significant estimate for state sponsors points to the operational benefits that terror groups may receive when they have a governmental patron.

Corresponding to Equation 1.3, in model (2) I then add an interaction between $Religious$ and $allies_{i,t-1}^{1/0}$ in order to test for heterogeneous effects of cooperation by ideology type. In model (2), the parameter estimate for the variable $allies_{i,t-1}^{1/0}$ identifies the effect of alliances for the base ideology type (secular), implying that a secular group is expected to obtain a 52.3% increase in its fatality rate when it has at least one ally. The estimated effect for the religious type is found by adding the estimate for the base type plus

---

[29]I only include in these regressions observations where at least one violent attack was committed.

the estimate on the interaction term $allies_{i,t-1}^{1/0} \times Religious_i$, meaning a religious group is expected to improve its fatality rate by 0.523+0.840=1.363, that is, it is predicted to increase its fatalities to attacks ratio by about 136% when it has at least one ally.

I find little evidence of alliance effects of Column (2). The statistically insignificant estimate on $allies_{i,t-1}^{1/0}$ means that the hypothesis cannot be rejected that having at least one alliance has no effect on group lethality. Additionally, while the estimate on the interaction term indicates that the religious type is expected to obtain a greater benefit from alliances, a Wald test comparing the effects for each ideology type reveals that we cannot reject the hypothesis that the effects are equal to one another.[30]

Table 2.4 reports Poisson regressions for the output variable *suicide attacks*. Figure 1.12 displays predictive margins based on the estimates from the interaction model in Column (2), showing that religious groups increase their output of suicide attacks to 3.42 when they have allies, compared to an output of 0.76 without allies, a sizable effect of 2.67 suicide attacks per year ($p < 0.01$). The effect of alliances on suicide attacks for secular groups, on the other hand, is negative but statistically zero. A post-estimation Wald test indicates that we can reject the hypothesis, with 99% confidence, of no difference in these respective predictive effects between ideology types.

I next conduct survivor analysis to test the effect of cooperation on the longevity of terrorist groups. Figure 1.16 presents the survival function based on a fitted Cox proportional hazards model (regression output not shown). The survivor function gives the probability of survival beyond a specified time. I plot the survival trends for four groups: 1) religious organizations that have at least one ally, 2) religious organizations that have zero allies, 3) secular organizations that have at least one ally, and 4) secular organizations that do not have allies. Alliances are shown to benefit religious groups significantly more than secular ones. While the probability of survival for a 10-year old religious group with zero allies is about 55%, the corresponding probability of survival for an Islamist with ties is about 80%.

1.4.2 The Intensive Margin of Cooperation

Having found limited evidence to suggest a notable benefit to religious terrorists at the extensive margin of alliances, I now test for the importance of cooperation at the intensive margin. Table 2.5 gives results from the estimation of Equations 1.2 and 1.4, where the outcome variable is the logged value of ($fatality\ rate)_{it}$, the yearly fatalities per attack. In the complete model (Column (6)), I include the the linear

---

[30]The estimate on the interaction term $allies_{i,t-1}^{1/0} \times Religious_i$ therefore represents not the overall effect of alliances for the religious type, but the effect of alliances on the religious type *relative* to the secular type.

term *(network size)*$_{i,t-1}$ as well as te quadratic term, *(network size)*$^2_{i,t-1}$. In addition, I include a linear and a quadratic term, respectively, for the variable *eigenvector centrality*, capturing how well-connected a groups allies are. A Wald tests suggest that we can reject the null hypothesis with 99% that the point estimate for the effect of alliances on *fatality rate* for the religious type is equal to the secular type, and we can likewise reject the hypothesis, with 90% confidence, that the effect of increased eigenvector centrality (measuring how well connected one's connections are) is equal for the two ideology types.

The interaction and quadratic terms in these models makes direct interpretation of the coefficients difficult; hence, I show the salient findings from this table in Figures 1.13, 1.14 and 1.15. Figures 1.13 and 1.14 display the predictive margins and marginal values, respectively, of the effect of the count variable *(network size)*$_{i,t-1}$ for both religious and secular types based on the results of the full model in Column (6), and Figure 1.15 then shows the corresponding plot for the continuous variable *(eigenvector centrality)*$_{i,t-1}$.

Figures 1.13 and 1.14 show that religious groups experience consistently positive returns to additional alliances, with only a very slight diminishing marginal effect. The fatality rate for a religious group with 5 allies is predicted to be 56% greater than a religious group with no allies. Religious groups with at least 10 allies are shown to have a fatality rate that is 78% higher than religious groups with 5 allies. With a fatality rate predicted to be 133% higher than a group with no allies, organizations with at least 10 allies are more than twice as lethal as unconnected ones. On the other hand, the results suggest that secular groups experience negative returns to cooperation beyond 5 allies. Figure 1.15 shows a similar trend when I use the *eigenvector centrality* measure of cooperation, implying that religious groups are predicted to exploit consequential relationships to a greater degree than secular groups. These results demonstrate that the optimal network size for secular groups is significantly smaller than for religious groups.

Results from a survival analysis, testing the effect on a group's survivability of having different levels of alliances, are displayed in Figures 1.17 and 1.18 (regression output not shown). Similar to the results from the survival analysis testing for the impact of cooperation at the extensive margin (Figure 1.16), at the intensive margin religious groups are again predicted to obtain markedly greater benefits from cooperation than secular groups. For a religious terrorist organization that is 20 years old, the survival rate is over 90% when it has at least 8 allies, about 85% with 6 allies, and about 70% with 4 allies. With no allies, the survivability rate is only 40% for a 20 year old organization. For a 20 year old secular group, the differential between having multiple allies versus having none is relatively small.

1.5   Conclusion

This study sought to explain why the costs and benefits of alliance-formation are heterogeneous by the ideology type of a terrorist group. Motivated by previous scholarship that investigates the reasoning behind intergroup cooperation, I approach the question from an economic framework that examines the incentives facing groups that seek to scale up their operations through networks. Due to the costly nature of scaling up by traditional means, such as increasing membership or merging with other groups, organizations receive the benefits of scale economies by participating in networks that facilitate trade. These networks tend to form along ideological lines. In my theoretical framework, I identify ideology as a technology that helps groups mitigate defection and free-rider costs. At a secondary level, however, this technology impacts a group's ability to form alliances with others. Consistent with my expectations, in my empirical analysis I find that religious organizations receive greater benefits from alliances than secular organizations.

The conclusion that can be drawn from my analysis is that religious groups care more about forming alliances than secular ones. Hence, to the extent that counterterrorism policies are aimed at disrupting terror networks, these policies should have the most significant impact when religious terror networks are targeted.

Further research may proceed by investigating the possibility that ideology is endogenous to networks. Another project could be a study of whether the success of certain groups (like al-Qaeda) has induced new groups to form, or to what extent groups alter their objectives following network participation.

Bibliography

Abadie, Alberto, "Poverty, political freedom, and the roots of terrorism," *American Economic Review*, 2006, *96* (2), 50–56.

Abu-Amr, Ziad, "Hamas: a historical and political background," *Journal of Palestine Studies*, 1993, *22* (4), 5–19.

Acosta, Benjamin, "From bombs to ballots: When militant organizations transition to political parties," *The Journal of Politics*, 2014, *76* (3), 666–683.

＿ , "Dying for survival: Why militant organizations continue to conduct suicide attacks," *Journal of Peace Research*, 2016, *53* (2), 180–196.

＿ , "Revolutionary and Militant Organizations Dataset (REMOD) 1980-2013 Codebook," 2016.

＿ **and Steven J Childs**, "Illuminating the global suicide-attack network," *Studies in Conflict & Terrorism*, 2013, *36* (1), 49–76.

Ahronheim, Anna, "IDF Annual Report: 1,000 Rockets Fired at Israel from Gaza in 2018," *The Jerusalem Post*, Dec 2018.

Al-'Ubaydi, Muhammad, Nelly Lahoud, Daniel Milton, and Bryan Price, "The Group That Calls Itself a State: Understanding the Evolution and Challenges of the Islamic State," *Combating Terrorism Centre at West Point*, 2014, p. 102.

Alexander, Yonah and Michael S. Swetnam, *Usama bin Laden's al-Qaida: Profile of a Terrorist Network*, Ardsley, New York: Transnational Publishers, 2001.

Anderton, Charles H, John R Carter, and Others, "Principles of conflict economics," *Cambridge UP*, 2009.

Asal, Victor and R. Karl Rethemeyer, "The nature of the beast: Organizational structures and the lethality of terrorist attacks," *Journal of Politics*, 2008, *70* (2), 437–449.

Asal, Victor H., Gary A. Ackerman, and R. Karl Rethemeyer, "Connections can be toxic: Terrorist organizational factors and the pursuit of CBRN weapons," *Studies in Conflict and Terrorism*, 2012, *35* (3), 229–254.

＿ **, Hyun Hee Park, R. Karl Rethemeyer, and Gary Ackerman**, "With Friends Like These: Why Terrorist Organizations Ally," *International Public Management Journal*, 2011, *19* (1), 1–30.

Azam, Jean-Paul and Alexandra Delacroix, "Aid and the delegated fight against terrorism," *Review of Development Economics*, 2006, *10* (2), 330–344.

＿ **and Véronique Thelen**, "The roles of foreign aid and education in the war on terror," *Public Choice*, 2008, *135* (3-4), 375–397.

Barrett, Richard, *The Islamic State*, Soufan Group, 2014.

Basuchoudhary, Atin and William F Shughart, "On ethnic conflict and the origins of transnational terrorism," *Defence and Peace Economics*, 2010, *21* (1), 65–87.

Benner, Katie, "Bin Laden's gone, but what about al Qaeda's finances?," may 2011.

Berman, Eli, "Sect, subsidy, and sacrifice: an economist's view of ultra-orthodox Jews," *The Quarterly Journal of Economics*, 2000, (115.3).

__ , *Radical, Religious and Violent* 2009.

__ **and David D Laitin**, "Religion, terrorism and public goods: Testing the club model," *Journal of public Economics*, 2008, *92* (10), 1942–1967.

Blomberg, S Brock and Gregory D Hess, "The Lexus and the olive branch: Globalization, democratization and terrorism," 2005.

Borgatti, S.P., M.G. Everett, and L.C. Freeman, "Ucinet for Windows: Software for Social Network Analysis.," 2002.

Box-Steffensmeier, Janet M and Bradford S. Jones, *Event history modeling: A guide for social scientists*, New York: Cambridge University Press., 2004.

Bruno, Greg, "Inside the Kurdistan Workers Party (PKK)," *CFR. org, October*, 2007, *19.*

Byman, Daniel, *Deadly Connections: States That Sponsor Terrorism*, Cambridge: Cambridge University Press, 2005.

Cameron, A. Colin and Pravin K. Trivedi, "Count Panel Data," *The Oxford Handbook of Panel Data*, 2013.

Carter, David B, "A Blessing or a Curse? State Support for Terrorist Groups," *International Organization*, 2012, *66* (1), 129–151.

Center for Systemic Peace, "State Fragility Index and Matrix 2016," 2016.

Cohen, David S, "Remarks of Under Secretary for Terrorism and Financial Intelligence David S. Cohen," oct 2014.

Database, Global Terrorism, "National Consortium for the Study of Terrorism and Responses to Terrorism (START)," 2016.

de Mesquita, Ethan Bueno, "Conciliation, commitment and counterterrorism: A formal model," *International Organization*, 2005, *59* (1), 145–176.

Ekelund Jr, Robert B., Robert F. Hébert, and Robert D. Tollison, *The market for Christianity* 2006.

Enders, Walter and Paan Jindapon, "Network externalities and the structure of terror networks," *Journal of Conflict Resolution*, 2010, *54* (2), 262–280.

Erlanger, Steven, "Hamas Routs Ruling Faction, Casting Pall on Peace Process," *The New York Times*, Jan 2006.

Eubank, William and Leonard Weinberg, "Terrorism and democracy: Perpetrators and victims," *Terrorism and political violence*, 2001, *13* (1), 155–164.

FATF Report, "Financing of the Terrorist Organisation Islamic State in Iraq and the Levant (ISIL)," Technical Report February, Financial Action Task Force 2015.

Force, Financial Action Task, "Financing of the Terrorist Organization Islamic State in Iraq and the Levant (ISIL)," *FATF, Paris*, 2015.

Freytag, Andreas, Jens J Krüger, Daniel Meierrieks, and Friedrich Schneider, "The origins of terrorism: Cross-country estimates of socio-economic determinants of terrorism," *European Journal of Political Economy*, 2011, *27*, S5–S16.

Fund for Peace, "Fragile states index 2015," 2015.

Gaibulloev, Khusrav, James A Piazza, and Todd Sandler, "Regime types and terrorism," *International organization*, 2017, *71* (3), 491–522.

Gandel, Stephen, "Will Osama's Death Bankrupt al-Qaeda?," may 2011.

Greene, William, "Fixed effects and bias due to the incidental parameters problem in the tobit model," *Econometric Reviews*, 2004, *23* (2), 125–147.

Gunaratna, Rohan, *Inside Al-Qaeda: Global Network of Terror*, New York: Berkley Books, 2003.

Hamzeh, Ahmad Nizar, *In the path of Hizbullah*, Syracuse University Press, 2004.

Hoffman, Bruce, "The Changing Face of Al Qaeda and the Global War on Terrorism," *Studies in Conflict and Terrorism*, 2004, *27* (6), 549–560.

— , *Inside Terrorism*, revised an ed., New York: Columbia University Press, 2006.

Horowitz, Michael C, "Nonstate Actors and the Diffusion of Innovations : The Case of Suicide Terrorism," *International Organization*, 2010, pp. 33–64.

Horowitz, Michael C., "The Rise and Spread of Suicide Bombing," *Ssrn*, 2015.

— **and Philip B.K. Potter**, "Allying to Kill: Terrorist Intergroup Cooperation and the Consequences for Lethality," *Journal of Conflict Resolution*, 2014, *58* (2).

Huntington, Samuel P, "The clash of civilizations and the remaking of world order," 1996.

Iannaccone, Laurence R, "Sacrifice and stigma: reducing free-riding in cults, communes, and other collectives," *Journal of political economy*, 1992, *100* (2), 271–291.

— , "Why Strict Churches Are Strong Author (s): Laurence R . Iannaccone Source : American Journal of Sociology , Vol . 99 , No . 5 (Mar ., 1994), pp . 1180-1211 Published by : The University of Chicago Press Stable URL : https://www.jstor.org/stable/278114," 1994, *99* (5), 1180–1211.

— **and Eli Berman**, "Religious extremism: The good, the bad, and the deadly," *Public choice*, 2005, pp. 109–129.

Israel Ministry of Foreign Affairs, "The Covenant of the Islamic Resistance Movement - Hamas," August 18, 1988.

— , "HAMAS-The Islamic Resistance Movement," January 1, 1993.

— , "Anti-Israeli Terrorism in 2007 and its Trends in 2008: Overview," June 2008.

— , "The Hamas terror war against Israel," 2013.

— , "Victims of Palestinian Violence and Terrorism since September 2000," 2014.

Jewish Virtual Library, "Terrorism Against Israel: Palestinian Suicide Attacks," 2008.

Jones, Seth G. and Martin C. Libicki, "How Terrorist Groups End: Lessons for Countering al-Qaida," Technical Report, RAND Corporation, Santa Monica, California 2008.

Jones, Seth G, James Dobbins, Daniel Byman, Christopher S Chivvis, Ben Connable, Jeffrey Martini, Eric Robinson, and Nathan Chandler, *Rolling Back the Islamic State*, Santa Monica, CA: RAND Corporation, 2017.

Joseph, J, *Turkey and the European Union: internal dynamics and external challenges*, Springer, 2006.

Karmon, Ely, *Coalitions Between Terrorist Organizations: Revolutionaries, Nationalists and Islamists*, Boston: Brill Academic Pub, 2005.

Karsh, Efraim, *The Oslo Disaster*, Begin-Sadat Center for Strategic Studies, 2016.

Khoury, Jack and Noa Landau, "Israel Accuses Hezbollah of Helping Hamas Establish Military Presence in Lebanon," jun 2018.

Krieger, Tim and Daniel Meierrieks, "What causes terrorism?," *Public Choice*, 2011, *147* (1-2), 3–27.

Krueger, Alan B, *What makes a terrorist?: Economics and the roots of terrorism: Lionel Robbins Lectures*, Princeton University Press, 2007.

Krueger, Alan B., *What Makes a Terrorist: Economics and the Roots of Terrorism*, Princeton University Press, 2008.

Krueger, Alan B and David D Laitin, "Kto kogo?: A cross-country study of the origins and targets of terrorism," *Terrorism, economic development, and political openness*, 2008, pp. 148–173.

__ **and Jitka Maleckova**, "Education, poverty, political violence and terrorism: is there a causal connection?," Technical Report, National Bureau of Economic Research 2002.

Kuperwasser, Yossi, "Palestinian Payments to Incarcerated Terrorists and Martyrs' Families Rise in 2017," jul 2017.

Kurrild-Klitgaard, Peter, Mogens K Justesen, and Robert Klemmensen, "The political economy of freedom, democracy and transnational terrorism," *Public Choice*, 2006, *128* (1-2), 289–315.

Kushner, Harvey W., *Encyclopedia of Terrorism*, Thousand Oaks, California: Sage Publications, 2003.

Kydd, Andrew and Barbara F Walter, "Sabotaging the peace: The politics of extremist violence," *International Organization*, 2002, *56* (2), 263–296.

LaFree, Gary, Laura Dugan, Min Xie, and Piyusha Singh, "Spatial and temporal patterns of terrorist attacks by ETA 1970 to 2007," *Journal of Quantitative Criminology*, 2012, *28* (1), 7–29.

Lai, Brian, ""Draining the Swamp": An Empirical Examination of the Production of International Terrorism, 1968-1998," *Conflict Management and Peace Science*, 2007, *24* (4), 297–310.

Laub, Zachary, "The Islamic State," aug 2016.

Letamendia, Francisco, *Historia del nacionalismo vasco y de ETA*, R & B Ediciones, 1994.

Martin, Gus, *Understanding terrorism: Challenges, perspectives, and issues*, SAGE publications, 2017.

Memorial Institute for the Prevention of Terrorism (MIPT), "Terrorist Organization Profiles (TOPS)," 2008.

Ministerio del Interior, Gobierno de España, "Victims of ETA," 2010.

Moghaddam, Assaf, "Motives for Martyrdom of Suicide Attacks," *Critique*, 2009, *33* (3), 46–78.

Morales, Kendrick, Prosper Raynold, and Jing Li, "The empirical relationship between commitment enhancement devices and terrorism," *Applied Economics*, 2018, *50* (50), 5366–5380.

National Christian Leadership Conference for Israel, ""Stats Show Anti-Terrorism Fence Highly Effective"," 2008.

National Consortium for the Study of Terrorism and Responses to Terrorism (START), "Global Terrorism Database (Data file)," 2018.

Nozick, Robert, *Anarchy, state, and utopia*, Basic books, 2013.

Palestine and Anglo-American Committee of Inquiry on Jewish Problems in Palestine, *A survey of Palestine*, Vol. 1, government printer, 1946.

Pape, Robert Anthony, *Dying to win: The strategic logic of suicide terrorism*, Random House Incorporated, 2006.

Pedahzur, Ami, *Suicide terrorism*, Polity, 2005.

— **, Leonard Weinberg, and Arie Perliger**, *Political parties and terrorist groups*, Routledge, 2008.

Perliger, Arie and Leonard Weinberg, "Jewish self-defence and terrorist groups prior to the establishment of the state of Israel: Roots and traditions," *Totalitarian Movements and Political Religions*, 2003, *4* (3), 91–118.

Pew Research Center, "Rising Restrictions on Religion," 2011.

Phillips, Brian J., "Terrorist group cooperation and longevity," *International Studies Quarterly*, 2014, *58* (2), 336–347.

— , "Terrorist Group Rivalries and Alliances: Testing Competing Explanations," *Studies in Conflict and Terrorism*, 2018, (January), 1–23.

Phillips, David L, *From bullets to ballots: violent Muslim movements in transition*, Routledge, 2017.

Piazza, James A., "A supply-side view of suicide terrorism: A cross-national study," *Journal of Politics*, 2008, *70* (1), 28–39.

Piazza, James A, "Incubators of terror: Do failed and failing states promote transnational terrorism?," *International Studies Quarterly*, 2008, *52* (3), 469–488.

Piven, Ben, "Who, what and where is ISIL? Explaining the Islamic State," sep 2014.

Plümper, Thomas and Eric Neumayer, "The friend of my enemy is my enemy: International alliances and international terrorism," *European Journal of Political Research*, 2010, *49* (1), 75–96.

Rabil, Robert G, "Hezbollah, The Islamic Association and Lebanon's Confessional System," *The Levantine Review*, 2012, *1* (1), 49–67.

Radu, Michael and Vladimir Tismaneanu, *Latin American Revolutionaries: Groups, Goals, Methods*, New York: Pergamon-Brassey's International Defense Publishers, 1990.

Ranstorp, Magnus, "The strategy and tactics of Hizballah's current 'Lebanonization process'," *Mediterranean Politics*, 1998, *3* (1), 103–134.

Ray, Alex, "The Role of Ideology in Terrorist Alliance Networks," *Doctoral dissertation*, 2018.

— , "An Empirical Analysis of the Club Good Model of Terrorism," *Doctoral dissertation*, 2019.

Raynold, Prosper, "Fellowship, social network externalities, and management of religious risk," *Rationality and Society*, 2013, *25* (2), 229–260.

— , "An Economic Theory of Violent Religious Extremism An Economic Theory of Violent Religious Extremism Prosper Raynold Associate Professor of Economics Department of Economics," 2018, (June).

Rees, Matt, "How Hamas-Hezbollah Rivalry Is Terrorizing Israel," apr 2001.

Reuters, "Basque separatist group ETA says it has 'completely dissolved'," 2018.

Rollins, John, "Al Qaeda and Affiliates: Historical Perspective, Global Presence, and Implications for U.S. Policy," jan 2011.

Sageman, Marc, *Understanding terror networks*, University of Pennsylvania Press, 2004.

Salehyan, Idean, Kristian Skrede Gleditsch, and David E. Cunningham, "Explaining External Support for Insurgent Groups," *International Organization*, 2011, *65* (4), 709–744.

Sánchez-Cuenca, Ignacio, "The persistence of nationalist terrorism: the case of ETA," *Violent non-state actors in contemporary world politics. Columbia University Press, New York*, 2009.

Shitrit, Lihi Ben, *Righteous transgressions: women's activism on the Israeli and Palestinian religious right*, Vol. 61, Princeton University Press, 2015.

START, "Kurdistan Workers' Party (PKK)," 2015.

Tezcür, Güneş Murat, "Prospects for Resolution of the Kurdish Question: A Realist Perspective.," *Insight Turkey*, 2013, *15* (2).

The Institute for the Study of Violent Groups (ISVG), "Violent Extremism Knowledge Base," 2013.

The National Counterterrorism Center (NCTC), "Terrorist Groups," 2013.

— , "Terrorist Profiles," 2013.

TOI, "Israel says Hamas working with Hezbollah to train 'thousands' in Lebanon," jun 2018.

Transparency International, *Transparency International corruption perceptions index*, Transparency International, 1995.

Unzueta, Patxo, *Los nietos de la ira: nacionalismo y violencia en el País Vasco*, El País, 1988.

U.S. Department of State, "Country Reports on Terrorism 2004," 2005.

van Um, Eric, *Evaluating the Political Rationality of Terrorist Groups*, Springer, 2015.

Vice President's Task Force on Combating Terrorism, "Terrorist Group Profiles," Technical Report, Superintendent of Documents, U.S. Government Printing Office, Washington DC 1988.

Zimmerman, Katherine, "The al Qaeda Network," Technical Report September, American Enterprise Institute 2013.

Table 1.1: Summary Statistics, 1970-2014

Variable	Mean	SD	Min	Max	Description
Terrorist Group Characteristics, for group i **in year** t					
Any Alliances?	0.81	0.39	0	1	Binary variable, coded 1 if group has at least one alliance at any point during sample period.
Alliance Count (Network Size)	2.81	3.41	0	39	Alliance count for group i in year t.
Eigenvector Centrality	0.03	0.08	0	0.61	Eigenvector centrality score for group i in year t.
State Sponsors	1.29	1.64	0	9	Number of state sponsorships for group i in year t.
Age	16.52	14.27	0	96	Age of group i since founding, up to time t.
Attacks	10.16	48.90	0	1,114	Number of violent attacks by group i in year t.
Suicide Attacks	0.72	8.81	0	295	Number of suicide attacks by group i in year t.
Conducts Suicide attacks?	0.05	0.22	0	1	1 if at least one suicide attack if conducted by group i in year t, 0 otherwise.
Inflicted Casualties	30.76	262.11	0	10,000	Number of inflicted casualties by group i in year t.
Fatality rate (productivity)	3.55	15.96	0	599	$\frac{\text{Fatalities}_{it}}{\text{attacks}_{it}}$
Safe Havens	0.33	0.64	0	3	Number of foreign safe havens a group has. A safe haven is considered to be either the official harbor that a state sponsor offers or the unsanctioned sanctuary within a failed state.
Observations	5813				

Table 1.2: Ideology Summary Statistics

Ideology Indicators	% of Sample	Mean Alliances	Alliance sd	Max alliances	Mean Alliance Depth	Alliance Depth sd
General Categories (not mutually exclusive)						
Islamist [*]	0.32	3.92	4.47	39	0.031	0.080
Islamist (without al-Qaeda)		3.56	3.25	20	0.029	0.070
Ethnonationalist [†]	0.38	3.21	3.21	15	0.033	0.085
Leftist [ᵁ]	0.48	2.60	2.69	15	0.042	0.082
Anarchist [⊗]	0.02	0.45	0.77	2	0.002	0.008
Right-wing [∓]	0.08	1.02	0.88	3	0.003	0.009
Specific Categories (mutually exclusive)						
Purely Islam	0.19	3.77	5.09	39	0.035	0.085
Purely Islam (without al-Qaeda)		3.15	3.12	20	0.030	0.070
Purely Ethnonationalist	0.12	1.77	2.21	11	0.009	0.025
Purely Leftist	0.33	2.31	2.30	12	0.037	0.066
Religious-Ethno	0.12	4.36	3.33	15	0.028	0.073
Ethno and Leftist	0.14	3.40	3.34	15	0.055	0.112
Groups	255					

Definitions derive from Acosta (2016b).

[*] Group subscribes to a variant of political Islam (potentially compounded with other ideologies).
[†] Group pursues an agenda involving secession, autonomy, or the liberation of a specific identity group currently ruled by a different identity group. (potentially compounded with other ideologies).
[ᵁ] Group subscribes to an ideology such as Marxism-Leninism, Maoism, or radical environmentalism (potentially compounded with other ideologies).
[⊗] Group seeks the collapse of a given political system.
[∓] Represents a status quo, ultanationalist, or conservative organization.

Table 1.3: List of Organizations with Highest Yearly Mean Alliance Count, 1970-2014

Group Name	Mean Ties Count	Ideology
al-Qaeda	26.44	Islamist
Tehrik-i-Taliban Pakistan	14.22	Islamist
Taliban	10.75	Islamist
Sandinista National Liberation Front (FSLN)	10.00	Leftist
Lashkar-e-Taiba	9.53	Islamist, Ethnonationalist
Lashkar-e-Jhangvi	9.47	Islamist, Ethnonationalist
Jaish-e Mohammad (JeM)	9.27	Islamist, Ethnonationalist
United Liberation Front of Assam	9.19	Nationalist, Leftist
Popular Front for the Liberation of Palestine	9.06	Nationalist, Leftist
Hizb-ul-Mujahideen	8.65	Islamist, Ethnonationalist
Jema'a Islamiyya (JI)	8.64	Islamist
Harkat-ul-Mujahideen	8.27	Islamist, Ethnonationalist
Hezbollah	8.15	Islamist
19th of April Movement	7.90	Leftist

Table 1.4: The Extensive Margin of Cooperation

	(1) OLS	(2) OLS
Dependent Variable:	(ln) fatality rate	(ln) fatality rate
Allies$_{i,t-1}$ (1/0)	0.626*	0.523
	(0.325)	(0.356)
Religious$_i$	1.025***	0.263
	(0.251)	(0.586)
(State Sponsors)$_{i,t-1}$	0.203***	0.205***
	(0.074)	(0.074)
(Safe Havens)$_{i,t-1}$	-0.036	-0.049
	(0.202)	(0.201)
Allies$_{i,t-1}$ (1/0) × Religious$_i$		0.840
		(0.592)
Constant	-1.989***	-1.908***
	(0.332)	(0.352)
Year FE?	Yes	Yes
N	2519	2519
R^2	0.249	0.250

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Robust standard errors in parentheses. All robust standard errors
are clustered by terrorist group. Dependent variable is the logged
value of (*fatality rate*)$_{it}$, which is defined to be $\frac{fatalities_{it}}{attacks_{it}}$. This
variable can be interpreted as a measure of attack 'efficiency.'

Table 1.5: The Extensive Margin of Cooperation

	(1)	(2)
	Poisson	Poisson
Dependent Variable:	Suicide Attacks	Suicide Attacks
Allies$_{i,t-1}$ (1/0)	-0.125	-0.961
	(0.569)	(0.677)
Religious$_i$	1.989***	-0.284
	(0.538)	(0.704)
(State Sponsors)$_{i,t-1}$	0.073	0.081
	(0.324)	(0.320)
(Safe Havens)$_{i,t-1}$	-0.650**	-0.674***
	(0.254)	(0.254)
Allies$_{i,t-1}$ (1/0) $\times$ Religious$_i$		2.472***
		(0.929)
Constant	-3.126**	-2.357**
	(1.431)	(1.151)
Year FE?	Yes	Yes
N	2519	2519
Pseudo R^2	0.455	0.460

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Robust standard errors in parentheses. All robust standard errors are clustered by terrorist group. Dependent variable is the number of suicide attacks carried out per year.

Table 1.6: The Intensive Margin of Cooperation

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Dependent Variable:	(ln) fatality rate	(ln) fatality rate	(ln) fatality rate	(ln) fatality rate	(ln) fatality rate	(ln) fatality rate
(Network Size)$_{i,t-1}$	0.084** (0.041)	0.262** (0.125)	0.038 (0.050)	0.069 (0.054)	0.336** (0.151)	0.485*** (0.157)
Religious$_i$	1.012*** (0.242)	0.974*** (0.242)	0.685** (0.341)	0.710** (0.342)	1.073** (0.468)	1.146** (0.467)
(Eigenvector Centrality)$_{i,t-1}$	-1.627** (0.783)	-1.679** (0.826)		-2.263* (1.154)		-9.860*** (2.644)
(State Sponsors)$_{i,t-1}$	0.196** (0.077)	0.198*** (0.075)	0.198*** (0.076)	0.201*** (0.075)	0.209*** (0.070)	0.209*** (0.065)
(Safe Havens)$_{i,t-1}$	-0.066 (0.208)	-0.074 (0.212)	-0.115 (0.211)	-0.108 (0.207)	-0.148 (0.211)	-0.154 (0.199)
(Network Size)$^2_{i,t-1}$		-0.019 (0.012)			-0.033** (0.015)	-0.044*** (0.015)
Religious$_i$ × (Network Size)$_{i,t-1}$			0.085 (0.063)	0.059 (0.066)	-0.271 (0.238)	-0.396 (0.245)
Religious$_i$ × (Eigenvector Centrality)$_{i,t-1}$				1.779 (1.727)		7.619 (4.824)
Religious$_i$ × (Network Size)$^2_{i,t-1}$					0.039* (0.022)	0.049** (0.023)
(Eigenvector Centrality)$^2_{i,t-1}$						19.616*** (5.320)
Religious$_i$ × (Eigenvector Centrality)$^2_{i,t-1}$						-14.402 (11.291)
Constant	-1.658*** (0.228)	-1.853*** (0.271)	-1.573*** (0.249)	-1.591*** (0.249)	-1.881*** (0.298)	-1.938*** (0.298)
N	2519	2519	2519	2519	2519	2519
R^2	0.100	0.104	0.099	0.103	0.109	0.120

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Robust standard errors in parentheses. All robust standard errors are clustered by terrorist group. Dependent variable is inflicted fatalities per attack per year (log). All regressions include year fixed effects.
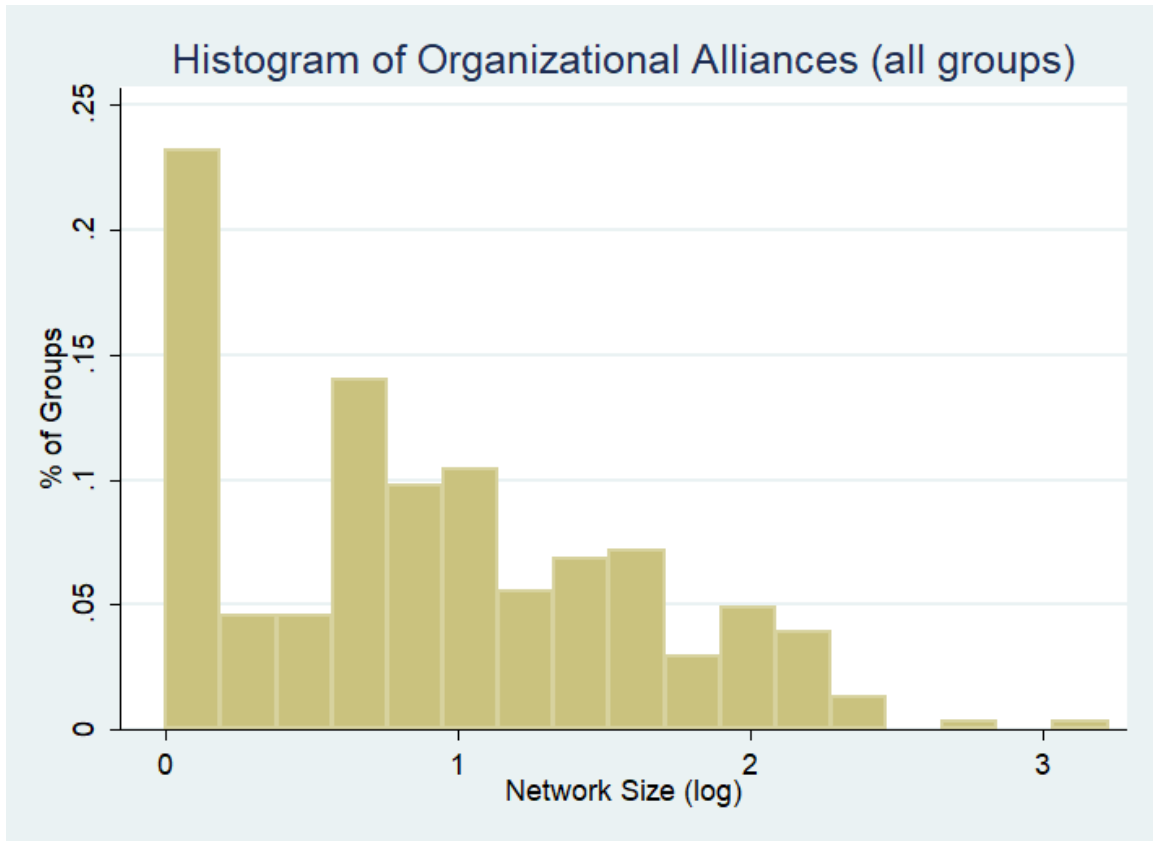
Figure 1.1: Distribution of the logged mean level of allies per group, 1970-2014. I perform the transformation *log(allies + 1)* so that no zeros are dropped. This transformed variable can be understood as a group's *network size,* since every network must have at least one node in it.
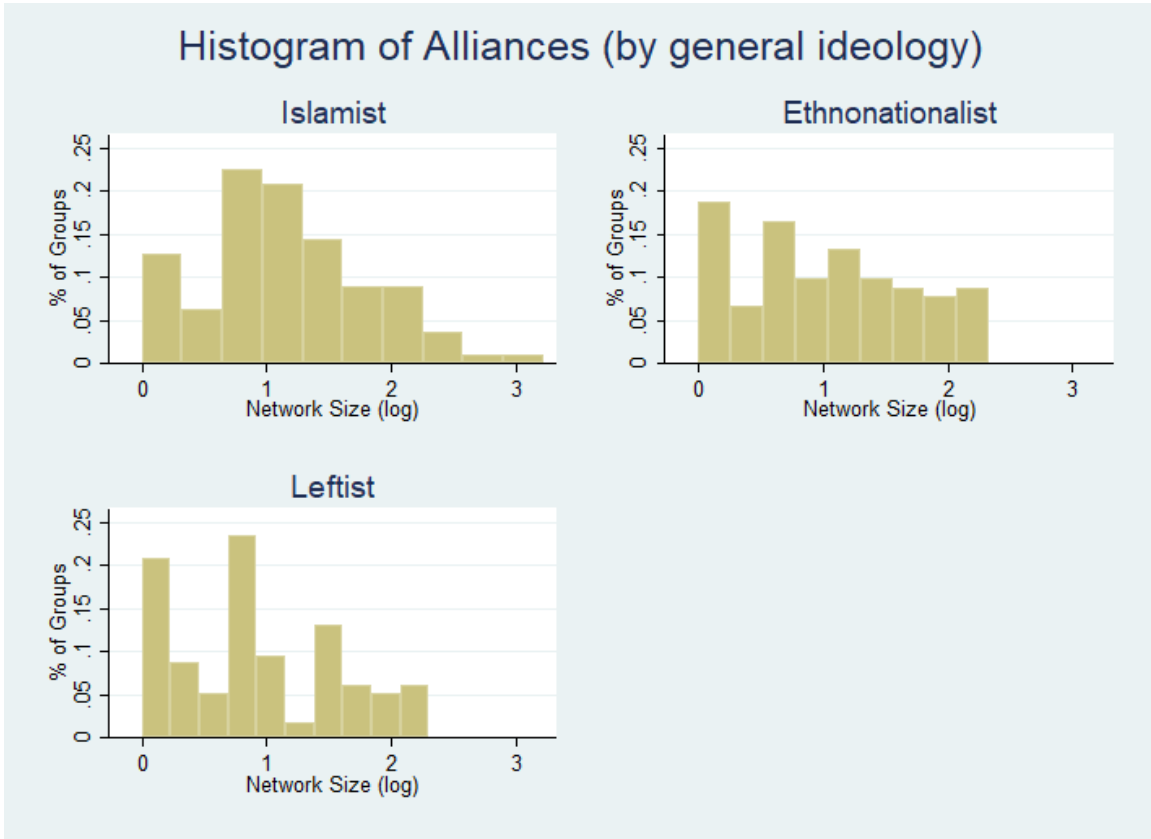
Figure 1.2: Distribution of the logged mean level of allies per group, by general ideology type, 1970-2014. I perform the transformation *log(allies + 1)* so that no zeros are dropped. This transformed variable can be understood as a group's *network size*, since every network must have at least one node in it.
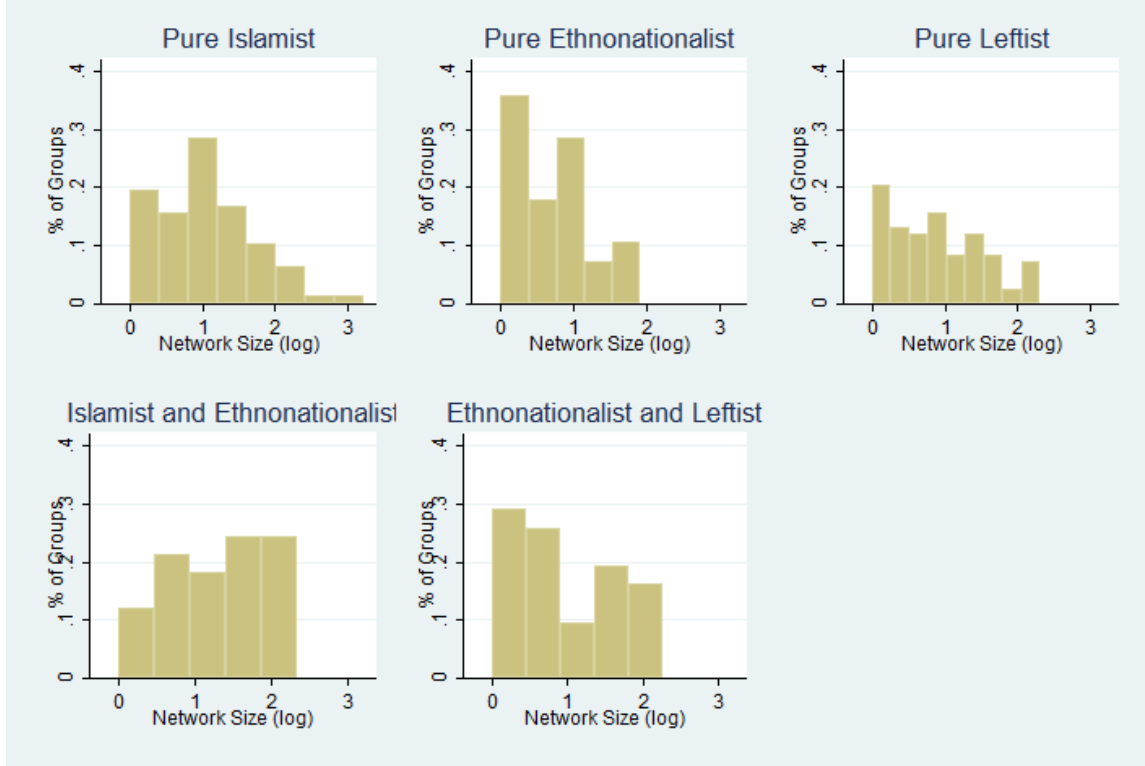
Figure 1.3: Distribution of the logged mean level of allies per group, by specific ideology type, 1970-2014. I perform the transformation *log(allies + 1)* so that no zeros are dropped. This transformed variable can be understood as a group's *network size*, since every network must have at least one node in it.
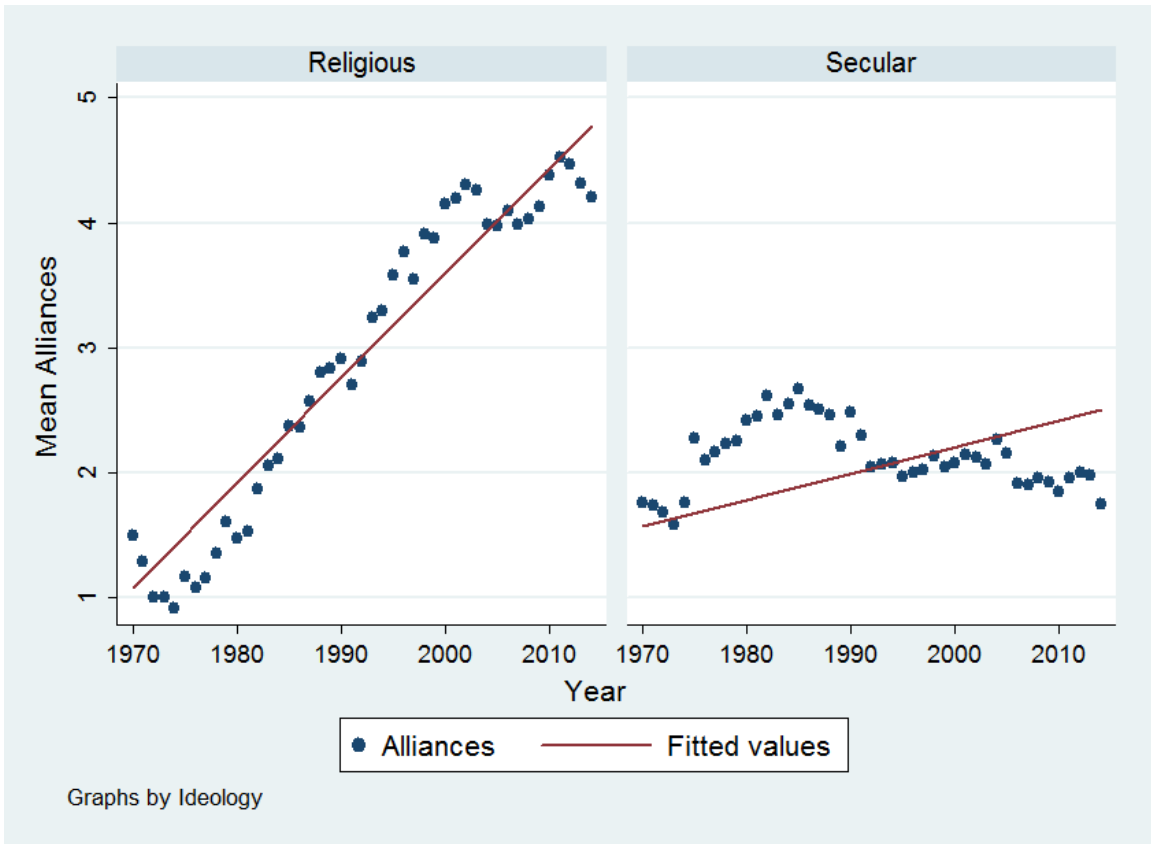
Figure 1.4: Yearly Mean Alliance Count, by ideology type, 1970-2014. al-Qaeda, an extreme outlier, is removed from the sample.
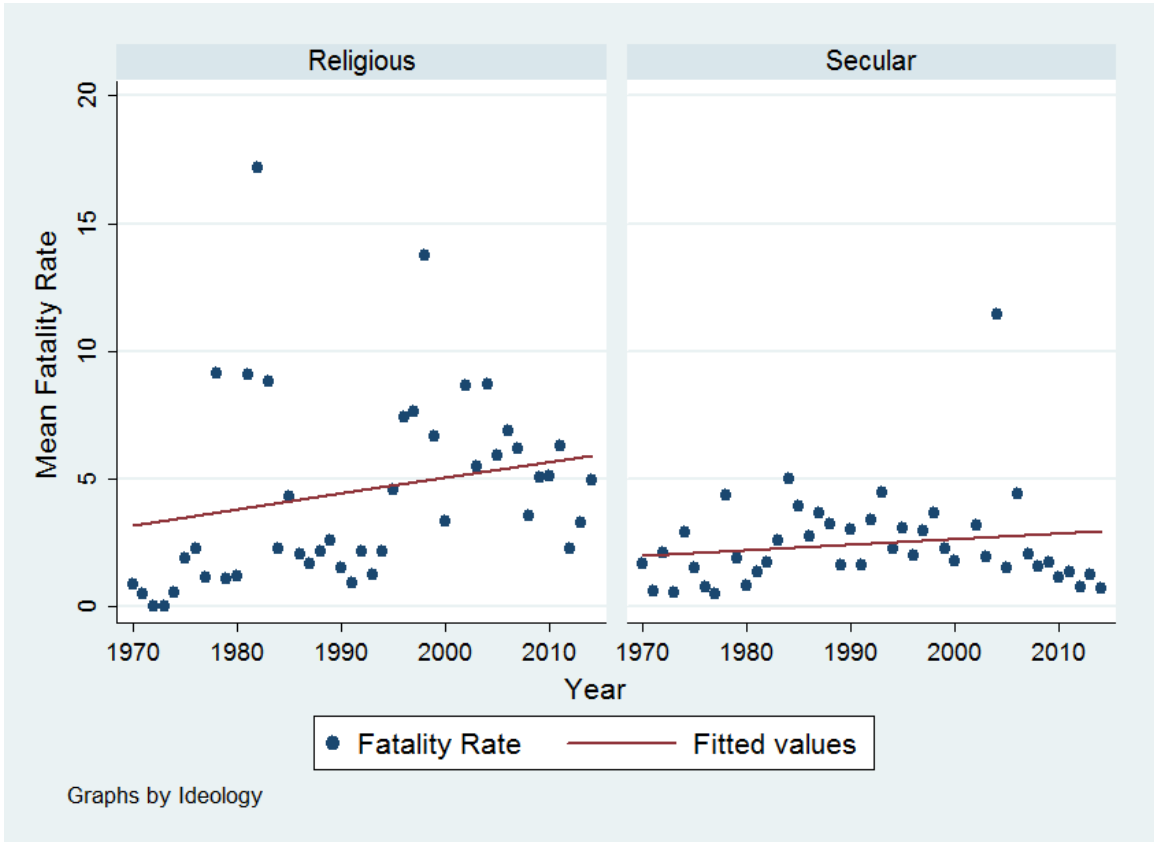
Figure 1.5: Yearly Mean Fatality Rate, by ideology type, 1970-2014. The year 2001, an extreme outlier, is removed from the sample.
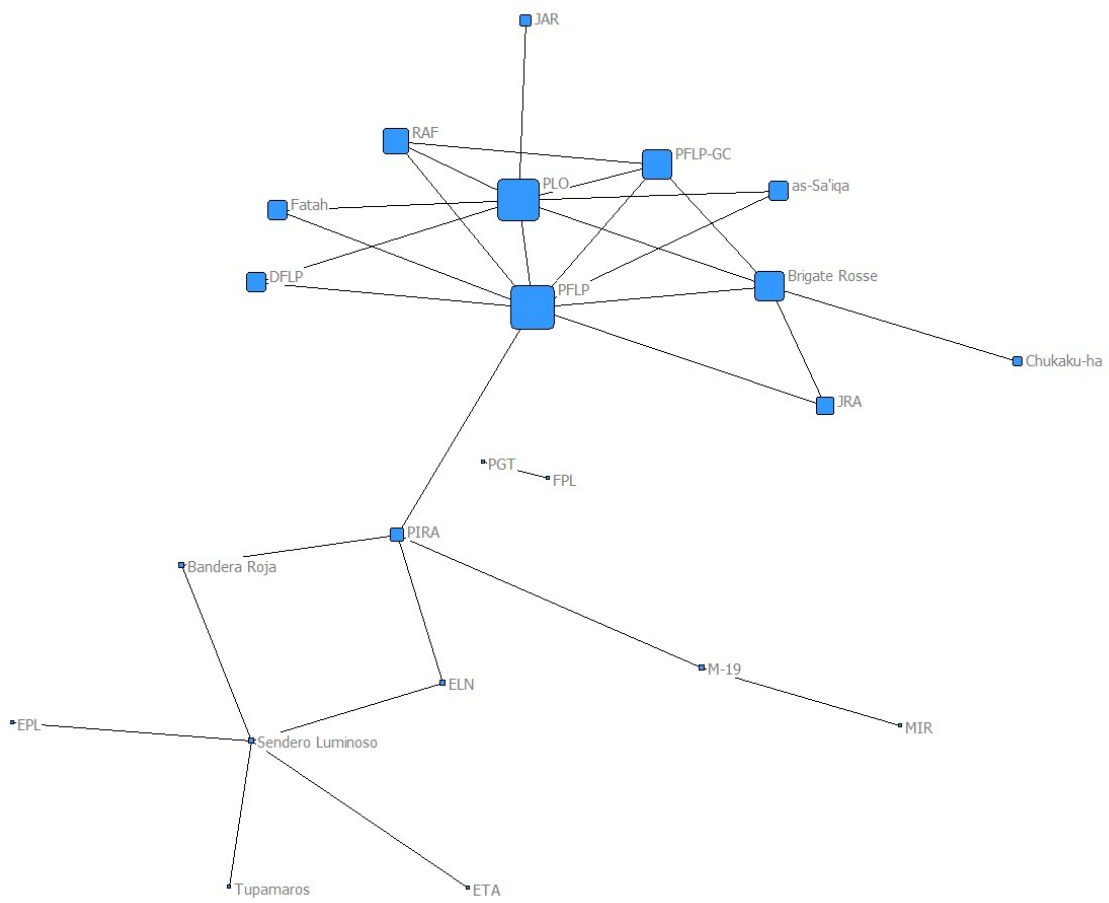
Figure 1.6: 1970 Global Network of Terrorist Group Connections. A node's relative size corresponds to its eigenvector centrality measure.
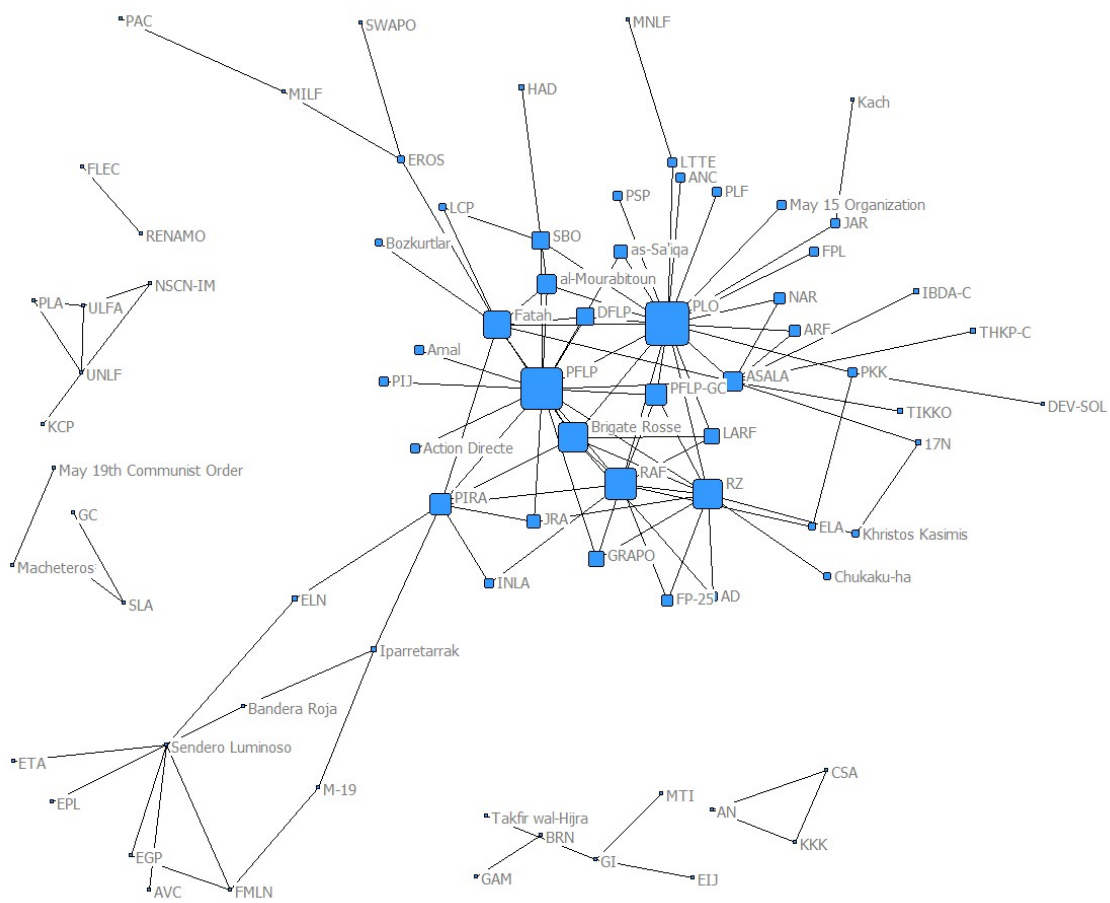
Figure 1.7: 1980 Global Network of Terrorist Group Connections. A node's relative size corresponds to its eigenvector centrality measure.
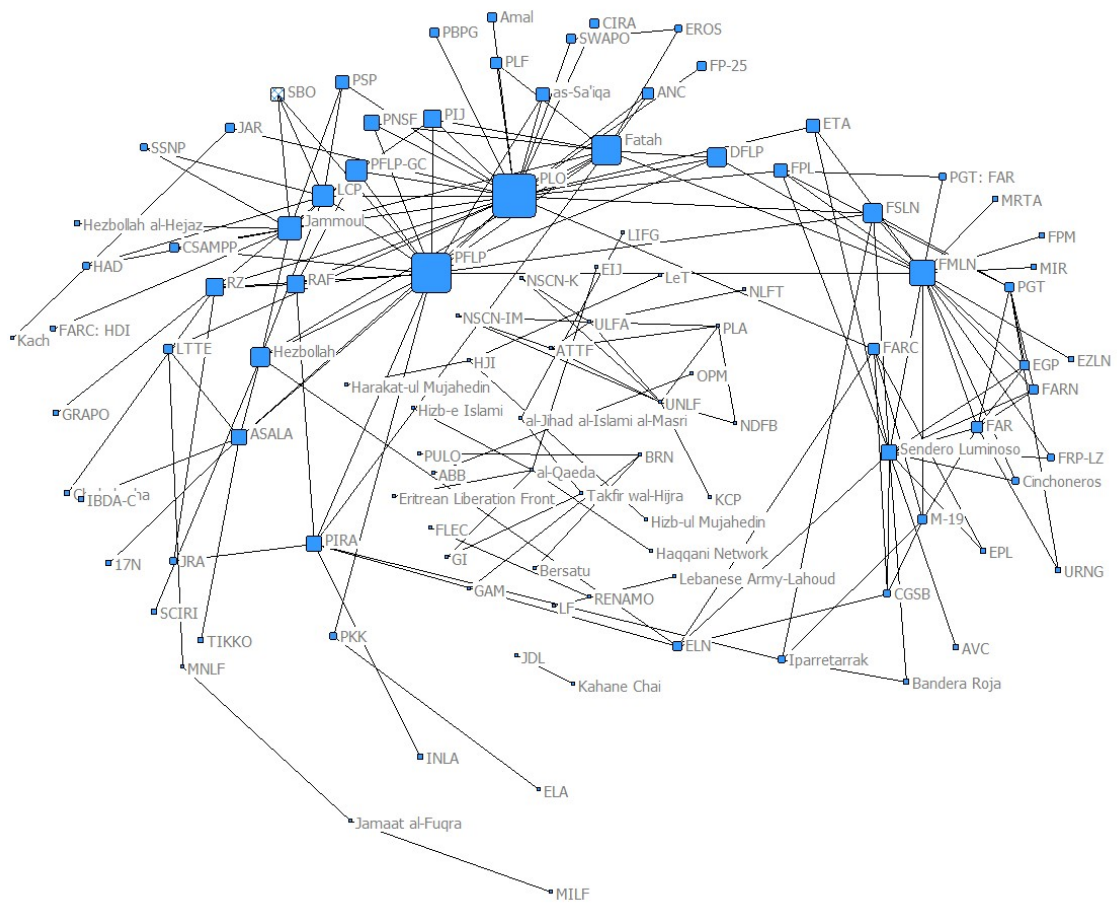
Figure 1.8: 1990 Global Network of Terrorist Group Connections. A node's relative size corresponds to its eigenvector centrality measure.
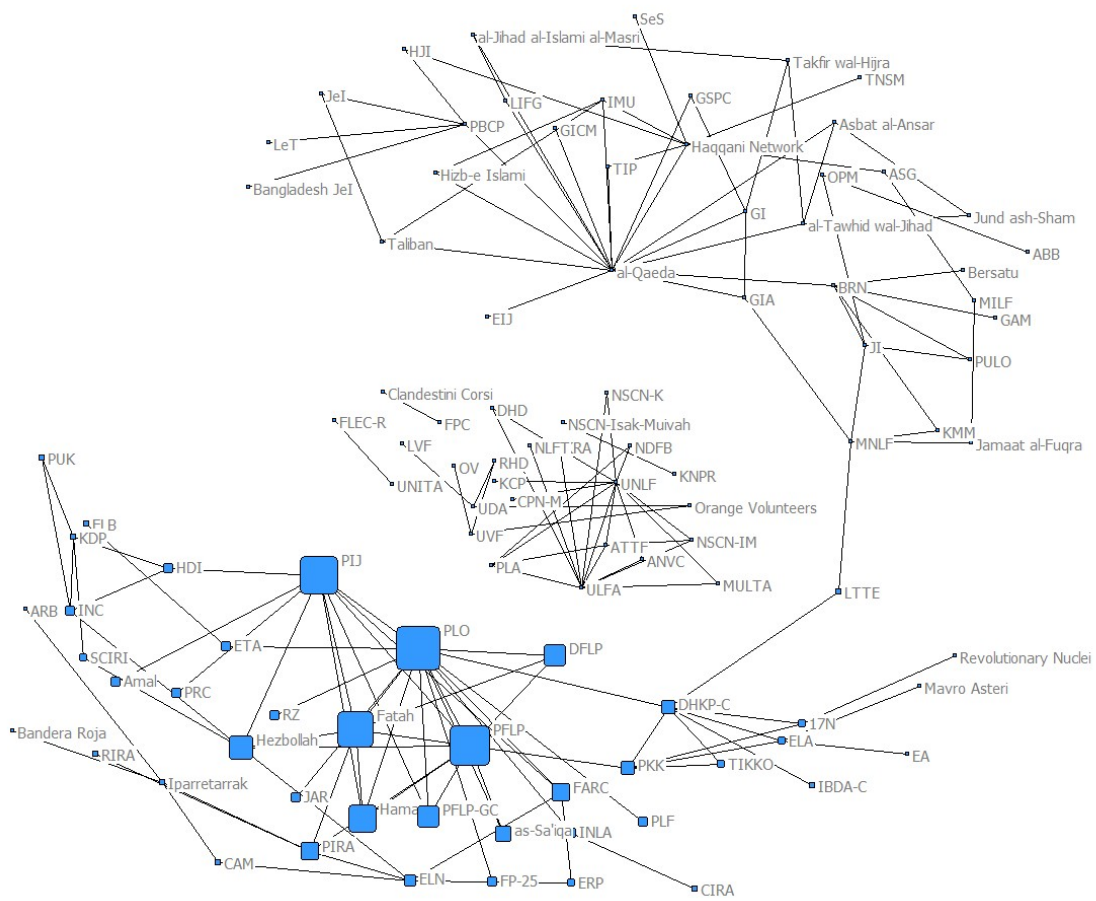
Figure 1.9: 2000 Global Network of Terrorist Group Connections. A node's relative size corresponds to its eigenvector centrality measure.
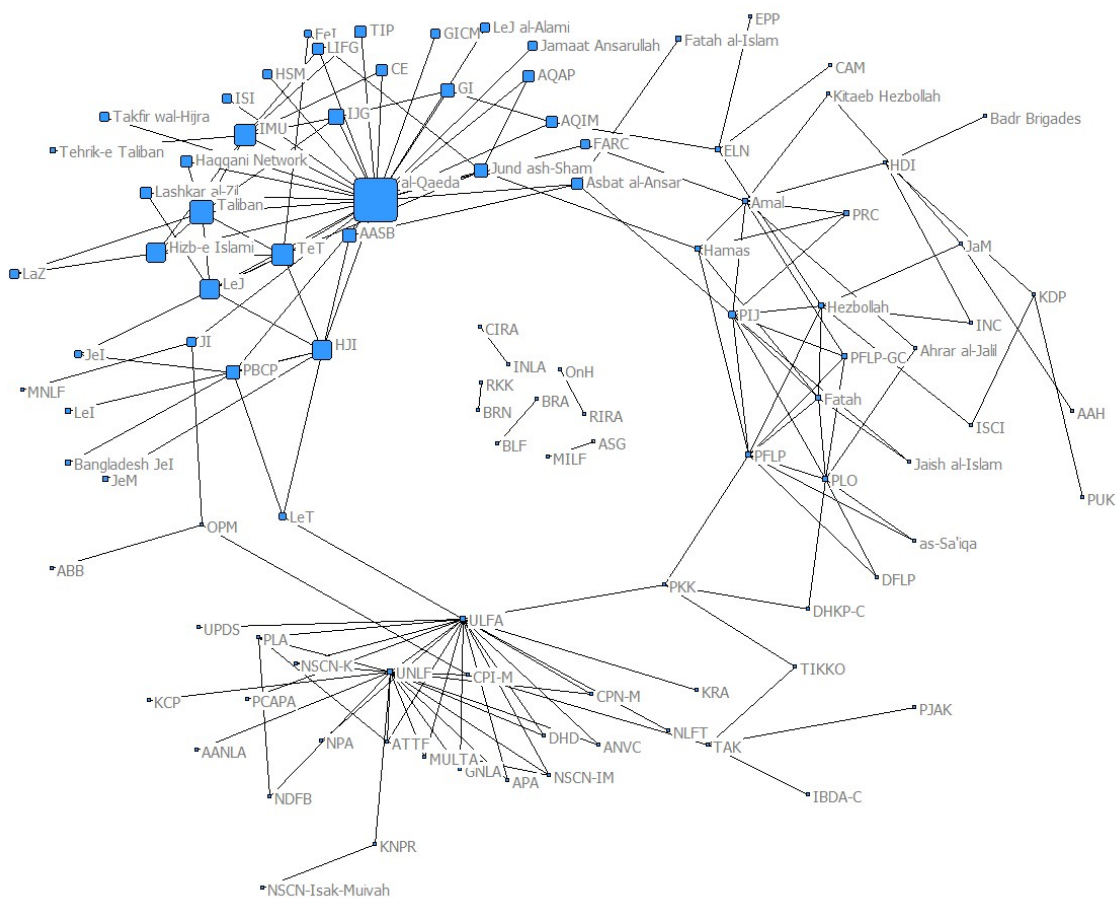
Figure 1.10: 2010 Global Network of Terrorist Group Connections. A node's relative size corresponds to its eigenvector centrality measure.
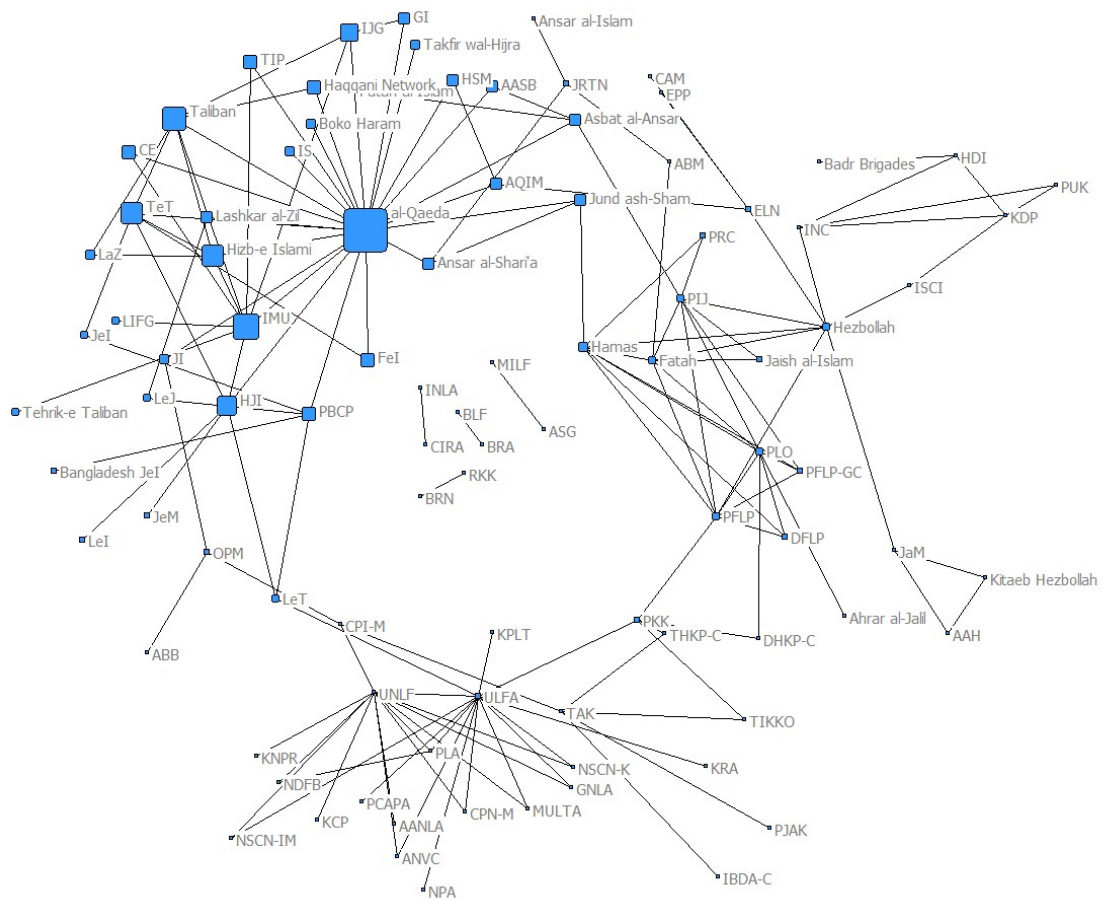
Figure 1.11: 2014 Global Network of Terrorist Group Connections. A node's relative size corresponds to its eigenvector centrality measure.
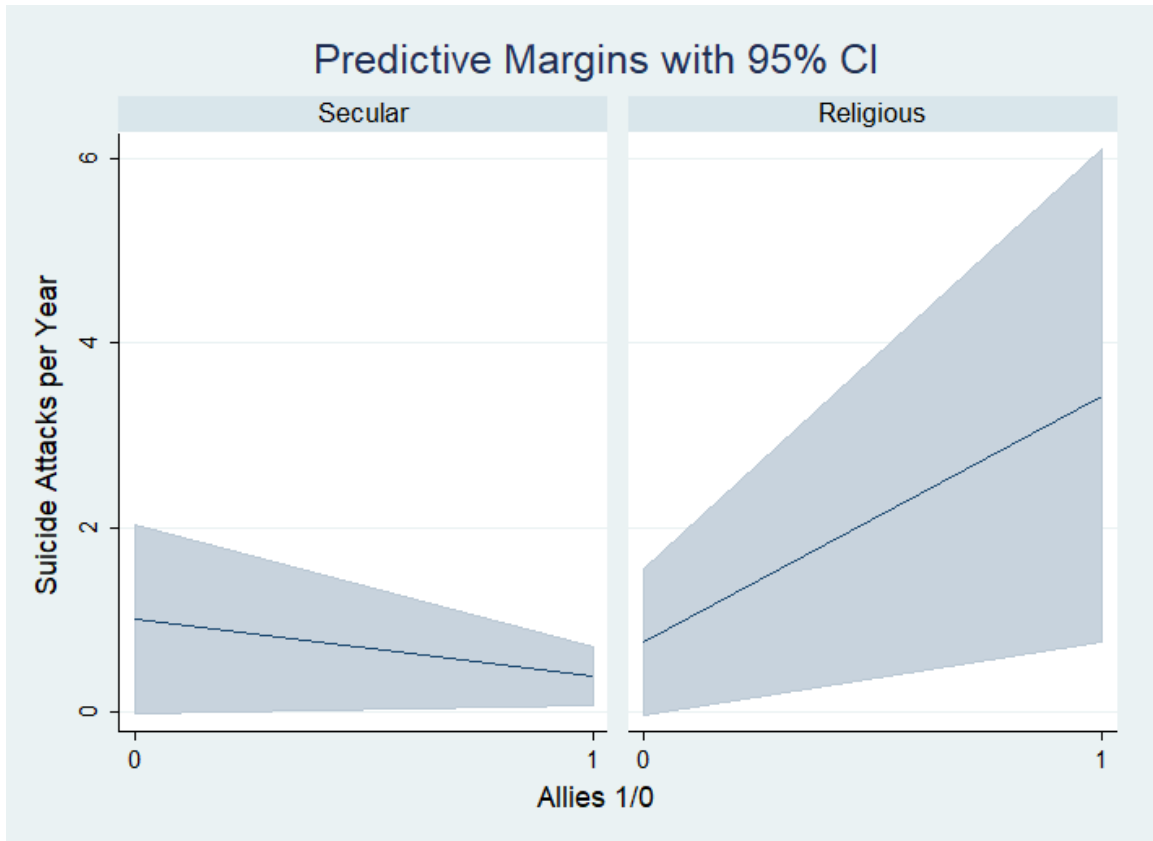
Figure 1.12: The effect of having at least one ally on suicide attacks per year, for both secular and religious group types. Based on the results in Column (2) of Table 2.4.
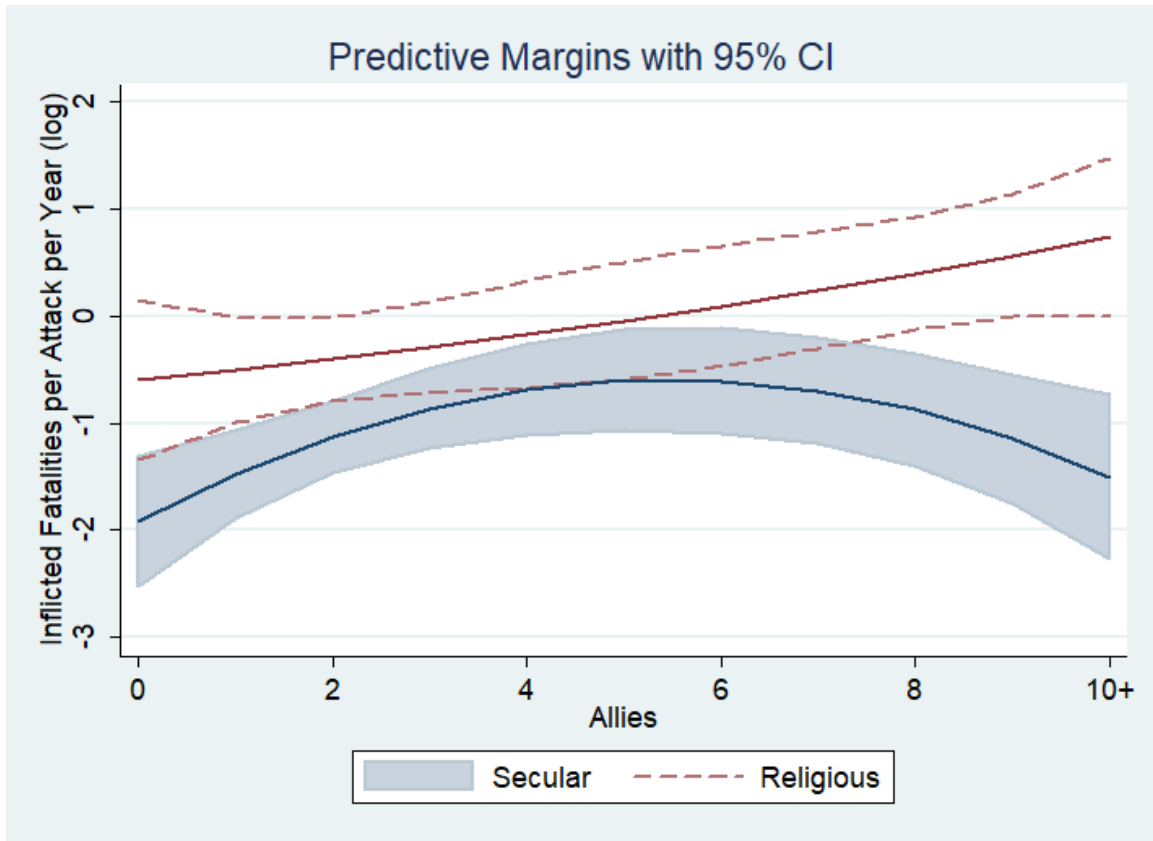
Figure 1.13: Predicted values of (*fatality rate*)$_{it}$ (fatalities per attack per year) for each ideology type, based on the results in Column (6) of Table 2.5. This represents the *intensive margin* of cooperation.
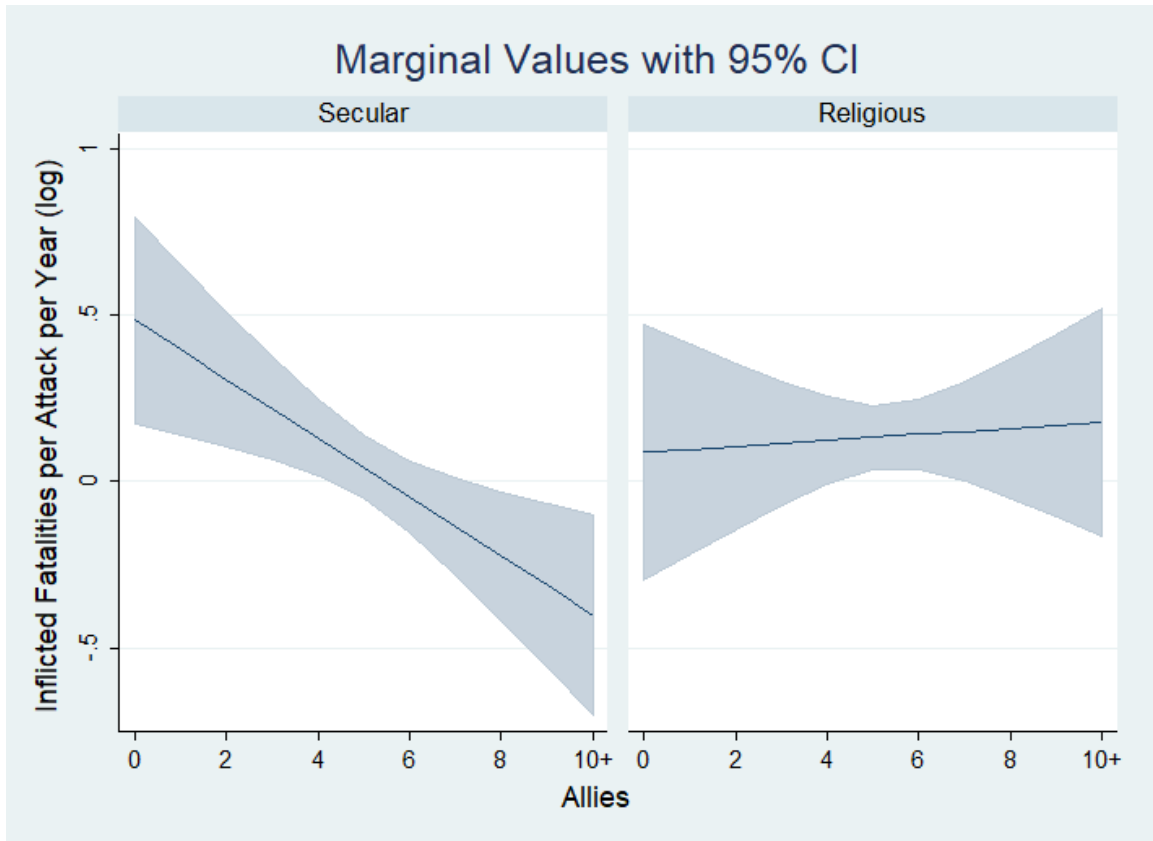
Figure 1.14: Marginal values of (*fatality rate*)$_{it}$ (fatalities per attack per year) for each ideology type at different levels of *Allies*$_{it}$, based on the results in Column (6) of Table 2.5.
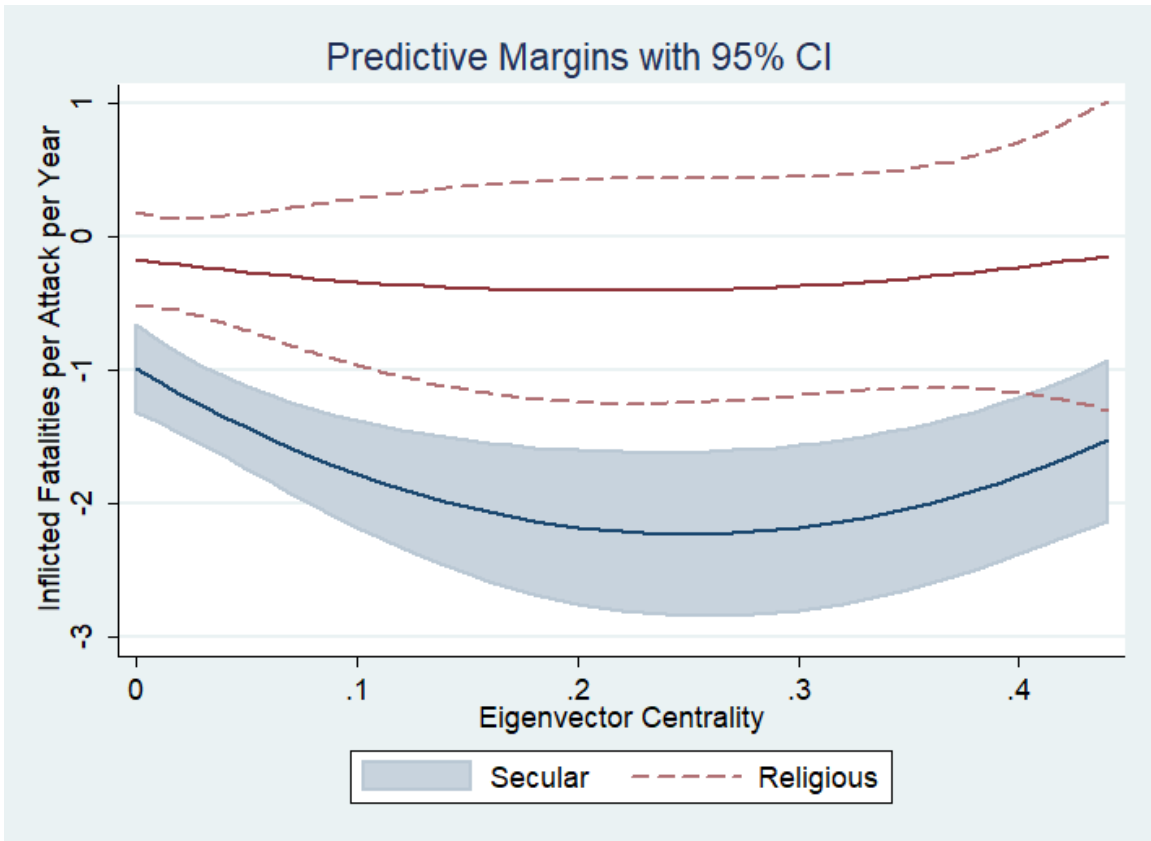
Figure 1.15: Predictive values of (*fatality rate*)$_{it}$ (fatalities per attack per year) for each ideology type, at different levels of (*Eigenvector Centrality*)$_{it}$, based on the results in Column (6) of Table 2.5.
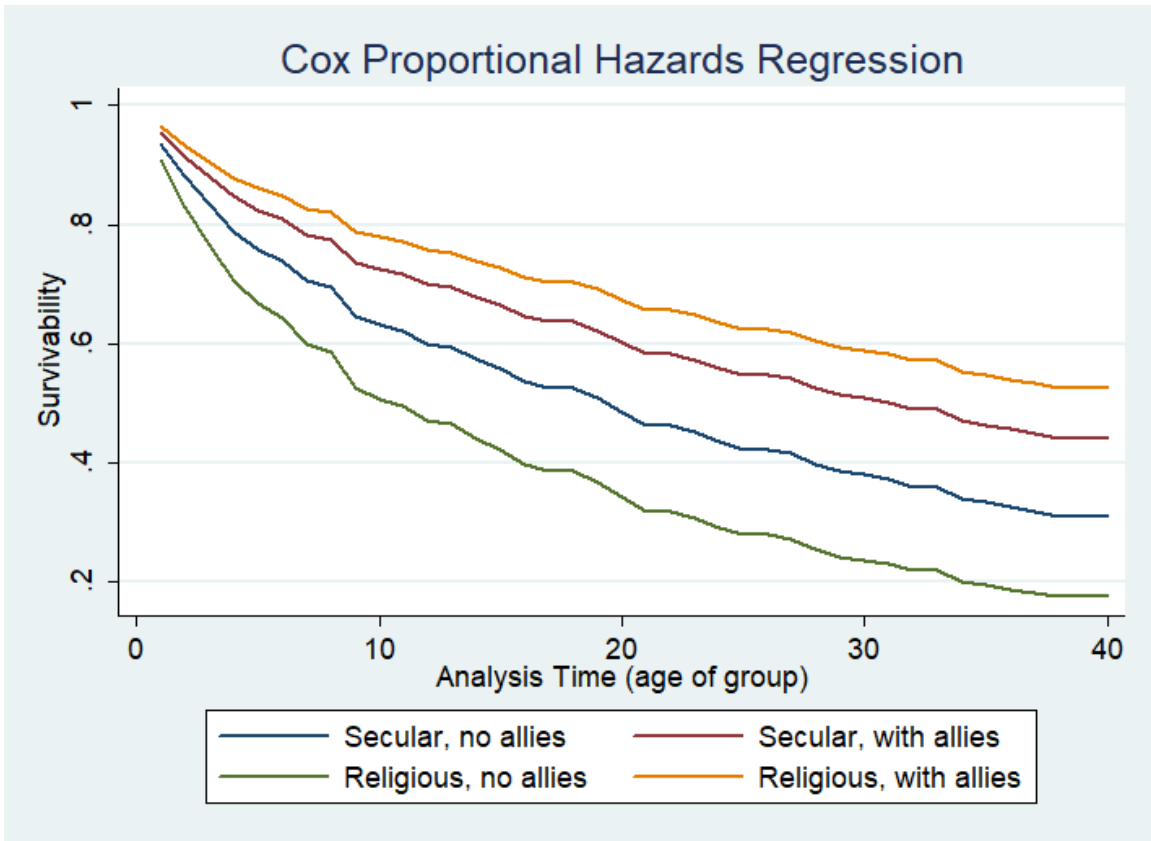
Figure 1.16: The effect of alliances at the extensive margin on the survivability for religious groups versus secular groups.
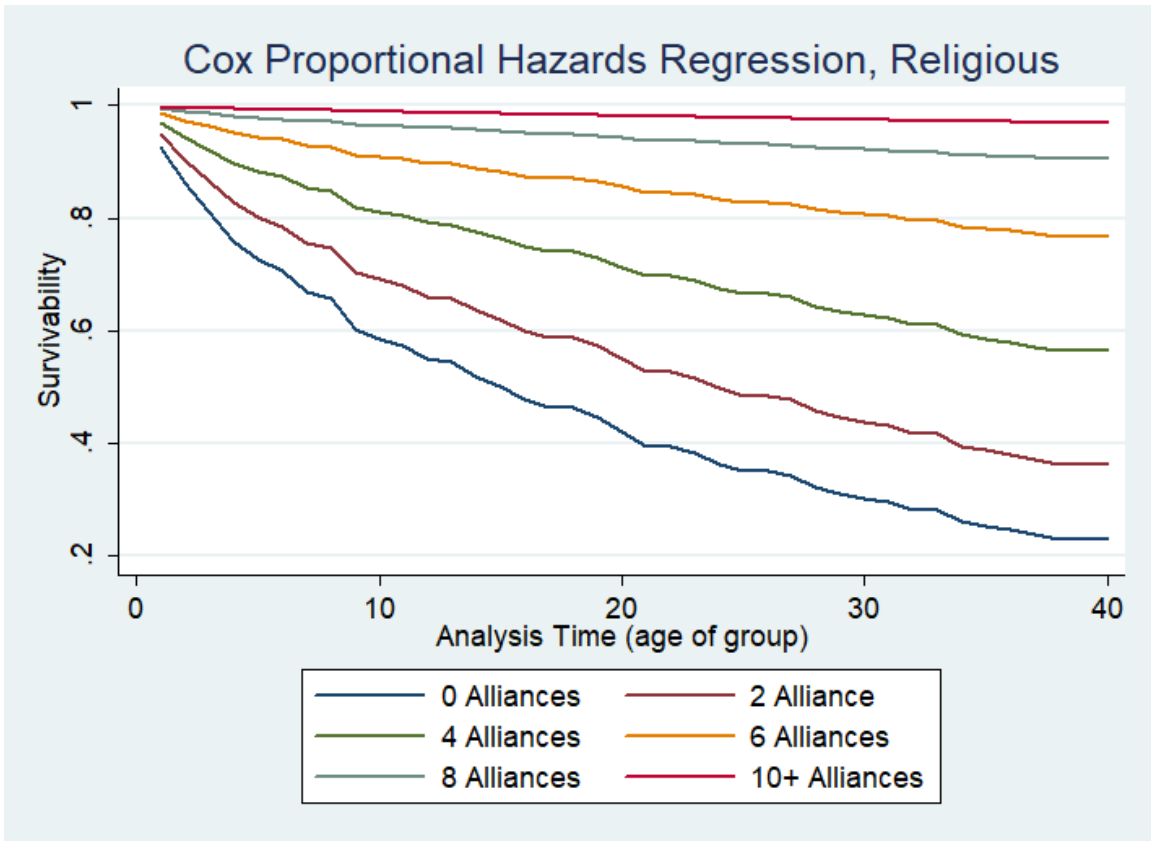
Figure 1.17: The effect of alliances at the intensive margin on the survivability for religious groups.
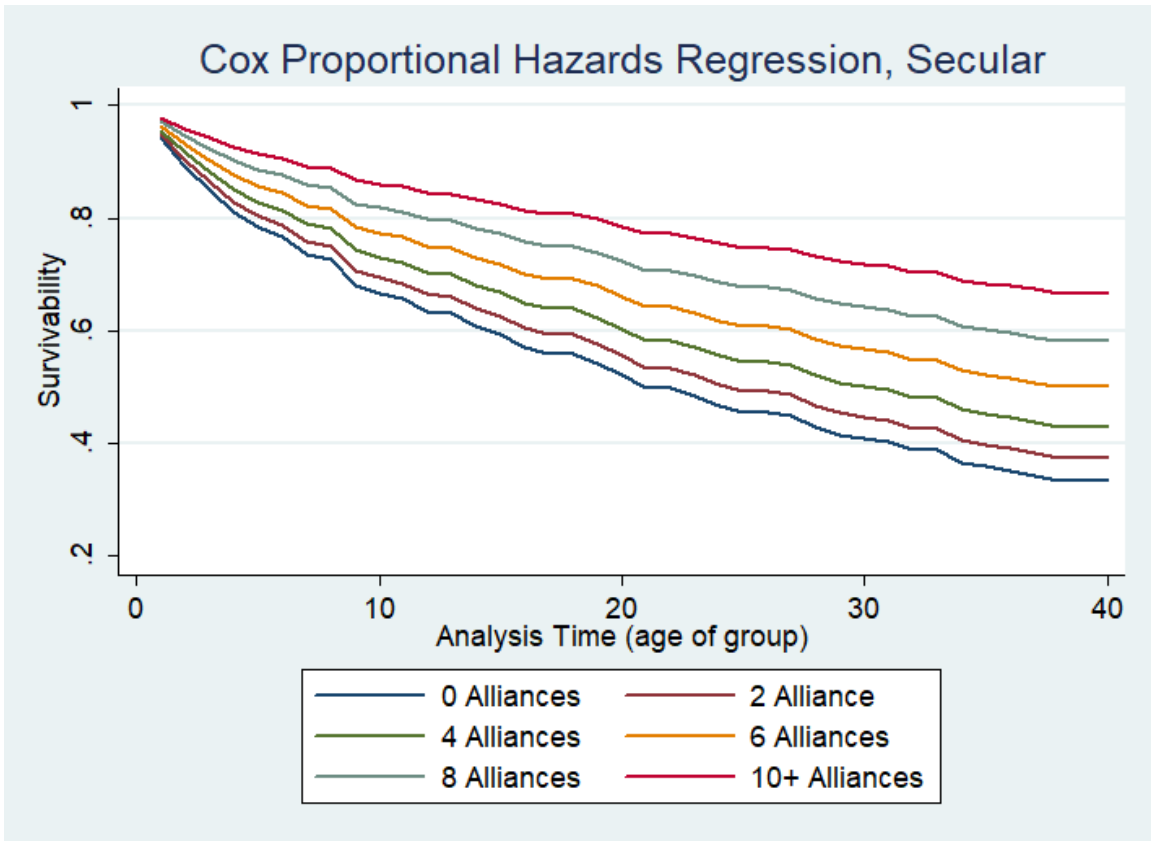
Figure 1.18: The effect of alliances at the intensive margin on the survivability for secular groups.

Chapter 2

An Empirical Analysis of the Club Good Model of Terrorism

I empirically test the club good model of terrorism. Despite an extensive theoretical literature identifying sacrifice and stigma and social service provision as key inputs into the production process by which terrorist organizations induce commitment, solve free riding problems, and mitigate defection concerns, the evidence in support of this hypothesis has been limited. Using a panel dataset containing all documented incidents of terror attacks from 2007-2013 at the state-year level, I empirically test the club good model by employing various observable proxies as exogenous shifters of the marginal product schedules of sacrifice and stigma and social service provision. This is based on the assumption that complying with the demands imposed on members by terrorist groups is costly, and hence an increase in the marginal product schedule will have the effect of screening out low-commitment members, improving group capacity in the production of violence. I examine the impact of the proxies on both overall terrorism and suicide terrorism. I find that sacrifice and stigma has a meaningful effect on both, with a larger quantitative impact on overall terrorism. However, I find that social service provision only has a significant effect on suicide terrorism, providing perhaps the most conclusive validation to date of one of the most compelling predictions made by club framework, namely that terror groups have a comparative advantage in sending operatives on risky suicide missions when they provide social services that create incentives mitigating defection.

2.1 Introduction

In this paper I empirically test the hypothesis that terrorist groups are more effective at perpetuating violence when they are able to extract signals of commitment from members. The theoretical literature notes that the policy of many terror groups to require extreme initiation rites serves a valuable purpose, namely as a costly signal of "commitment" that weeds out uncommitted members and mitigates defection and free riding costs. Based on the economic theory of clubs (Iannaccone (1992); Iannaccone and Berman (2005)), this "club model of terrorism" suggests that these commitment technologies typically take the form of *sacrifice and stigma* (S&S) and social service provision (SSP). *Sacrifice and stigma* refers to costly prohibitions and seemingly gratuitous resource expenditures that raise the cost of membership above that which uncommitted members are willing to pay (Iannaccone (1992); Berman and Laitin (2008); Berman (2009)). S&S can be viewed as the opportunity costs of compliance with sect demands, such as dietary restrictions, dress codes, mandatory schooling, restrictions on work and socializing, and prohibitions on medicine and technology.

The literature also emphasizes that the demands imposed on members by S&S devices make extremist groups efficient providers of benign local public goods, referred to in this study as social service provision (SSP) (Iannaccone (1992)). In other words, S&S and SSP are complementary inputs into the process of organizing a terror group filled with committed members: in order to secure membership and obtain access to the public goods provided by a group, a prospective member must be willing to fully abide by certain prohibitions on behavior, undergo grueling initiation rites, and accept stigmatization that often irreversibly destroy one's outside options. SSP may take the form of local public goods such as law and order, welfare services, education, and healthcare (Berman and Laitin (2008)).

These joint technologies of S&S and SSP mitigate the free-rider problem in two ways. First, the sacrifices required of members create a social barrier to screen out low-commitment individuals who, if admitted into the group, would hold preferences that would not align with the best interests of the group. Second, these technologies change the shadow prices of group activities, as demand for internal club goods rises with the cost of participation in external, non-club activities.

Using a panel dataset containing all documented incidents of terror attacks from 2007-2013 at the state-year level, I empirically test the club good model by employing various observable proxies as exogenous shifters of the marginal product schedules of S&S and SSP, respectively. I find evidence that sacrifice and stigma matters generally to overall terrorist activity and suicide terrorism in particular. Based on the

assumption that the marginal productivity of S&S in inducing commitment from members is positively associated with tension between the group and the general society, I estimate the impact of S&S using observable proxies which measure societal tension at the state level.

I also find that the other commitment inducement technology emphasized in the extant literature, social service provision, matters to suicide terrorism but not overall terrorism. Since the provision of public goods by terror groups is expected to provide a greater incentive to join when these goods are underprovided by local and state governments, I employ proxies for SSP that inform on 1) the conditions of a state's market economy in efficiently delivering goods and services to the population, and 2) the reliability and competence of government institutions in delivering service to constituents. To my knowledge, the key finding in this study with regard to social service provision–that it is a determinant of suicide terrorism specifically–is the first time the hypothesis put forward in Berman and Laitin (2008) has been supported by econometric evidence.

This study makes two main contributions to the empirical literature studying the causes of terrorism. First, I revisit the question of the effectiveness of S&S and SSP as predictors of terrorism using time-varying data, in contrast to the previous two studies which study only cross-sectional data. Terrorism is a complex phenomenon that is heterogeneous over time and space, and studies failing to account for time-varying factors are likely to suffer from endogeneity problems that make it difficult to draw causal inference. While Morales et al. (2018) include a set of six regional dummy variables in their cross-sectional regressions to account for region-specific heterogeneity, this still leaves room for biased estimates, as terrorism can take on different forms even in countries neighboring one another.

Second, this work employs superior empirical measures of terrorism than Morales et al. (2018), to which this present study is most closely related. I employ as my measure of terrorism the precise annual count of attacks inflicted on each country. In addition, I also examine a second measure of terrorism, the annual count of suicide attacks carried out against a country. Because suicide terrorism may represent a different phenomenon than other types of political violence (Piazza (2008a)), especially within the framework of the club theory of terrorism (Berman and Laitin (2008)), there is merit to examining suicide terrorism as a distinct category of terrorism in this kind of empirical investigation. In sum, employing these superior measures of terrorism, as well as using time-varying state-level data, I am able to the provide the most credible test of the club model of terrorism to date.

In Section2.2 I review the theoretical foundation and the empirical evidence, respectively, for the club good model of terrorism. In Section 2.3 I describe the empirical strategy I use to test the club model,

and in Section 2.4 I describe my data. Section 2.5 contains the results of my analysis, and Section 2.6 concludes.

2.2 Literature Review

In the aftermath of the September 11, 2001 attacks, the question of the determinants of terrorism has been a contentious issue. Politicians, academics, and the general public have speculated about the causes of radicalization and the factors that encourage participation in terrorism. The empirical literature on terrorism determinants includes numerous studies examining potential aggregate country-level factors that are thought to influence the behavior of terrorists through changes in the relative costs and benefits to engaging in terrorism, by either raising or lowering the opportunity costs to terrorist activity. Krieger and Meierrieks (2011) provide a summary of the empirical evidence of the various explanations put forth in the literature, finding seven broad 'global hypotheses' of terrorism.[1]

The *economic deprivation* hypothesis, arguably the most famous and the most controversial of the explanations of terrorism, is the idea that terrorism is rooted in poverty [2] This view suggests that poverty and within-country inequality leads to high levels of terrorism by affecting the supply side: economically-deprived people have low opportunity costs to involvement in terrorism. The evidence for this hypothesis is conflicting. On the one hand, Blomberg and Hess (2005), Azam and Delacroix (2006), Azam and Thelen (2008), and Lai (2007) find that wealthy countries (measured by GDP per capita) experience less terrorism. In contrast, Krueger and Maleckova (2002), Krueger (2007), Kurrild-Klitgaard et al. (2006), Basuchoudhary and Shughart (2010), Plümper and Neumayer (2010), Krueger and Laitin (2008), Abadie (2006), and Freytag et al. (2011) in general find little evidence pointing to a foundation for terrorism rooted in economic or educational deprivation.[3][4]

---

[1] These hypotheses are: economic deprivation; modernization strain; institutional order; political transformation; identity conflict; global order; contagion.

[2] In the immediate wake of 9/11, many politicians and public figures insisted that terrorism is caused by poor economic conditions and lack of education. Initially hesitant to draw a connection between poverty and terrorism, President George W. Bush eventually announced on March 22, 2002 in Monterrey Mexico, "We fight against poverty because hope is an answer to terror," with Laura Bush adding, "A lasting victory in the war against terror depends on educating the world's children." British Prime Minister Tony Blair made the poverty-terrorism on many occasions, such as in the aftermath of the London transit system bombings in July 2005: "Ultimately what we now know, if we did not before, is that where there is extremism, fanaticism or acute and appalling forms of poverty in one continent, the consequences no longer stay fixed in that continent." Other prominent figures, including the Archbishop of Canterbury, Bill Clinton, Al Gore, King Abdullah of Jordan, Turksh Prime Minister Recep Tayyip Erdogan, Elie Wiesel, and terrorism scholar Jessica Stern have made similar connections. A notable government study that rejects this hypothesis is the *9/11 Commission Report*, which insists that "terrorism is not caused by poverty" (Krueger (2007), p. 3).

[3] I, likewise, find no significant relationship between terrorism and GDP per capita in my empirical analysis, in Section 2.5.

[4] Another global hypothesis, related to the poverty thesis, suggests that a key driver of terrorism is *modernization*. The idea is that economic, cultural, demographic, technological, and ideological changes in a society creates grievances among traditional elements of society who feel disaffected and left behind by the modern order and turn to violence as a result.

Another ongoing debate, studied in the literature since the 1980s, is the influence of regime type on terrorism, specifically whether or not democracy fosters or deters terrorism. For a good overview of this literature, see Gaibulloev et al. (2017), who note a general lack of consensus on the issue.[5] While democracies offer nonviolent means of participating in the political order, which on the surface would seem to mean a relatively high opportunity cost to engaging in political violence, it has also been argued that democratic regimes are more vulnerable to terrorism because their obligation to civil liberties constrains counterterrorism tactics. On the other hand, while the ability of autocratic regimes to curtail civil liberties would imply, all else equal, higher marginal costs to perpetuating terrorism relative to democracies (i.e., a decrease in the supply curve), the repressive nature of autocracies produces grievances and political disenfranchisement that likely leads to an increase in the marginal benefit of terrorism relative to that of peaceful political expression. The empirical evidence is mixed: Krueger and Maleckova (2002), Kurrild-Klitgaard et al. (2006), Krueger and Laitin (2008), and Piazza (2008b) are examples of studies which find democracies are prone to terrorism, whereas Eubank and Weinberg (2001) and Lai (2007) find the reverse to be true. Gaibulloev et al. (2017) formulate a game-theoretic model which predict that political regime type has an inverted U-shaped impact on terrorism, wherein the middle range between democracy and dictatorship is most conducive to terrorism. Using a variety of empirical methods they then find a robust inverted U-shape relationship between regime type and terrorism.

Of particular relevance to this present study is the *civilization clash* hypothesis of conflict, originally expounded by Huntington (1996). The main idea is that differences between identity groups along religious, ethnic, tribal, or cultural lines is a primary source of conflict. This hypothesis would suggest that terrorist groups can exploit identity tensions by appealing to tribal solidarity, leading to lower recruitment costs and hence an increase in the supply of terrorism. Identity clashes may also increase the demand of terrorism, as identity groups may use real or perceived persecution against their constituents as a justification for violence against other groups. The empirical evidence for the identity clash hypothesis of terrorism is mixed. Piazza (2008b) and Basuchoudhary and Shughart (2010) find a positive link between identity fractionalization and terrorism in states, although many other studies find weak links.[6]

To my knowledge, only two previous studies have empirically tested the club good model of terror-

---

[5]The mixed and inconclusive findings in the literature are due to reasons including a lack of uniformity in the sample countries, time periods, terrorism indicators, and methodologies used across studies. Most studies fail to account for unobserved heterogeneity in their panel data regressions, and also fail to consider a potential nonlinear relationship between regime type and terrorism.

[6]Krieger and Meierrieks (2011) suggest that the lack of evidence in support of the theory may be due to a measurement issue, as common variables used for identity clashes, such as ethnic, religious, or linguistic fractionalization within a country, may be poor proxies for societal tension.

ism. Using data on terrorist activity in Israel in Lebanon between 1968 and 2006, Berman and Laitin (2008) test the hypothesis that a religious extremist group is a more effective and efficient producer of terrorism when the group provides local public goods. As the club framework suggests, social service provision by a terrorist group gives members extra motivation to not defect, making the group a relatively "strong club." Out of all of the major terror organizations active in Israel and Lebanon over the sample, period, only two of them, Hamas and Hezbollah, were social service providers, and Berman and Latin find that these groups were significantly more lethal than the other, non-social service providing, groups. Over the period 1968-2006, Hamas and Hezbollah averaged 5.4 fatalities over 160 attacks, killing 862 people, while the other groups (Palestinian Islamic Jihad (PIJ), Popular Front for the Liberation of Palestine, Fatah/PLO, Democratic Front for the Liberation of Palestine, and any unknown groups) averaged 2.3 fatalities per attack, killing 519 people over 228 attacks.

The club good logic also predicts that groups providing benign local public goods have a comparative advantage in conducting suicide attacks. When traditional "soft" targets are protected sufficiently well by a state, regular terror tactics are often ineffective and militants may therefore choose to use suicide terrorism, a tactic that remains effective against well-defended "hard" targets that have a relatively high likelihood of apprehension or death of the terrorist. Suicide tactics are relatively rare, however, not because (as is popularly assumed) it is necessarily difficult to recruit members willing to sacrifice themselves, but because in these high-stakes operations the perceived costs of potential defection make the tactic prohibitively costly. Faced with the tactical problem of defection, "strong" clubs, whose members have relatively low utility from defection due to worse outside options, have an advantage in sending operatives out on suicide missions. Berman and Laitin (2008) find that the two "strong," social-service providing groups in their data, Hamas and Hezbollah, carried out 63 and 44 suicide attacks, respectively, while highest total among the non-social service providers was the PIJ, which conducted 37 such attacks. Taken together, Hamas and Hezbollah averaged 11.4 fatalities per suicide attack, while the other groups averaged only 3.3.

Berman and Laitin's empirical study examining the relationship between commitment enhancement technologies and terrorism is far from exhaustive or conclusive, however. Of principle concern, inference from their analysis is based exclusively on an inspection of cross-sectional organization-level summary statistics, leaving questions as to whether their findings would hold within a regression framework in which various control variables are considered, especially time-varying factors. Further, by only using organization-level data from Israel, their analysis is limited in scope and it is unclear if their find-

ings are generalizable to other areas of conflict. Finally, their study only estimates the effects of SSP on the incidence of terrorism, while not estimating the potential effects of the other crucial commitment enhancement technology, S&S.

The other study to empirically measure the effects of commitment enhancement technologies on terrorism is Morales et al. (2018), to which this present work is most closely related. Those authors use cross-sectional, country-level data to estimate the effect of S&S and SSP on the incidence of terrorism. Their research design is to employ certain observable proxies for S&S and SSP as explanatory variables, using these proxies as exogenous shifters of the marginal product schedules of the S&S and SSP commitment technologies. Using a country-level index measuring the impact of terrorism in 2010, these authors find robust evidence in support of the hypothesis that the deployment by terror groups of S&S and SSP devices increases the frequency and lethality of terror attacks.

2.3   Research Design

In my empirical analysis I test whether the incidence of terrorism in a country increases as the marginal product of commitment enhancement devices increases. Obtaining direct measures of the commitment inducement technologies is of course impossible. However, Morales et al. (2018) note that exogenous variation in prevailing socio-political conditions can shift the marginal product schedules of a terror group's commitment enhancement technologies. This is because the efficacy of any sacrifice and stigma technology (such as a group dress code or dietary restrictions) is a function of the cost that complying with the demand imposes on members. For example, the cost of complying with a mandate to wear traditional Muslim garb is higher for group members when such garb is stigmatized (or even outlawed) in the broader society. In general, then, as tension between a group and society increases, the marginal productivity of these commitment inducing technologies should also increase. This in turn can be expected to make the average commitment level of group members relatively high, implying less defection and greater overall group capacity. Observable proxies of tension between terror groups and society can therefore be employed as exogenous shifters in an empirical analysis to measure the effects on terror activity of commitment technologies.

Likewise, I also test the explanatory power of SSP in predicting terrorism. As a complementary input to S&S, SSP serves as a credible signal for the competence of a terror group that incentivizes loyalty and thus can also be expected to greater operational capacity.

2.4 Data

2.4.1 Dependent Variable

This empirical study analyzes a panel dataset examining the impact of commitment inducement technologies on the incidence of terrorism between the years 2007 and 2013, where the unit of analysis is state-year. In my analysis I employ country-level data on violent terrorist acts committed as my dependent variable. I derive these data on terror attacks from the Global Terrorism Database (National Consortium for the Study of Terrorism and Responses to Terrorism (START)), a comprehensive, open access panel dataset that includes detailed information on over 170,000 attacks from 1970 to the present. The GTD team at START maximizes the accuracy and completeness of its database through a rigorous data collection methodology involving both automated and manual data collection strategies. Each month, the team uses machine learning techniques to sift through hundreds of thousands of media articles published worldwide in order to identify the relatively small subset of articles relevant to describing terror attacks. Once this initial automated step is complete, the GTD team then manually reviews a second subset of articles (about 16,000 per month) to identify unique terror events, which are then researched further and coded according to the GTD inclusion criteria.

The GTD defines a terrorist attack as "the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation." To be construed as a terror attack and included in its database, an incident must meet all three of the following criteria:

- The incident must be intentional.

- The incident must entail some level of violence or immediate threat of violence. Such violence may include property violence and/or violence against people.

- The perpetrators of the incidents must be sub-national actors. Hence, the database does not include acts of state terrorism.

In addition to that basic definition, two of the following three criteria must also be met to be included in the database:

- The act must be aimed at attaining a political, economic, religious, or social goal. In terms of economic goals, the exclusive pursuit of profit does not satisfy this criterion. It must involve the pursuit

60

of more profound, systemic economic change.

- There must be evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) than the immediate victims.

- The action must be outside the context of legitimate warfare activities.

To test my hypothesis of the effect of commitment inducement technologies on the incidence of terrorism, I employ two different variables from the GTD as dependent variables. The first variable is the number of total terrorist attacks carried out in a particular country in a given year. I then run my models using a second dependent variable, the number of total suicide attacks carried out in a particular country in a given year. This latter variable is a subset of the variable denoting the number of total attacks carried out: in the GTD this variable, *suicide attack*, is coded 1 in those cases where the GTD team finds evidence that the perpetrator did not intend to escape from the attack alive, and 0 otherwise.

The primary advantage of my analysis over that of Morales et al. (2018), who conduct the only other econometric study examining the relationship between commitment enhancement technologies and the incidence of terrorism, is the longitudinal nature of my data. The analysis done by Morales et al. (2018) is cross-sectional, using data from 158 to estimate the effects of S&S and SSP on the impact of terrorism in the single year 2010. They employ as the dependent variable a composite score, the Global Terrorism Index (GTI), which reflects the extent to which countries are impacted by both transnational and domestic terrorism for the year 2010. The GTI, formulated by the Institute of Economics and Peace, is based on the Global Terrorism Database, and scores each country on a scale from 0 to 10 with 0 representing no impact from terrorism and 10 denoting the highest impact from terrorism.

2.4.2 Explanatory Variables

For my key independent variables I follow Morales et al. (2018)'s use of certain state-level indicators as proxies for the commitment inducement technologies. I use two sets of proxies, one for exogenous shifters of S&S and another for exogenous shifters of SSP. The proxies for S&S are 1) the Pew Forum's government restrictions index (GRI), 2) the Pew Forum's social hostilities index (SHI), and 3) the Failed State Index's Group Grievance (GG) index. The three proxies I use for SSP are 1) the Failed State Index's Uneven Economic Development (UED) indicator, 2) the Failed State Index's Refugees and Internally Displaced Persons (RIDP) indicator, and 3) Transparency International's Corruption Perception Index (CPI).

In Appendix C, I provide a summary of the methodology used to construct each of these variables (details obtained from the respective sources of the variables).

The GRI and SHI indexes are designed to measure obstacles to religious expression and practice at the national and local level, respectively (Pew Research Center (2011)). The GRI specifically measures government laws, policies, and actions that restrict religious beliefs or practices, including government efforts to ban particular faiths, prohibit conversions, limit preaching or give preferential treatment to one or more religious groups. Comprised of 20 measures of restrictions, the GRI ranges from 0 to 10, with 10 signifying the highest level of government restrictions. Composed of 13 questions regarding social hostilities and also on a 0 to 10 scale, the SHI measures acts of religious hostility by private individuals, organizations and social groups, including mob or sectarian violence, harassment over attire for religious reasons and other religion-related intimidation or abuse. The third proxy I use for S&S, the Failed State Index's GG index (Fund for Peace (2015)), focuses on divisions and schisms between different groups in society, such as divisions based on social or political characteristics. Ranging from 1 to 10, this indicator can most easily be understood as a proxy for the state of tension and violence between groups in society.

The economic intuition for using these observable variables as exogenous shifters of the marginal productivity of S&S rests on the assumption that terror groups deploy devices that effectively identify high commitment members and screen out low commitment individuals. The marginal effectiveness of these commitment tools can be assumed to increase with the cost imposed on members to comply with the strictures; all else equal, an increase in costs of abiding by the sacrifices demanded by a group screens out individuals for whom the opportunity cost to membership is sufficiently prohibitive, leading to an increase in the higher average level of commitment among group members. Based on the theoretical framework outlined in Section ??, these compliance costs can be expected to increase with societal tension. As such, the observable measures described above are credible exogenous shift factors for the marginal product schedule for the commitment inducement technologies used by terror groups.

I also employ three indicators as proxies for SSP. Raynold (2013) contends that SSP functions as a credible signal for the competence of a terror group, serving as a complementary technology to S&S that incentivizes loyalty. As noted by Iannaccone (1994) and (Berman and Laitin (2008), the reason terror groups supply SSP is to gain credibility in their communities when government provision of social services is relatively deficient. Offering public goods provides an opportunity for a group to induce loyalty and commitment from its operatives and by extension improve its overall effectiveness. Hamas, Hezbollah, the Taliban, the Muslim Brotherhood in Egypt, and Muqtada al-Sadr's Mahdi Army in Iraq are notable

examples of organizations that have a history of establishing social service network, offering services such as medical clinics, school, charities, support for orphans, drug treatment centers, youth clubs, sports clubs, and mosques (Berman and Laitin (2008).

My three proxies for SSP are the Failed State Index's Uneven Economic Development (UED) and Refugees and Internally Displaced Persons (RIDP) indicators, and Transparency International's Corruption Perception Index (CPI). The UED considers structural inequality in a state's economy, both real and perceived, irrespective of the actual performance of the state's economy. This indicator considers the existence of structural inequality based on group identification (such as racial, ethnic, or religious), or based on other factors such as education or region. The RIDP (referred to as 'Refugees/IDP' in my analysis) measures two phenomena: first, it measures pressure put upon states by population inflows of of refugees (i.e., asylum states). This indicator also measures the Internally Displaced Persons and Refugees by country of origin, recognizing that factors such as violence and health epidemics may increased pressure upon a state to offer resources to its population. The UED and RIDP may each take on a value from 1 to 10, with 10 indicating a state with the highest degree of structural inequality or the highest degree of pressure imposed by problems related to refugees or internally displaced persons. The CPI (Transparency International (1995)), which takes on a value between 0 and 10 with 0 signifying the most corrupt and 10 the least corrupt, defines corruption as the abuse by public officials or public institutions for private gain. Corruption is a credible proxy for SSP because it hinders the ability of market forces and governments to deliver social services to citizens, and hence creating opportunities for terror groups to induce loyalty from members through their own provision of basic public goods Raynold (2013).

In my analysis I also control for various other state-level attributes that may be correlated with my main explanatory variables and my dependent variable. State-level controls that I use include population and GDP per capita for a state in a given year. I do not include a direct control for regime type in my main results because the best indicator for such, the Polity IV Project's *Polity* variable which denotes regime type on a scale from autocratic to democratic, is missing data over my sample period for many conflict-ridden countries, such as Afghanistan, Iraq, Somalia, and Sudan. As an adequate substitute for Polity score, I include indicators that measure state fragility, based on the "State Fragility Index and Matrix 2016" (Center for Systemic Peace (2016)).[7] These data consist of, for all independent countries in the world where the total population is greater than 500,000 (167 countries), scores that measure state

---

[7]These data were originally produced in "Global Report on Conflict, Governance, and State Fragility 2007." In order to make the indicators comparable across time, threshold values for each categorical fragility score based on cut-points derived in a baseline year, 2004.

vulnerability. A state's fragility is "closely associated with its *state capacity* to manage conflict, make and implement public policy, and deliver essential services, and its *systemic resilience* in maintaining system coherence, cohesion, and quality of life, responding effectively to challenges and crises, and sustaining progressive development" (Center for Systemic Peace (2016)). The dataset contains indicators along four performance dimensions (security, political, economic, and social) that measure state fragility based on specific criteria. The overall State Fragility Index score comprises an *Effectiveness Score* and a *Legitimacy Score*, each of which comprises scores for each of the four performance dimensions. Each performance dimension is rated on a four-point fragility scale, where 0 means "no state fragility," and 3 means "high state fragility." I provide a complete description of these State Fragility variables in Appendix B.

The specific model which I estimate is

$$\text{Terrorism}_{jt} = \beta_0 + \beta_1 \text{S\&S}_{jt} + \beta_2 \text{SSP}_{jt} + + X'_{jt}\theta + \gamma_j + \delta_t + u_{jt}, \tag{2.1}$$

where *Terrorism*$_{jt}$ is the amount of terrorism conducted in country j in year t, and X contains a set of control variables. S&S$_{jt}$ and SSP$_{jt}$ denote, for country j in year t, the various proxies for the Sacrifice and Stigma and Social Service Provisions proxies, respectively. γ_j and δ_t are state and year fixed effects, respectively. I cluster standard errors at the state level.

2.5 Results

Before discussing the regression results, I will first report basic summary statistics of my data. Descriptive statistics for all variables used are presented in Table 2.1. The unit of observation is state-year, with a sample period 2007-2013. The average country in my sample experiences about 43 terrorist attacks per year (standard deviation of 191), and 2.23 suicide attacks per year (standard deviation of 15). In Table 2.2 I present, for each of the 147 countries in my sample, the scores for each of the six commitment enhancement device proxies, averaged across the entire sample period, 2007-2013.

In Figures 2.1-2.6 I generate scatter plots showing the relationship between the logged value of terrorist attacks and each respective commitment enhancement device proxy for the 25 most populous countries. Although not sufficient to demonstrate any sort of causality, these graphs are nevertheless useful in gauging the basic relationships between terrorism and the proxies for S&S and SSP. In general, I observe the expected correlation between terrorism and each proxy, both when the sample includes only

the 25 most populous states and when the sample includes all states. Of the three proxies for S&S, I observe the strongest correlation with the Social Hostilities Index (corr=0.59), which measures acts of religious hostility by private individuals, organizations and social groups. The correlation between terrorism and the Group Grievance index, which focuses on discord between groups in society, is 0.40. Those two proxies contrast to the comparatively low correlation (corr=0.18) between terrorism and the Government Restrictions Index; this disparity is notable because on the surface it suggests that animosity and tension between, and oppression of, various identity groups is a stronger determinant of terrorism when the persecution derives from the grassroots level than from the state level. This is all the more striking because there is a high degree of correlation between each of the three proxies.[8]

The relationships between each of the SSP proxies and terrorism are almost identical, with correlations around 0.27 for the 25 most populous states (note that for the Corruption Perception Index proxy, 0 indicates the *highest* level of corruption, so the negative trend between this variable and terrorism is consistent with one's intuition).

2.5.1   Effects of Commitment Enhancement Devices

Tables 2.3 and 2.4 display OLS results for coefficients based on Equation 2.1. The dependent variable in Table 2.3 is the logged value of total violent attacks carried out in country j in year t, and the dependent variable Table 2.4 is the logged value of total suicide attacks carried out in country j in year t.[9]

In each table, Columns (1)-(6) each contain a single S&S or SSP proxy, and Column (7) includes all of the proxies. Accordingly, Specifications (1)-(3) provide separate estimates for the three S&S proxies, GRI, SHI, and GG, respectively, and Specifications (4)-(6) give separate estimates for the three SSP proxies, CPI, Economic Inequality, and Refugees/IDP, respectively. To simplify interpretation and comparison between proxies, I follow Morales et al. (2018) by using a standardized index of each indicator in the analysis.[10]

Looking first at Table 2.3, the results suggest that two out of the three proxies for S&S have a statistically significant, positive effect of terrorism, while none of the proxies for SSP are significant. This is in contrast to Morales et al. (2018), who find that each proxy for S&S and SSP has the expected sign and is statistically significant at conventional levels. Column (2) indicates that a one standard deviation increase

---

[8]The overall correlation between GRI and SHI is 0.65; between GRI and GG the correlation is 0.469; and between SHI and GG the correlation is 0.59.

[9]Each of these variables is found to be highly right-skewed. To account for the zeros in the data, I use a $\log(x+1)$ transformation for both outcome variables, total attacks and suicide attacks.

[10]For each index i in time t, the standardized index, SI, is defined to be $SI_{it} = [I_{it} - \text{mean}(I_{it})]/\text{std dev}(I_{it})$, where I_{it} is the raw index.

in the Social Hostilities Index increases terrorism in a country by about 35%, significant at the 1% level. In Column (3), a one standard deviation increase in the Group Grievance index increases terrorism in a country by about 85%, also significant at the 1% level. These results hold in Specification (7), which includes all S&S and SSP proxies. I find that the third proxy for S&S, GRI, is not statistically different from zero, both in Column (2) and in Column (7).

Turning next to interpreting the proxies for SSP on the incidence of terrorism, Column (4) predicts that a one standard deviation increase in CPI (signifying a *decline* in corruption) decreases terrorism by 33%, although this result is not statistically significant. Likewise, the coefficient on Refugees/IDP in the Column (6) indicates that a one standard deviation increase in this variable is associated with a 24% increase in terrorism. Although this is the expected sign, the estimate is not significant. Hence, while I find explanatory power for the effect on terrorism of S&S in Table 2.3, I find no evidence that SSP is a strong determinant of terrorism.

In some of the specifications in Table 2.3 I also find a positive effect, significant at the 10% level, on terrorism for the State Fragility Index (SFI) Effectiveness Score which measures the overall health of a state's institutions. It is unclear to me why the Effectiveness Score is significant across models while the Legitimacy score is not, considering these two variables are highly correlated with one another (corr=0.77).[11] This discreet variable takes on a value from 0 to 13, with 13 indicating a state with "high fragility." To my knowledge, this is the first study to examine the relationship between the State Fragility Index and terrorism, and the nontrivial effect on terrorism predicted by the Effectiveness Score at the 10% level–a one unit increase in this index increases terrorism by about 20%–is an interesting association that warrants future investigation. Consistent with most of literature (see Section 3.1) for an overview), I find no significant relationship between terrorism and GDP per capita.[12]

Table 2.4 reports estimates using the same explanatory variables but with the dependent variable now defined as the logged value of the number of suicide attacks carried out in country j in year t. Consistent with the results obtained in Table 2.3, I find a positive, albeit weaker, relationship between SHI and GG, respectively, on the one hand, and suicide terrorism on the other. Column (2) shows that a one standard deviation increase SHI, one of the proxies for S&S, bolsters yearly suicide attacks in a country by

---

[11]A description of the State Fragility Index variables is provided in Appendix B.

[12]Inclusion of the regime type measure *Polity* into the models does not have any qualitative effect on my estimates; results with the inclusion of this variable are presented in Tables 2.7 and 2.8 in Appendix A. When I include *Polity* only as a linear term (not presented), I consistently find that democracy is a positive influence on terrorism. However, when I include a quadratic term of this variable in the models as well, I find a statistically insignificant, though not entirely nontrivial positive effect of the quadratic term in many of the models, perhaps indicating an interesting nonlinear effect of regime type on terrorism, a deeper analysis of which goes beyond the scope of this present study.

about 14% ($p < 0.01$), 21 percentage points less than the effect on overall terrorism predicted in Table 2.3. In Specification (3), a one standard deviation increase in GG increases suicide terrorism by 32% ($p < 0.10$), 53 percentage points less than that predicted in the preceding table. I again find that the GRI proxy for S&S has no meaningful impact on terrorism.

Moving to the estimates for the SSP proxies in Table 2.4, I find significant effects on two of my three proxies, CPI and Refugees/IDP, respectively. Column (4) suggests that a one standard deviation increase in the CPI (i.e., a *decline* in corruption) decreases suicide attacks by 20% ($p < 0.10$), although the coefficient on this variable loses statistical significance in Column (7). I find in Specification (6) that a one standard deviation increase in Refugees/IDP increases suicide terrorism by 21% ($p < 0.10$).

That I find evidence in favor of the relevance of SSP when it comes to suicide terrorism but *not* in overall terrorism is an interesting finding, one that I believe is consistent with the theoretical literature. Berman and Laitin (2008) argue that "as targets [of terrorists] harden conventional attacks are disfavored, and suicide attacks are increasingly chosen." The authors suggest that, based on the club model of terrorism, the types of militant organizations which can thrive in hard-target environments are those with social service provisions, as social service provision induces the high levels of loyalty required to successfully execute high-risk operations like suicide missions. To clarify the economic logic here, the costs of using the tactic of suicide terrorism (rather than normal insurgency) stem not only from the loss of manpower that occurs if the attack is successful, but also because the risk of defection is high in these high-stakes operations. For most organizations, the utility which members could get from defection due to strong outside options is sufficiently high, so that suicide terrorism will typically not be incentive-compatible for the group. The organizations which do carry out suicide terrorism, on the other hand, will tend to be those whose members have worse outside options, implying a lower likelihood of defection. By providing services to members and their families, groups supply additional motivation not to defect by diminishing the relative value of outside options. Assuming that proxies in my model are valid exogenous shifters of the marginal product schedules of S&S and SSP technologies, and thereby impelling groups to adjust their deployment of the technologies accordingly, the predicted effects in my model of CPI and Refugees/IDP are perhaps the strongest evidence to date validating the Berman and Laitin hypothesis, "*religious radicals can confidently take on high-value targets if they are affiliated with a club that provides local public goods.*"

2.5.2 Robustness Check

As a robustness check, I re-run the above models to include both concurrent and lagged variables of each proxy. While this does not necessarily mitigate all endogeneity concerns, it helps to cope with the possible existence of mild endogeneity between terrorism and concurrent state-level characteristics. Estimates for these models are reported in Tables 2.5 (DV=total terrorist attacks) and 2.6 (DV=total suicide attacks). These results are largely consistent with those in Tables 2.3 and 2.4, which do not include lagged variables. For example, in Specification (7) of Table 2.5, while controlling for the concurrent value of SHI, the lagged value for SHI is positive and statistically significant ($p < 0.01$); a one standard deviation increase in the previous year's SHI is predicted to increase terrorism by 24%. The estimate on the lagged S&S proxy GG is also significant in Column (7). However, none of the SSP proxies have statistical significance. In Table 2.6, two of the three lagged S&S variables, GRI and SHI, are predicted to have statistically significant effect on suicide terrorism, although none of the lagged SSP variables are found to be significant. Thus, the main findings in Section 2.5.1 are generally, although not strongly, robust to the inclusion of variables controlling for timing and incidence.

2.6 Conclusion

In this study, I tested the club good model of terrorism. Using a panel dataset of 147 counties over the period 2007-2013, I measure the impact on overall terrorism and suicide terrorism of various proxies for sacrifice and stigma and social service provision. This analysis is unique in the literature in that it is the first to test the club model using panel, rather than cross-sectional, data.

As my main results, I find (1) evidence that sacrifice and stigma matters generally to overall terrorist activity and suicide terrorism in particular. Defined as seemingly-gratuitous costly demands required to join and remain in good standing with many terrorist groups, sacrifice and stigma solves free rider problems by screening out individuals who lack sufficient commitment. Based on the theoretical assumption that the marginal productivity of sacrifice and stigma in inducing commitment from members is positively associated with tension between the group and the general society, I estimate the impact of S&S using observable proxies which measure societal tension at the state level.

(2) I find that the other commitment inducement technology emphasized in the extant literature, social service provision, matters to suicide terrorism but not overall terrorism. Groups often provide public goods and services (e.g. welfare, schooling, healthcare) to members as a way to signal their compe-

tence and provide motivation against defection. Social service provision becomes a more valuable tool to groups when the services offered are relatively scarce in the secular society. As such, I employ proxies for SSP that inform on 1) the conditions of a state's market economy in efficiently delivering goods and services to the population, and 2) the reliability and competence of government institutions in delivering service to constituents. To my knowledge, the key finding in this study with regard to social service provision–that it is a determinant of suicide terrorism specifically–is the first time the hypothesis put forward in Berman and Laitin (2008) has been supported by econometric evidence.

As a word of caution, it is important to emphasize the limitations of the club model in explaining terrorism. It would be imprudent to infer from this research that the two commitment inducement technologies discussed in this paper, sacrifice and stigma and social service provision, respectively, necessarily reflect true *causes* of terrorism. What we can say, however, is that, at the very least, these technologies *matter* to terrorism, by influencing the level of terrorist activity.

Terrorism is a complex phenomenon, and so I offer only a couple modest counterterrorism policy advice based on my findings. While easier said than done, an important weapon in a state's arsenal to combat these organizations is to promote defection by directly competing with them in the supply of such public goods as education, health care, and welfare (Berman and Laitin (2008)). By improving the efficiency of, or in many cases creating, local and national markets in failed states could reduce suicide terrorism in particular by making terrorist group members less dependent on the club's provision of public goods, thus increasing to a sufficiently high level the risk of defection so that it is no longer incentive-compatible for clubs to send operatives on suicide missions. In regions and states with weak or nonexistent market opportunities (e.g., Gaza, south Lebanon, Yemen, Syria, Somalia, Afghanistan), a public goods-providing terror group may be the only game in town, making defection unprofitable even in high-stakes operations, since many groups incentivize loyalty through payments to imprisoned terrorists, and payments to the families of killed terrorists. [13] Berman and Laitin note many historical examples of terrorist groups being weakened through secular economic development. In the 1950s, feel threatened by the growing influence of the Muslim Brotherhood in his country, autocratic Egyptian president Gamal Abdel Nasser combated the Brotherhood not only by imprisoning its leadership, but also by nationalizing

---

[13]For example, the so-called "Palestinian Authority Martyrs Fund," operated by the Palestinian Authority (PA) in the West Bank, paid out $153.4 million in salaries to imprisoned and released terrorists in 2017, and an additional $191.8 to the families of terrorists killed in terror and non-terror related incidents. In total, 2017 expenditures by the PA supporting the salaries of terrorists and their families was about $345 million. This constitutes 7 percent of the PA's total budget, and about 50 percent of foreign aid received by the PA. In contrast, the budget for actual (non-terror related) welfare by the PA in 2017, used to pay for families under the poverty line, tuition exemptions for poor children, medical insurance, and food supplies, was $211.6 million, which is 39 percent less than the budget supporting terrorism (Kuperwasser (2017)).

its sophisticated social service provision network, leading to a decline in Islamist terrorism in Egypt for over two decades. [14]

Policies aimed at reducing the efficacy of sacrifice and stigma tools, used by terror groups to screen out low-commitment members and mitigate defection, is another recommendation inferred from my analysis, although it is unclear what sorts of geopolitical "policies" could actually succeed in this task. In many countries rife with terrorism, identity-based conflicts are entrenched in the society and often date back hundreds or thousands of years, and there is no panacea to diminishing religious or ethnic hatreds and promoting tolerance, factors which the club model predicts would be necessary to decreasing the marginal productivities of sacrifice and stigma devices. As the world has come to realize in the years following the overthrow of Saddam Hussein in Iraq and the removal of the Taliban from government power in Afghanistan, forced democratization or Westernization is generally an ineffective, and sometimes counterproductive, way to truly liberalize a country. Rather, abatement of tribal, ethnic, religious, or racial hostilities in a society, and government-sponsored persecution of minorities, can really only come about when there is sufficient demand for it at the grassroots level, as was the case in the American civil rights movement.

A promising field of future research may be to consider whether the effects of S&S and SSP are heterogeneous by the target of terrorism, domestic or transnational. Future research could also empirically test the club good model at the *organizational* level, rather than at the state level like in this study. For example, adding the S&S/SSP proxies used in this paper to the dataset employed by Ray (2018), which tracks the characteristics over time of over 300 militant organizations, may generate a more direct test of the club model. Also, this would have the potential to inform whether or not the relationship between S&S/SSP is heterogeneous by group ideology type; while Berman and Laitin (2008) restrict their analysis to the use of S&S/SSP by radical religious sects, it is certainly the case that secular groups, who also face defection risks, employ commitment devices. Finally, controlling for other, potentially confounding, cultural, political, religious, and economic factors, may help to offer more robust evidence in support of the

[14]The Palestine Liberation Organization (PLO) offers another interesting example. To give the historical context, from 1970-1971, the PLO was embroiled in the so-called "Black September" conflict in Jordan, pitting Palestinian fighters against the Jordanian military. Following the seizure of the West Bank by Israel in 1967, the PLO set up military bases in Jordan, from which planning and carrying out attacks against Israel. This created friction between the PLO, which was unable to exert control over various Palestinian splinter groups acting in its name, and the Jordanian government, which saw its authority being undermined by the militants who essentially formed a state within a state. In 1970 there were calls by Palestinian groups in Jordan to overthrow the Hashemite government of King Hussein, leading to military conflict between the two sides. Following ceasefire negotiations between King Hussein and Yasser Arafat in 1970, a new Palestinian terrorist faction, the Black September Organization, was established under the umbrella of the PLO to carry out further operations against the Jordanians as well as against Israeli and other international targets. Within a couple years this faction became a liability to the PLO, its parent organization. In 1973 the PLO successfully disbanded the Black September Organization, buying off the members to lay down arms and move to Beirut, where they were bequeathed a package of social services, including secular employment, housing, and wives (Berman and Laitin (2008)).

club framework.

Bibliography

Abadie, Alberto, "Poverty, political freedom, and the roots of terrorism," *American Economic Review*, 2006, *96* (2), 50–56.

Abu-Amr, Ziad, "Hamas: a historical and political background," *Journal of Palestine Studies*, 1993, *22* (4), 5–19.

Acosta, Benjamin, "From bombs to ballots: When militant organizations transition to political parties," *The Journal of Politics*, 2014, *76* (3), 666–683.

__ , "Dying for survival: Why militant organizations continue to conduct suicide attacks," *Journal of Peace Research*, 2016, *53* (2), 180–196.

__ , "Revolutionary and Militant Organizations Dataset (REMOD) 1980-2013 Codebook," 2016.

__ **and Steven J Childs**, "Illuminating the global suicide-attack network," *Studies in Conflict & Terrorism*, 2013, *36* (1), 49–76.

Ahronheim, Anna, "IDF Annual Report: 1,000 Rockets Fired at Israel from Gaza in 2018," *The Jerusalem Post*, Dec 2018.

Al-'Ubaydi, Muhammad, Nelly Lahoud, Daniel Milton, and Bryan Price, "The Group That Calls Itself a State: Understanding the Evolution and Challenges of the Islamic State," *Combating Terrorism Centre at West Point*, 2014, p. 102.

Alexander, Yonah and Michael S. Swetnam, *Usama bin Laden's al-Qaida: Profile of a Terrorist Network*, Ardsley, New York: Transnational Publishers, 2001.

Anderton, Charles H, John R Carter, and Others, "Principles of conflict economics," *Cambridge UP*, 2009.

Asal, Victor and R. Karl Rethemeyer, "The nature of the beast: Organizational structures and the lethality of terrorist attacks," *Journal of Politics*, 2008, *70* (2), 437–449.

Asal, Victor H., Gary A. Ackerman, and R. Karl Rethemeyer, "Connections can be toxic: Terrorist organizational factors and the pursuit of CBRN weapons," *Studies in Conflict and Terrorism*, 2012, *35* (3), 229–254.

__ **, Hyun Hee Park, R. Karl Rethemeyer, and Gary Ackerman**, "With Friends Like These: Why Terrorist Organizations Ally," *International Public Management Journal*, 2011, *19* (1), 1–30.

Azam, Jean-Paul and Alexandra Delacroix, "Aid and the delegated fight against terrorism," *Review of Development Economics*, 2006, *10* (2), 330–344.

__ **and Véronique Thelen**, "The roles of foreign aid and education in the war on terror," *Public Choice*, 2008, *135* (3-4), 375–397.

Barrett, Richard, *The Islamic State*, Soufan Group, 2014.

Basuchoudhary, Atin and William F Shughart, "On ethnic conflict and the origins of transnational terrorism," *Defence and Peace Economics*, 2010, *21* (1), 65–87.

Benner, Katie, "Bin Laden's gone, but what about al Qaeda's finances?," may 2011.

Berman, Eli, "Sect, subsidy, and sacrifice: an economist's view of ultra-orthodox Jews," *The Quarterly Journal of Economics*, 2000, (115.3).

— , *Radical, Religious and Violent* 2009.

— **and David D Laitin**, "Religion, terrorism and public goods: Testing the club model," *Journal of public Economics*, 2008, *92* (10), 1942–1967.

Blomberg, S Brock and Gregory D Hess, "The Lexus and the olive branch: Globalization, democratization and terrorism," 2005.

Borgatti, S.P., M.G. Everett, and L.C. Freeman, "Ucinet for Windows: Software for Social Network Analysis.," 2002.

Box-Steffensmeier, Janet M and Bradford S. Jones, *Event history modeling: A guide for social scientists*, New York: Cambridge University Press., 2004.

Bruno, Greg, "Inside the Kurdistan Workers Party (PKK)," *CFR. org, October*, 2007, *19*.

Byman, Daniel, *Deadly Connections: States That Sponsor Terrorism*, Cambridge: Cambridge University Press, 2005.

Cameron, A. Colin and Pravin K. Trivedi, "Count Panel Data," *The Oxford Handbook of Panel Data*, 2013.

Carter, David B, "A Blessing or a Curse? State Support for Terrorist Groups," *International Organization*, 2012, *66* (1), 129–151.

Center for Systemic Peace, "State Fragility Index and Matrix 2016," 2016.

Cohen, David S, "Remarks of Under Secretary for Terrorism and Financial Intelligence David S. Cohen," oct 2014.

Database, Global Terrorism, "National Consortium for the Study of Terrorism and Responses to Terrorism (START)," 2016.

de Mesquita, Ethan Bueno, "Conciliation, commitment and counterterrorism: A formal model," *International Organization*, 2005, *59* (1), 145–176.

Ekelund Jr, Robert B., Robert F. Hébert, and Robert D. Tollison, *The market for Christianity* 2006.

Enders, Walter and Paan Jindapon, "Network externalities and the structure of terror networks," *Journal of Conflict Resolution*, 2010, *54* (2), 262–280.

Erlanger, Steven, "Hamas Routs Ruling Faction, Casting Pall on Peace Process," *The New York Times*, Jan 2006.

Eubank, William and Leonard Weinberg, "Terrorism and democracy: Perpetrators and victims," *Terrorism and political violence*, 2001, *13* (1), 155–164.

FATF Report, "Financing of the Terrorist Organisation Islamic State in Iraq and the Levant (ISIL)," Technical Report February, Financial Action Task Force 2015.

Force, Financial Action Task, "Financing of the Terrorist Organization Islamic State in Iraq and the Levant (ISIL)," *FATF, Paris*, 2015.

Freytag, Andreas, Jens J Krüger, Daniel Meierrieks, and Friedrich Schneider, "The origins of terrorism: Cross-country estimates of socio-economic determinants of terrorism," *European Journal of Political Economy*, 2011, *27*, S5–S16.

Fund for Peace, "Fragile states index 2015," 2015.

Gaibulloev, Khusrav, James A Piazza, and Todd Sandler, "Regime types and terrorism," *International organization*, 2017, *71* (3), 491–522.

Gandel, Stephen, "Will Osama's Death Bankrupt al-Qaeda?," may 2011.

Greene, William, "Fixed effects and bias due to the incidental parameters problem in the tobit model," *Econometric Reviews*, 2004, *23* (2), 125–147.

Gunaratna, Rohan, *Inside Al-Qaeda: Global Network of Terror*, New York: Berkley Books, 2003.

Hamzeh, Ahmad Nizar, *In the path of Hizbullah*, Syracuse University Press, 2004.

Hoffman, Bruce, "The Changing Face of Al Qaeda and the Global War on Terrorism," *Studies in Conflict and Terrorism*, 2004, *27* (6), 549–560.

— , *Inside Terrorism*, revised an ed., New York: Columbia University Press, 2006.

Horowitz, Michael C, "Nonstate Actors and the Diffusion of Innovations : The Case of Suicide Terrorism," *International Organization*, 2010, pp. 33–64.

Horowitz, Michael C., "The Rise and Spread of Suicide Bombing," *Ssrn*, 2015.

— **and Philip B.K. Potter**, "Allying to Kill: Terrorist Intergroup Cooperation and the Consequences for Lethality," *Journal of Conflict Resolution*, 2014, *58* (2).

Huntington, Samuel P, "The clash of civilizations and the remaking of world order," 1996.

Iannaccone, Laurence R, "Sacrifice and stigma: reducing free-riding in cults, communes, and other collectives," *Journal of political economy*, 1992, *100* (2), 271–291.

— , "Why Strict Churches Are Strong Author (s): Laurence R . Iannaccone Source : American Journal of Sociology , Vol . 99 , No . 5 (Mar ., 1994), pp . 1180-1211 Published by : The University of Chicago Press Stable URL : https://www.jstor.org/stable/278114," 1994, *99* (5), 1180–1211.

— **and Eli Berman**, "Religious extremism: The good, the bad, and the deadly," *Public choice*, 2005, pp. 109–129.

Israel Ministry of Foreign Affairs, "The Covenant of the Islamic Resistance Movement - Hamas," August 18, 1988.

— , "HAMAS-The Islamic Resistance Movement," January 1, 1993.

— , "Anti-Israeli Terrorism in 2007 and its Trends in 2008: Overview," June 2008.

— , "The Hamas terror war against Israel," 2013.

— , "Victims of Palestinian Violence and Terrorism since September 2000," 2014.

Jewish Virtual Library, "Terrorism Against Israel: Palestinian Suicide Attacks," 2008.

Jones, Seth G. and Martin C. Libicki, "How Terrorist Groups End: Lessons for Countering al-Qaida," Technical Report, RAND Corporation, Santa Monica, California 2008.

Jones, Seth G, James Dobbins, Daniel Byman, Christopher S Chivvis, Ben Connable, Jeffrey Martini, Eric Robinson, and Nathan Chandler, *Rolling Back the Islamic State*, Santa Monica, CA: RAND Corporation, 2017.

Joseph, J, *Turkey and the European Union: internal dynamics and external challenges*, Springer, 2006.

Karmon, Ely, *Coalitions Between Terrorist Organizations: Revolutionaries, Nationalists and Islamists*, Boston: Brill Academic Pub, 2005.

Karsh, Efraim, *The Oslo Disaster*, Begin-Sadat Center for Strategic Studies, 2016.

Khoury, Jack and Noa Landau, "Israel Accuses Hezbollah of Helping Hamas Establish Military Presence in Lebanon," jun 2018.

Krieger, Tim and Daniel Meierrieks, "What causes terrorism?," *Public Choice*, 2011, *147* (1-2), 3–27.

Krueger, Alan B, *What makes a terrorist?: Economics and the roots of terrorism: Lionel Robbins Lectures*, Princeton University Press, 2007.

Krueger, Alan B., *What Makes a Terrorist: Economics and the Roots of Terrorism*, Princeton University Press, 2008.

Krueger, Alan B and David D Laitin, "Kto kogo?: A cross-country study of the origins and targets of terrorism," *Terrorism, economic development, and political openness*, 2008, pp. 148–173.

__ **and Jitka Maleckova**, "Education, poverty, political violence and terrorism: is there a causal connection?," Technical Report, National Bureau of Economic Research 2002.

Kuperwasser, Yossi, "Palestinian Payments to Incarcerated Terrorists and Martyrs' Families Rise in 2017," jul 2017.

Kurrild-Klitgaard, Peter, Mogens K Justesen, and Robert Klemmensen, "The political economy of freedom, democracy and transnational terrorism," *Public Choice*, 2006, *128* (1-2), 289–315.

Kushner, Harvey W., *Encyclopedia of Terrorism*, Thousand Oaks, California: Sage Publications, 2003.

Kydd, Andrew and Barbara F Walter, "Sabotaging the peace: The politics of extremist violence," *International Organization*, 2002, *56* (2), 263–296.

LaFree, Gary, Laura Dugan, Min Xie, and Piyusha Singh, "Spatial and temporal patterns of terrorist attacks by ETA 1970 to 2007," *Journal of Quantitative Criminology*, 2012, *28* (1), 7–29.

Lai, Brian, ""Draining the Swamp": An Empirical Examination of the Production of International Terrorism, 1968-1998," *Conflict Management and Peace Science*, 2007, *24* (4), 297–310.

Laub, Zachary, "The Islamic State," aug 2016.

Letamendia, Francisco, *Historia del nacionalismo vasco y de ETA*, R & B Ediciones, 1994.

Martin, Gus, *Understanding terrorism: Challenges, perspectives, and issues*, SAGE publications, 2017.

Memorial Institute for the Prevention of Terrorism (MIPT), "Terrorist Organization Profiles (TOPS)," 2008.

Ministerio del Interior, Gobierno de España, "Victims of ETA," 2010.

Moghaddam, Assaf, "Motives for Martyrdom of Suicide Attacks," *Critique*, 2009, *33* (3), 46–78.

Morales, Kendrick, Prosper Raynold, and Jing Li, "The empirical relationship between commitment enhancement devices and terrorism," *Applied Economics*, 2018, *50* (50), 5366–5380.

National Christian Leadership Conference for Israel, ""Stats Show Anti-Terrorism Fence Highly Effective"," 2008.

National Consortium for the Study of Terrorism and Responses to Terrorism (START), "Global Terrorism Database (Data file)," 2018.

Nozick, Robert, *Anarchy, state, and utopia*, Basic books, 2013.

Palestine and Anglo-American Committee of Inquiry on Jewish Problems in Palestine, *A survey of Palestine*, Vol. 1, government printer, 1946.

Pape, Robert Anthony, *Dying to win: The strategic logic of suicide terrorism*, Random House Incorporated, 2006.

Pedahzur, Ami, *Suicide terrorism*, Polity, 2005.

___ , **Leonard Weinberg, and Arie Perliger**, *Political parties and terrorist groups*, Routledge, 2008.

Perliger, Arie and Leonard Weinberg, "Jewish self-defence and terrorist groups prior to the establishment of the state of Israel: Roots and traditions," *Totalitarian Movements and Political Religions*, 2003, *4* (3), 91–118.

Pew Research Center, "Rising Restrictions on Religion," 2011.

Phillips, Brian J., "Terrorist group cooperation and longevity," *International Studies Quarterly*, 2014, *58* (2), 336–347.

___ , "Terrorist Group Rivalries and Alliances: Testing Competing Explanations," *Studies in Conflict and Terrorism*, 2018, (January), 1–23.

Phillips, David L, *From bullets to ballots: violent Muslim movements in transition*, Routledge, 2017.

Piazza, James A., "A supply-side view of suicide terrorism: A cross-national study," *Journal of Politics*, 2008, *70* (1), 28–39.

Piazza, James A, "Incubators of terror: Do failed and failing states promote transnational terrorism?," *International Studies Quarterly*, 2008, *52* (3), 469–488.

Piven, Ben, "Who, what and where is ISIL? Explaining the Islamic State," sep 2014.

Plümper, Thomas and Eric Neumayer, "The friend of my enemy is my enemy: International alliances and international terrorism," *European Journal of Political Research*, 2010, *49* (1), 75–96.

Rabil, Robert G, "Hezbollah, The Islamic Association and Lebanon's Confessional System," *The Levantine Review*, 2012, *1* (1), 49–67.

Radu, Michael and Vladimir Tismaneanu, *Latin American Revolutionaries: Groups, Goals, Methods*, New York: Pergamon-Brassey's International Defense Publishers, 1990.

Ranstorp, Magnus, "The strategy and tactics of Hizballah's current 'Lebanonization process'," *Mediterranean Politics*, 1998, *3* (1), 103–134.

Ray, Alex, "The Role of Ideology in Terrorist Alliance Networks," *Doctoral dissertation*, 2018.

— , "An Empirical Analysis of the Club Good Model of Terrorism," *Doctoral dissertation*, 2019.

Raynold, Prosper, "Fellowship, social network externalities, and management of religious risk," *Rationality and Society*, 2013, *25* (2), 229–260.

— , "An Economic Theory of Violent Religious Extremism An Economic Theory of Violent Religious Extremism Prosper Raynold Associate Professor of Economics Department of Economics," 2018, (June).

Rees, Matt, "How Hamas-Hezbollah Rivalry Is Terrorizing Israel," apr 2001.

Reuters, "Basque separatist group ETA says it has 'completely dissolved'," 2018.

Rollins, John, "Al Qaeda and Affiliates: Historical Perspective, Global Presence, and Implications for U.S. Policy," jan 2011.

Sageman, Marc, *Understanding terror networks*, University of Pennsylvania Press, 2004.

Salehyan, Idean, Kristian Skrede Gleditsch, and David E. Cunningham, "Explaining External Support for Insurgent Groups," *International Organization*, 2011, *65* (4), 709–744.

Sánchez-Cuenca, Ignacio, "The persistence of nationalist terrorism: the case of ETA," *Violent non-state actors in contemporary world politics. Columbia University Press, New York*, 2009.

Shitrit, Lihi Ben, *Righteous transgressions: women's activism on the Israeli and Palestinian religious right*, Vol. 61, Princeton University Press, 2015.

START, "Kurdistan Workers' Party (PKK)," 2015.

Tezcür, Güneş Murat, "Prospects for Resolution of the Kurdish Question: A Realist Perspective.," *Insight Turkey*, 2013, *15* (2).

The Institute for the Study of Violent Groups (ISVG), "Violent Extremism Knowledge Base," 2013.

The National Counterterrorism Center (NCTC), "Terrorist Groups," 2013.

— , "Terrorist Profiles," 2013.

TOI, "Israel says Hamas working with Hezbollah to train 'thousands' in Lebanon," jun 2018.

Transparency International, *Transparency International corruption perceptions index*, Transparency International, 1995.

Unzueta, Patxo, *Los nietos de la ira: nacionalismo y violencia en el País Vasco*, El País, 1988.

U.S. Department of State, "Country Reports on Terrorism 2004," 2005.

van Um, Eric, *Evaluating the Political Rationality of Terrorist Groups*, Springer, 2015.

Vice President's Task Force on Combating Terrorism, "Terrorist Group Profiles," Technical Report, Superintendent of Documents, U.S. Government Printing Office, Washington DC 1988.

Zimmerman, Katherine, "The al Qaeda Network," Technical Report September, American Enterprise Institute 2013.

Table 2.1: Summary Statistics for Country j in Year t, (2007-2013)

Variable	Definition	Obs	Mean	SD	Min	Max
Terrorism						
Total terrorist attacks	All attacks in Global Terrorism Database	990	43.66	191.36	0	2852
Total suicide attacks	All suicide attacks in Global Terrorism Database	990	2.23	14.89	0	273
Sacrifice and Stigma						
Government restrictions on religion	Pew Forum's Index of Government Restrictions involving Religion	990	3.35	2.29	0	9.10
Religious hostility in society	Pew Forum's Index of Social Hostilities involving Religion	990	2.89	2.49	0	10
Tension between groups	Fragile State Index's Group Grievance Index	961	6.30	2.07	1	10
Social Service Provision						
Actual and perceived structural inequality	Fragile State Index's Uneven Economic Development Index	961	6.74	1.86	1.60	9.70
Population displacement	Fragile State Index's Refugees and IDPs Index	961	5.36	2.37	0.90	10
Corruption	Transparency International's Corruption Perceptions Index	980	3.97	2.12	0.80	9.50
Regime Characteristics						
Regime effectiveness	State Fragility Index's Effectiveness Score	947	4.28	3.68	0	13
Regime legitimacy	State Fragility Index's Legitimacy Score	947	4.56	3.15	0	12
State Fragility Index	SFI Effectiveness Score + Legitimacy Score	947	8.84	6.43	0	25
Regime type (autocracy to democracy)	Polity IV Project Polity Score	920	14.02	6.03	0	20
Years since most recent regime change	Polity IV Project Regime Durability Score	938	27.17	33.07	0	204
Economic and Demographic Variables						
GDP per capita (log)	GDP per capita	983	8.44	1.54	5.14	11.54
Population (log)	Country population	983	16.30	1.57	12.61	21.03
Country Area (log)	Country area in million square kilometers	966	12.19	1.90	5.70	16.61

Table 2.2: Mean Values for Sacrifice and Stigma/Social Service Provision Proxies, 2007-2013

Country	Government Restrictions	Social Hostilities	Group Grievance	Economic Inequality	Refugees & IDP	Corruption
Afghanistan	7.03	8.20	9.40	8.14	9.06	1.30
Albania	1.40	0.20	5.16	5.59	2.83	3.19
Algeria	6.73	5.33	7.69	6.93	6.61	3.11
Angola	3.91	2.60	6.19	9.07	7.00	2.06
Argentina	1.90	1.11	4.51	5.71	2.01	3.07
Armenia	4.84	3.89	5.63	6.10	7.09	2.97
Australia	1.34	2.01	3.49	4.03	2.40	8.59
Austria	3.16	2.03	3.79	4.57	2.31	7.66
Azerbaijan	6.23	3.13	7.43	6.96	7.86	2.37
Bahamas	2.40	0.11	4.79	6.49	3.17	7.24
Bahrain	5.16	3.51	6.61	5.61	2.91	5.06
Bangladesh	5.20	7.71	9.19	8.59	6.73	2.41
Belarus	6.33	1.80	6.66	6.66	3.89	2.49
Belgium	3.91	1.99	4.37	4.36	1.76	7.30
Belize	1.06	0.00	4.77	7.13	5.17	2.91
Benin	0.36	0.81	3.91	7.27	6.24	3.10
Bhutan	4.57	1.14	7.47	8.30	7.17	5.60
Bolivia	1.09	0.40	7.39	8.71	4.34	3.00
Bosnia-Herzegovina	1.94	3.26	8.26	6.90	7.20	3.47
Brazil	0.64	2.49	6.20	8.64	3.61	3.81
Bulgaria	4.53	3.47	4.41	5.83	3.70	3.80
Burkina Faso	0.89	1.97	5.83	8.67	6.13	3.39
Burundi	0.60	1.41	7.57	8.29	8.57	1.99
Cambodia	2.56	0.86	7.17	7.13	5.69	2.03
Cameroon	1.23	0.96	7.41	8.47	7.23	2.39
Canada	1.50	1.36	2.93	4.37	2.36	8.60
Central African Republic	4.10	4.09	8.69	8.93	9.23	2.20
Chad	4.40	2.30	9.44	9.01	9.39	1.79
Chile	1.37	1.33	3.60	4.79	2.33	7.04
China	8.20	2.73	7.97	8.73	5.97	3.67
Colombia	2.03	3.19	7.34	8.39	8.90	3.63
Croatia	2.03	2.10	5.53	5.16	5.86	4.30
Cuba	4.74	0.83	5.24	6.56	5.24	4.31
Cyprus	2.14	2.99	7.70	7.39	4.41	6.26
Czech Republic	1.41	1.64	3.50	3.90	2.77	4.86
DR Congo	1.61	3.11	8.87	9.11	9.51	1.97

Country	Government Restrictions	Social Hostilities	Group Grievance	Economic Inequality	Refugees & IDP	Corruption
Denmark	3.06	2.43	2.96	1.87	1.91	9.26
Dominican Republic	0.93	0.00	6.00	7.66	5.49	2.96
East Timor	0.74	3.16	7.10	6.83	8.33	2.60
Ecuador	0.90	0.26	6.70	7.80	6.07	2.60
Egypt	8.36	7.39	8.19	7.50	6.53	2.99
Equatorial Guinea	2.24	0.00	6.77	9.00	2.47	1.87
Eritrea	7.40	0.49	5.93	6.33	7.10	2.51
Estonia	1.20	0.46	5.21	4.89	4.14	6.54
Ethiopia	4.01	5.04	8.21	8.31	8.11	2.81
Finland	1.37	0.71	1.27	1.57	1.73	9.11
France	4.07	4.44	5.80	4.99	2.90	7.01
Georgia	2.70	4.33	8.13	6.91	7.41	4.20
Germany	3.59	4.13	4.69	4.69	4.10	7.90
Greece	4.86	4.46	4.36	4.66	2.43	3.94
Guatemala	1.20	0.83	6.97	7.94	5.84	3.06
Guinea	2.11	2.16	8.06	8.49	7.61	2.03
Guinea-Bissau	0.56	0.73	5.60	8.30	6.97	2.10
Guyana	1.09	0.00	5.91	7.54	3.67	2.64
Haiti	1.30	1.51	7.41	8.49	6.53	1.80
Honduras	1.86	0.44	5.33	8.36	3.36	2.57
Hong Kong	2.03	0.74	.	.	.	8.09
Hungary	1.24	2.07	3.49	5.71	3.13	5.10
Iceland	2.60	0.99	1.00	2.27	1.17	8.51
India	5.21	9.09	7.63	8.63	4.60	3.41
Indonesia	7.74	7.97	6.50	7.66	6.70	2.84
Iran	8.27	5.51	8.00	7.10	8.13	2.40
Iraq	5.49	8.77	9.64	8.64	8.84	1.57
Ireland	1.06	0.90	1.21	2.79	1.60	7.54
Israel	5.37	8.24	9.39	7.53	7.73	6.03
Italy	2.34	3.34	4.54	4.24	3.57	4.37
Ivory Coast	1.94	3.01	9.13	7.93	8.46	2.31
Jamaica	1.46	0.27	4.27	6.39	2.89	3.37
Japan	0.94	2.09	3.79	2.31	1.90	7.59
Jordan	5.67	4.59	6.79	7.14	7.59	4.76
Kazakhstan	5.57	1.93	5.76	6.01	3.66	2.57
Kenya	3.97	5.97	8.37	8.39	8.54	2.30
Kosovo	1.87	4.16	.	.	.	3.10

Country	Government Restrictions	Social Hostilities	Group Grievance	Economic Inequality	Refugees & IDP	Corruption
Kuwait	5.23	2.76	4.79	5.89	4.09	4.36
Kyrgyzstan	5.41	4.37	7.61	7.73	5.70	2.10
Laos	5.77	1.74	6.57	5.83	5.73	2.13
Latvia	2.46	0.90	4.83	5.89	4.31	4.71
Lebanon	2.97	5.27	8.89	6.94	8.67	2.76
Lesotho	0.51	0.06	5.13	5.94	4.67	3.74
Liberia	1.23	2.24	6.39	8.16	8.54	3.14
Libya	5.74	2.91	6.17	7.03	4.31	2.20
Macedonia	2.20	2.21	7.49	6.96	4.74	3.81
Madagascar	2.70	0.67	5.21	7.54	4.09	3.03
Malaysia	7.23	2.44	6.20	6.63	4.74	4.76
Maldives	7.59	3.51	4.99	4.91	6.17	2.63
Mali	1.20	2.17	6.37	6.71	5.23	2.90
Mauritania	6.24	1.20	7.81	6.73	6.66	2.67
Mexico	3.83	4.53	5.94	7.91	4.11	3.33
Moldova	4.59	3.77	6.79	6.73	4.57	3.14
Montenegro	1.27	2.69	6.33	4.14	4.24	3.83
Morocco	5.87	2.00	6.67	7.41	6.64	3.50
Mozambique	1.27	0.90	4.77	7.49	3.43	2.77
Myanmar	7.56	5.39	8.94	8.97	8.40	1.51
Nepal	3.69	5.64	8.97	8.84	6.76	2.53
Netherlands	1.29	1.83	4.53	3.14	3.06	8.74
New Zealand	0.47	1.11	3.17	3.94	1.31	9.29
Niger	2.06	1.61	8.27	7.60	6.60	2.87
Nigeria	4.54	7.54	9.60	9.17	5.84	2.49
Norway	2.00	2.11	1.87	2.00	1.73	8.56
Pakistan	6.73	9.17	9.44	8.44	8.84	2.51
Panama	0.96	0.00	4.61	7.51	3.47	3.46
Papua New Guinea	1.09	2.53	7.26	8.99	4.21	2.20
Paraguay	1.11	0.91	6.34	8.03	1.74	2.31
Peru	2.13	0.44	6.83	8.03	4.34	3.61
Philippines	1.10	3.40	7.43	7.23	6.23	2.74
Poland	1.56	2.24	3.43	4.61	3.07	5.20
Portugal	0.77	0.43	2.47	3.69	1.53	6.14
Republic of the Congo	0.69	0.23	6.39	8.09	7.70	2.14
Romania	4.30	4.47	5.69	5.76	3.24	3.90
Russia	6.86	6.71	7.64	7.71	5.43	2.39

Country	Government Restrictions	Social Hostilities	Group Grievance	Economic Inequality	Refugees & IDP	Corruption
Rwanda	3.39	0.13	8.47	7.36	7.24	4.10
Saudi Arabia	8.31	6.20	7.69	6.84	6.01	4.19
Senegal	1.13	1.16	6.03	7.06	6.04	3.36
Serbia	3.71	3.57	7.81	6.87	6.97	3.60
Somalia	5.67	8.07	9.40	7.94	9.81	1.03
South Africa	0.73	2.59	5.39	8.34	6.71	4.54
South Sudan	2.03	2.20	10.00	8.85	9.95	1.40
Spain	2.34	2.19	5.99	4.77	2.44	6.29
Sri Lanka	4.93	7.41	9.53	8.27	8.86	3.39
Sudan	6.09	6.69	9.96	9.13	9.79	1.50
Swaziland	1.97	1.64	3.90	6.47	4.33	3.49
Sweden	1.93	2.87	1.17	2.04	2.71	9.14
Switzerland	1.83	2.44	3.01	2.59	1.63	8.80
Syria	6.80	5.96	8.53	7.73	9.00	2.36
Taiwan	0.79	0.00	.	.	.	5.87
Tajikistan	6.29	2.09	6.77	6.93	5.94	2.14
Tanzania	3.23	4.44	6.21	6.57	7.11	3.04
Thailand	3.56	5.04	7.89	7.24	6.39	3.47
Trinidad and Tobago	0.91	0.81	4.81	7.17	3.24	3.59
Tunisia	5.63	3.54	5.71	6.81	3.57	4.16
Turkey	6.30	4.76	8.09	7.71	6.40	4.51
Uganda	3.11	3.64	8.14	8.34	8.79	2.61
Ukraine	3.39	3.11	6.66	6.16	3.16	2.46
United Arab Emirates	4.70	0.90	4.41	5.34	3.13	6.41
United Kingdom	2.74	4.67	4.46	4.30	3.11	7.74
United States	2.46	2.36	3.54	5.33	3.46	7.26
Uzbekistan	7.84	2.23	7.37	8.30	5.51	1.69
Venezuela	3.21	1.29	6.79	7.60	4.91	1.94
West Bank/Gaza Strip	3.63	7.54	9.39	7.53	7.73	6.03
Western Sahara	5.47	0.90	.	.	.	.
Yemen	6.01	7.21	8.16	8.54	8.06	2.19
Zimbabwe	3.30	1.79	8.90	9.27	8.67	2.11
Average (*N*=147)	3.47	3.07	6.43	6.80	5.51	3.87

Table 2.3: Effect of Sacrifice & Stigma/Social Service Provision on Terrorism

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS
Sacrifice and Stigma variables							
Government Restrictions Index	0.009						-0.061
	(0.147)						(0.138)
Social Hostilities Index		0.354***					0.336***
		(0.097)					(0.087)
Group Grievance			0.851***				0.816***
			(0.266)				(0.251)
Social Service Provision variables							
Corruption Perceptions Index				-0.326			-0.082
				(0.270)			(0.239)
Economic Inequality					0.056		-0.062
					(0.244)		(0.238)
Refugees/IDP						0.236	0.208
						(0.184)	(0.160)
Control Variables							
Population (log)	1.875	1.946	2.067*	1.890	1.722	1.536	1.990
	(1.295)	(1.254)	(1.209)	(1.258)	(1.365)	(1.284)	(1.244)
GDP pc (log)	-0.059	0.009	-0.012	0.000	-0.035	-0.061	0.041
	(0.385)	(0.369)	(0.367)	(0.385)	(0.383)	(0.384)	(0.344)
SFI Effectiveness Score	0.219*	0.188	0.195*	0.215*	0.219*	0.212*	0.159
	(0.123)	(0.114)	(0.109)	(0.120)	(0.124)	(0.123)	(0.102)
SFI Legitimacy Score	0.038	0.033	0.027	0.029	0.032	0.023	0.013
	(0.092)	(0.087)	(0.085)	(0.092)	(0.092)	(0.092)	(0.080)
N	933	933	926	931	926	926	926
R^2	0.859	0.864	0.866	0.860	0.860	0.860	0.871

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Robust standard errors in parentheses are clustered by terrorist group. Regressions include state and year fixed effects, respectively. The dependent variable is the natural logarithm of total terrorist attacks carried out in state j in year t. The standardized indexes for the Sacrifice and Stigma/Social Service Provision proxies are used.

Table 2.4: Effect of Sacrifice & Stigma/Social Service Provision on Suicide Terrorism

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS
Sacrifice and Stigma variables							
Government Restrictions Index	-0.014						-0.024
	(0.071)						(0.065)
Social Hostilities Index		0.138***					0.131***
		(0.052)					(0.049)
Group Grievance			0.323**				0.301**
			(0.149)				(0.139)
Social Service Provision variables							
Corruption Perceptions Index				-0.200*			-0.105
				(0.109)			(0.093)
Economic Inequality					-0.028		-0.109
					(0.110)		(0.114)
Refugees/IDP						0.206*	0.206*
						(0.117)	(0.111)
Control Variables							
Population (log)	0.732	0.756	0.834	0.747	0.777	0.500	0.791
	(0.746)	(0.705)	(0.744)	(0.727)	(0.779)	(0.688)	(0.709)
GDP pc (log)	-0.034	-0.008	-0.031	0.001	-0.035	-0.065	-0.006
	(0.232)	(0.231)	(0.230)	(0.230)	(0.235)	(0.229)	(0.225)
SFI Effectiveness Score	0.044	0.032	0.036	0.041	0.044	0.039	0.017
	(0.067)	(0.063)	(0.063)	(0.065)	(0.067)	(0.066)	(0.060)
SFI Legitimacy Score	-0.012	-0.014	-0.013	-0.017	-0.011	-0.020	-0.025
	(0.031)	(0.031)	(0.030)	(0.031)	(0.032)	(0.030)	(0.028)
N	933	933	926	931	926	926	926
R^2	0.826	0.830	0.831	0.827	0.826	0.828	0.837

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Robust standard errors in parentheses are clustered by terrorist group. Regressions include state and year fixed effects, respectively. The dependent variable is the natural logarithm of total suicide attacks carried out in state j in year t. The standardized indexes for the Sacrifice and Stigma/Social Service Provision proxies are used.

Table 2.5: Effect of Sacrifice & Stigma/Social Service Provision on Terrorism - Robustness Check

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS
Sacrifice and Stigma variables							
Government Restrictions Index	-0.083						-0.081
	(0.133)						(0.132)
L.Government Restrictions Index	0.076						0.033
	(0.146)						(0.136)
Social Hostilities Index		0.027					0.032
		(0.096)					(0.089)
L.Social Hostilities Index		0.254***					0.235***
		(0.080)					(0.069)
Group Grievance			0.703***				0.628***
			(0.208)				(0.199)
L.Group Grievance			0.314				0.428*
			(0.226)				(0.232)
Social Service Provision variables							
Corruption Perceptions Index				-0.267			-0.092
				(0.315)			(0.279)
L.Corruption Perceptions Index				0.080			0.189
				(0.279)			(0.254)
Economic Inequality					0.316		0.299
					(0.292)		(0.291)
L.Economic Inequality					-0.374		-0.412
					(0.325)		(0.311)
Refugees/IDP						0.295	0.271
						(0.277)	(0.262)
L.Refugees/IDP						-0.026	-0.025
						(0.186)	(0.188)
N	799	799	793	797	793	793	793
R^2	0.872	0.874	0.879	0.873	0.873	0.873	0.883

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Robust standard errors in parentheses are clustered by terrorist group. Regressions include state and year fixed effects, respectively. Control variables not shown. The dependent variable is the natural logarithm of total terrorist attacks carried out in state j in year t. The standardized indexes for the Sacrifice and Stigma/Social Service Provision proxies are used. All explanatory variables are lagged one year.

Table 2.6: Effect of Sacrifice & Stigma/Social Service Provision on Suicide Terrorism - Robustness Check

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS
Sacrifice and Stigma variables							
Government Restrictions Index	-0.065						-0.043
	(0.068)						(0.066)
L.Government Restrictions Index	0.189*						0.172*
	(0.096)						(0.090)
Social Hostilities Index		0.112*					0.100*
		(0.061)					(0.056)
L.Social Hostilities Index		0.123*					0.106*
		(0.066)					(0.057)
Group Grievance			0.452**				0.377**
			(0.187)				(0.157)
L.Group Grievance			-0.131				-0.064
			(0.158)				(0.146)
Social Service Provision variables							
Corruption Perceptions Index				-0.364**			-0.277**
				(0.163)			(0.135)
L.Corruption Perceptions Index				0.164			0.131
				(0.145)			(0.141)
Economic Inequality					0.222		0.182
					(0.156)		(0.156)
L.Economic Inequality					-0.285		-0.267
					(0.193)		(0.178)
Refugees/IDP						0.303*	0.270*
						(0.170)	(0.150)
L.Refugees/IDP						-0.127	-0.114
						(0.106)	(0.097)
N	799	799	793	797	793	793	793
R^2	0.832	0.834	0.834	0.831	0.829	0.831	0.846

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Robust standard errors in parentheses are clustered by terrorist group. Regressions include state and year fixed effects, respectively. Control variables not shown. The dependent variable is the natural logarithm of total suicide attacks carried out in state j in year t. The standardized indexes for the Sacrifice and Stigma/Social Service Provision proxies are used. All explanatory variables are lagged one year.
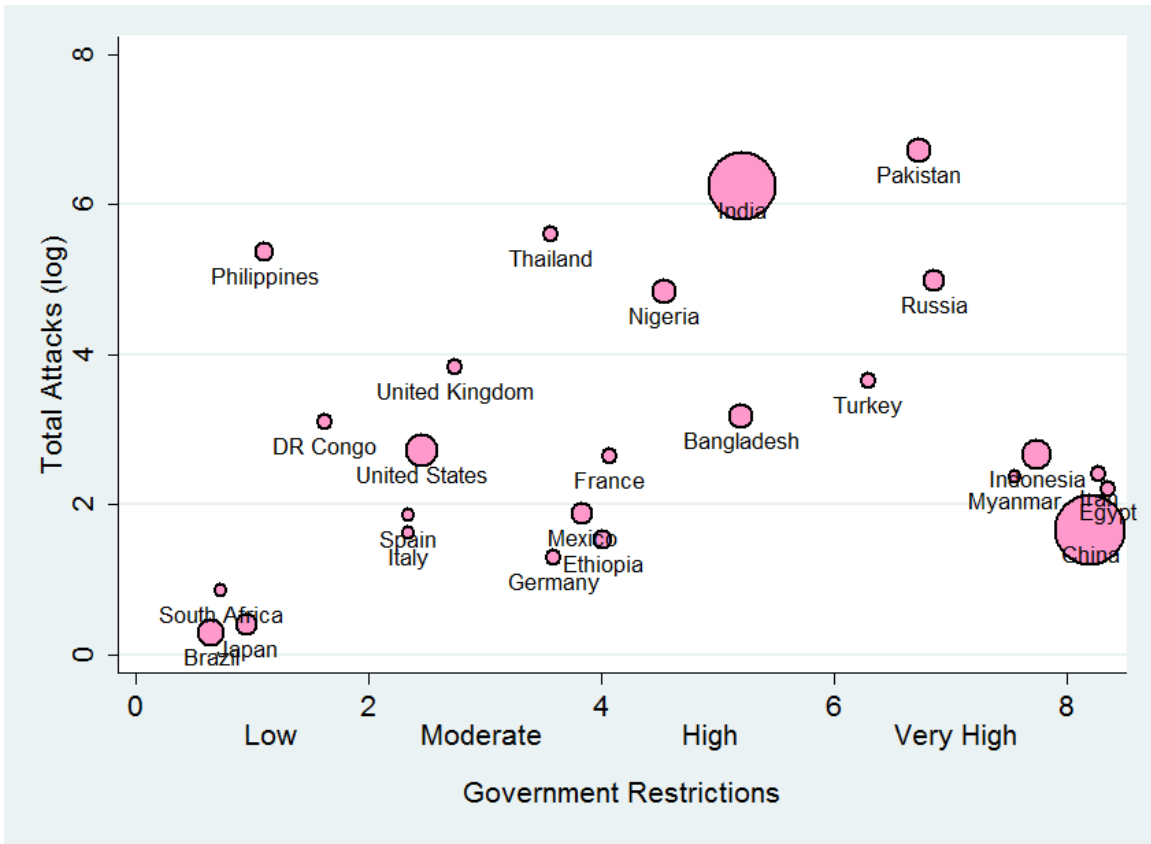
Figure 2.1: Scatter plot showing the cross-sectional relationship between Terror Attacks and Government Restrictions Index (Sacrifice and Stigma proxy 1) for 25 most populous states. Correlation for sample: 0.18. Correlation for all states: 0.363.

Figure 2.2: Scatter plot showing the cross-sectional relationship between Terror Attacks and Social Hostilities Index (Sacrifice and Stigma proxy 2) for 25 most populous states. Correlation for sample: 0.594. Correlation for all states: 0.621.
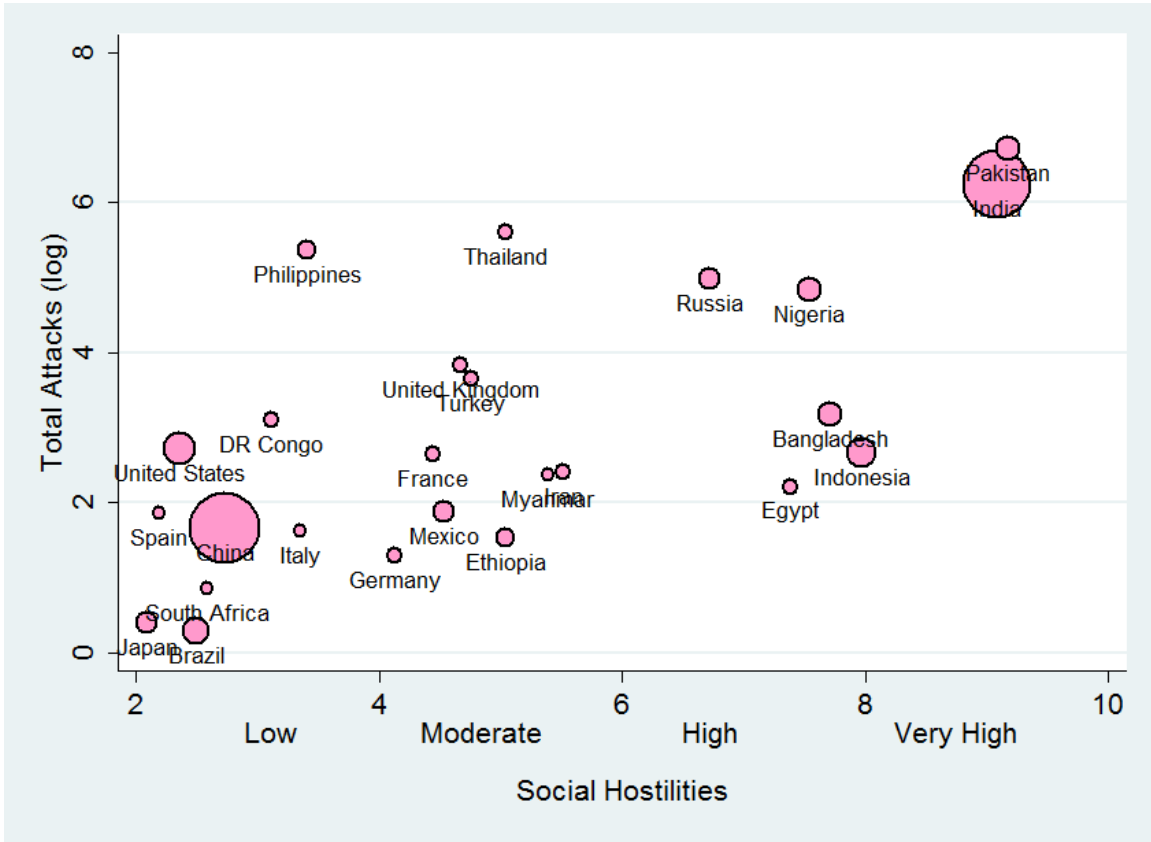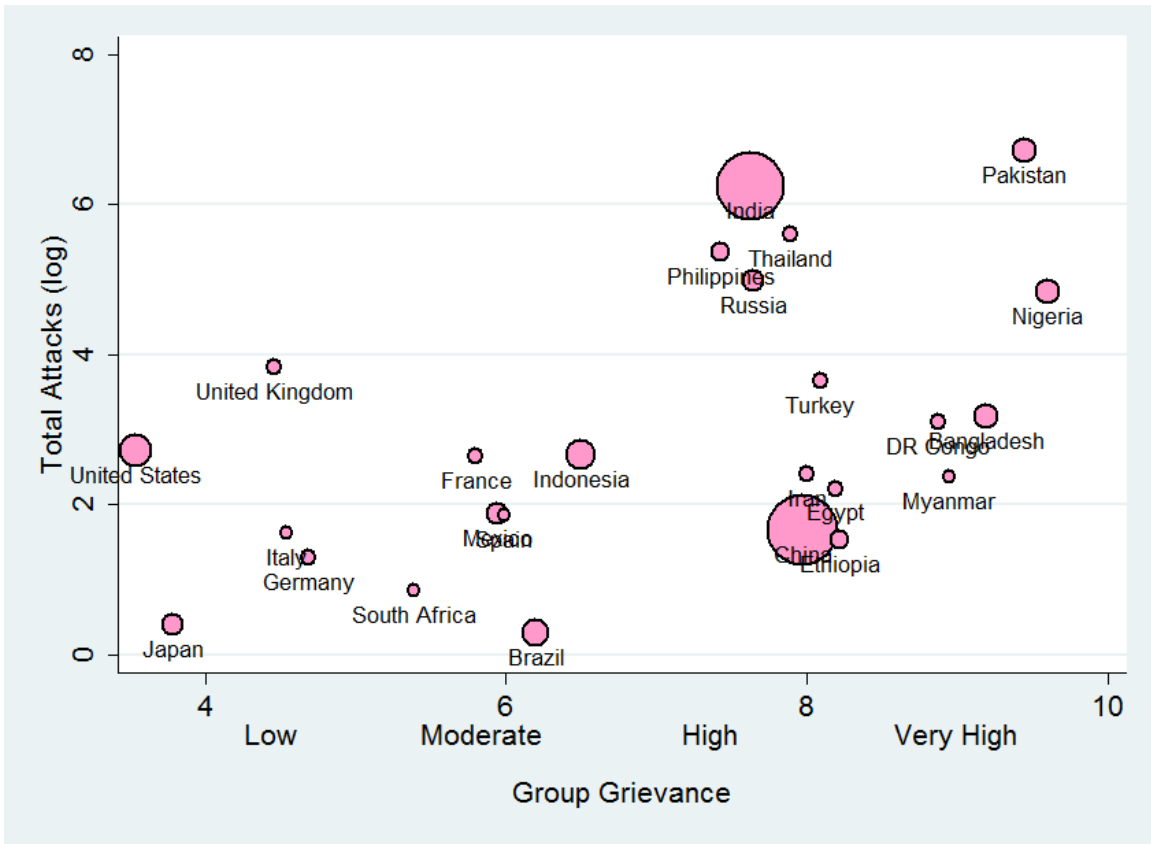
Figure 2.3: Scatter plot showing the cross-sectional relationship between Terror Attacks and Group Grievance (Sacrifice and Stigma proxy 3) for 25 most populous states. Correlation for sample: 0.395. Correlation for all states: 0.40.
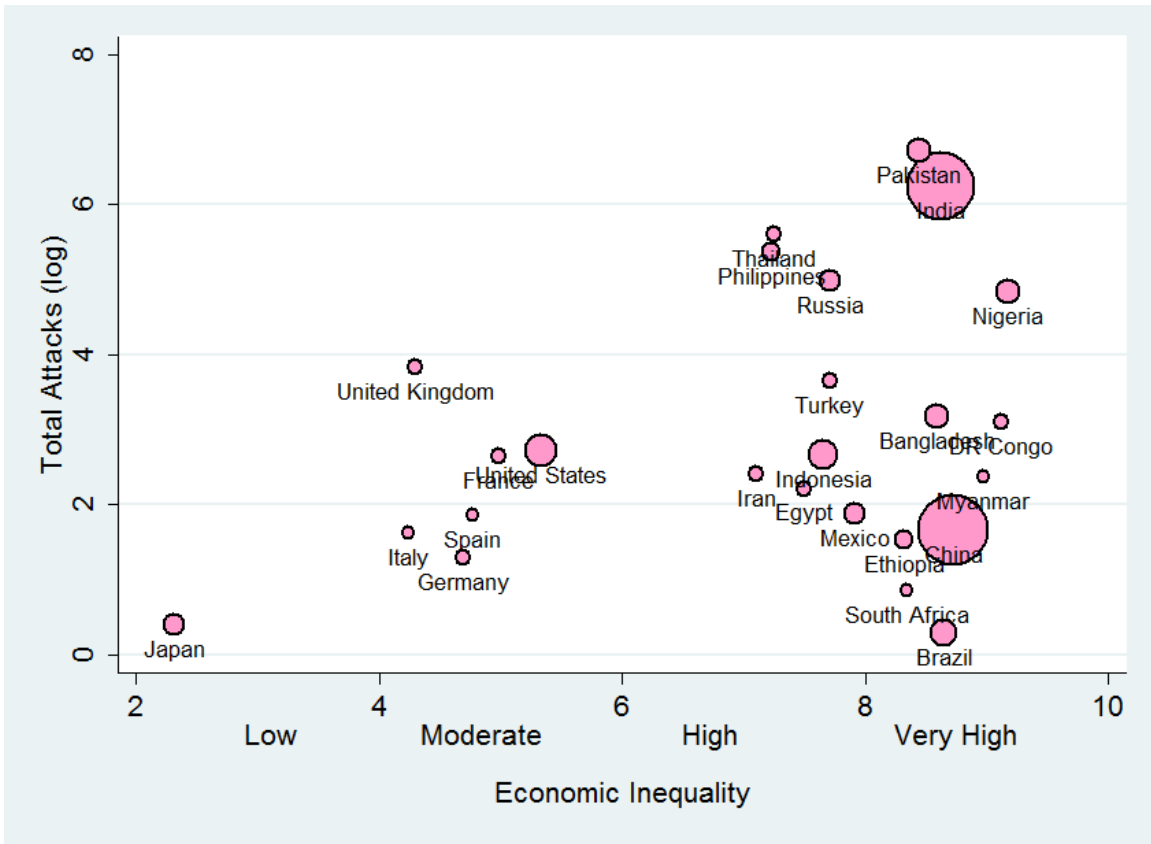
Figure 2.4: Scatter plot showing the cross-sectional relationship between Terror Attacks and Economic Inequality (Social Service Provision proxy 1) for 25 most populous states. Correlation for sample: 0.263. Correlation for all states: 0.244.

90
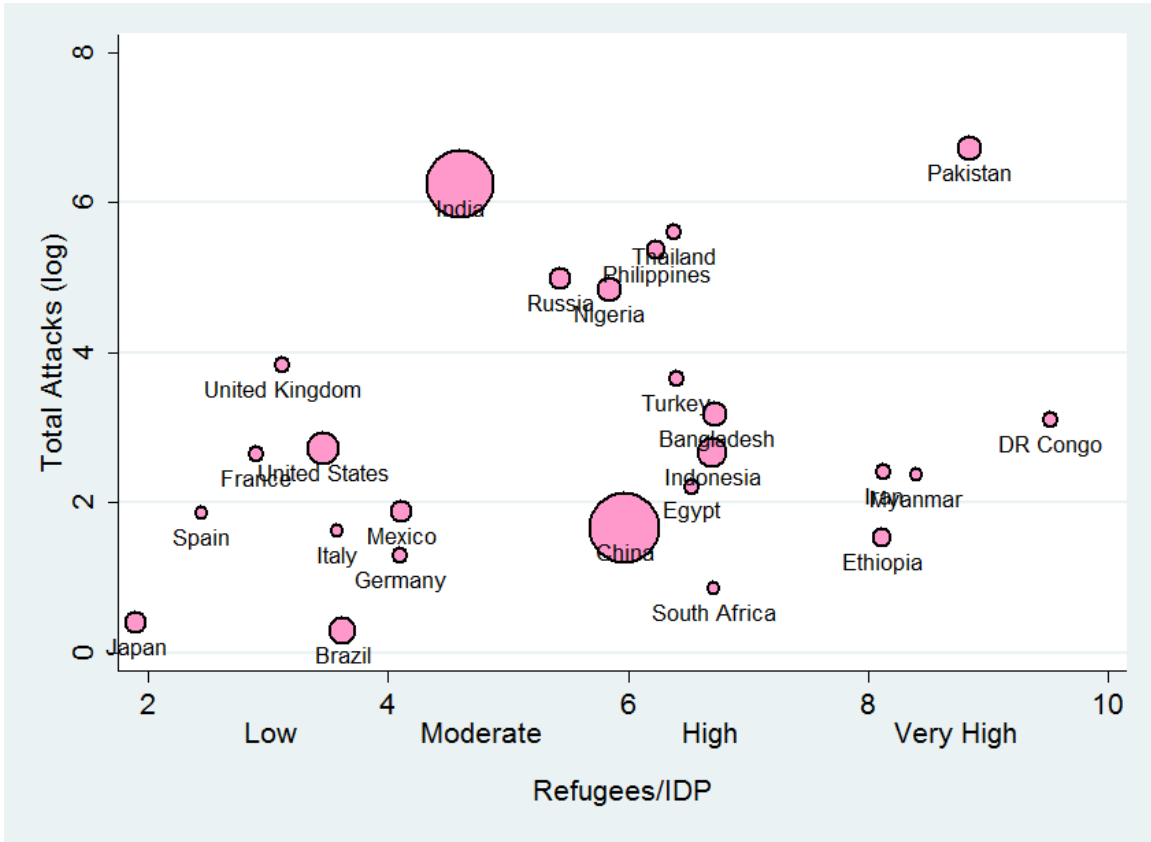
Figure 2.5: Scatter plot showing the cross-sectional relationship between Terror Attacks and Refugees/Internally Displaced Persons (Social Service Provision proxy 2) for 25 most populous states. Correlation for sample: 0.275. Correlation for all states: 0.367.

Figure 2.6: Scatter plot showing the cross-sectional relationship between Terror Attacks and Corruption Perception Index (Social Service Provision proxy 3) for 25 most populous states. Correlation for sample: -0.269. Correlation for all states: -0.282.

Appendix A

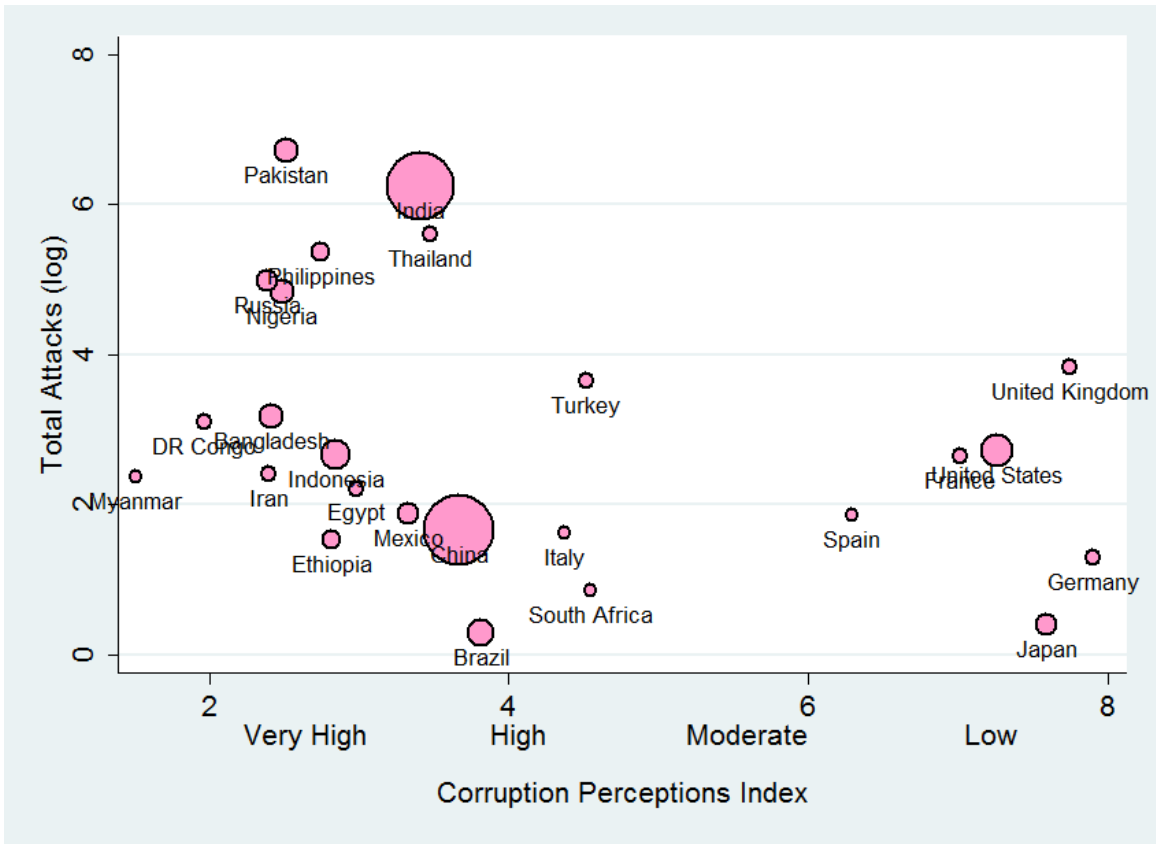Table 2.7: Effect of S&S/SSP on Terrorism (additional control variables)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS
Sacrifice and Stigma variables							
Government Restrictions Index	-0.016						-0.081
	(0.131)						(0.128)
Social Hostilities Index		0.352***					0.339***
		(0.099)					(0.093)
Group Grievance			0.753***				0.732***
			(0.267)				(0.255)
Social Service Provision variables							
Corruption Perceptions Index				-0.239			-0.013
				(0.274)			(0.244)
Economic Inequality					0.076		-0.051
					(0.229)		(0.223)
Refugees/IDP						0.260	0.228
						(0.165)	(0.154)
Control Variables							
Population (log)	1.611	1.627	1.841	1.646	1.427	1.260	1.680
	(1.324)	(1.280)	(1.264)	(1.297)	(1.356)	(1.284)	(1.232)
GDP pc (log)	-0.115	-0.027	-0.085	-0.061	-0.089	-0.122	-0.034
	(0.384)	(0.362)	(0.367)	(0.384)	(0.386)	(0.384)	(0.340)
SFI Effectiveness Score	0.208*	0.187	0.192*	0.206*	0.208*	0.202*	0.166
	(0.119)	(0.113)	(0.110)	(0.117)	(0.120)	(0.118)	(0.104)
SFI Legitimacy Score	0.075	0.070	0.058	0.068	0.069	0.059	0.044
	(0.095)	(0.091)	(0.092)	(0.096)	(0.096)	(0.095)	(0.088)
Polity Score	-0.250	-0.229	-0.168	-0.248	-0.248	-0.266	-0.175
	(0.212)	(0.210)	(0.214)	(0.217)	(0.219)	(0.217)	(0.203)
Polity^2	0.015	0.014	0.011	0.015	0.015	0.016	0.011
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Regime Durability	-0.007	-0.004	-0.004	-0.007	-0.007	-0.007	-0.001
	(0.021)	(0.021)	(0.020)	(0.021)	(0.021)	(0.021)	(0.019)
N	906	906	899	904	899	899	899
R^2	0.849	0.854	0.855	0.850	0.850	0.851	0.860

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Robust standard errors in parentheses are clustered by terrorist group. Regressions include state and year fixed effects, respectively. The dependent variable is the natural logarithm of total terrorist attacks carried out in state j in year t. The standardized indexes for the Sacrifice and Stigma/Social Service Provision proxies are used.

Table 2.8: Effect of Sacrifice & Stigma/Social Service Provision on Suicide Terrorism (additional control variables)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS
Sacrifice and Stigma variables							
Government Restrictions Index	-0.025						-0.030
	(0.056)						(0.052)
Social Hostilities Index		0.141**					0.134**
		(0.055)					(0.052)
Group Grievance			0.293**				0.271**
			(0.144)				(0.134)
Social Service Provision variables							
Corruption Perceptions Index				-0.194*			-0.104
				(0.114)			(0.098)
Economic Inequality					0.009		-0.082
					(0.098)		(0.102)
Refugees/IDP						0.239*	0.235**
						(0.121)	(0.117)
Control Variables							
Population (log)	0.764	0.769	0.891	0.807	0.759	0.517	0.778
	(0.769)	(0.731)	(0.784)	(0.759)	(0.787)	(0.716)	(0.717)
GDP pc (log)	-0.004	0.031	-0.008	0.037	-0.008	-0.044	0.016
	(0.212)	(0.210)	(0.212)	(0.213)	(0.217)	(0.207)	(0.208)
SFI Effectiveness Score	0.069	0.061	0.064	0.068	0.070	0.065	0.050
	(0.076)	(0.072)	(0.073)	(0.074)	(0.076)	(0.074)	(0.069)
SFI Legitimacy Score	0.014	0.012	0.010	0.009	0.015	0.006	-0.003
	(0.037)	(0.037)	(0.035)	(0.036)	(0.038)	(0.036)	(0.033)
Polity Score	-0.111	-0.100	-0.076	-0.107	-0.108	-0.124	-0.090
	(0.137)	(0.132)	(0.136)	(0.138)	(0.139)	(0.135)	(0.122)
Polity^2	0.007	0.006	0.005	0.007	0.007	0.007	0.006
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
Regime Durability	0.006	0.007	0.007	0.007	0.006	0.007	0.009
	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.012)	(0.011)
N	906	906	899	904	899	899	899
R^2	0.759	0.764	0.764	0.760	0.759	0.763	0.774

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Robust standard errors in parentheses are clustered by terrorist group. Regressions include state and year fixed effects, respectively. The dependent variable is the natural logarithm of total suicide attacks carried out in state j in year t. The standardized indexes for the Sacrifice and Stigma/Social Service Provision proxies are used.

Appendix B

The cumulative *State Fragility Index* is made up of an *Effectiveness Score* and a *Legitimacy Score,* such that

$$\text{State Fragility Index} = \text{Effectiveness Score} + \text{Legitimacy Score} \quad (25 \text{ points possible}).$$

The total *effectiveness score* is defined as

$$\text{Effectiveness Score} = \text{Security Effectiveness} + \text{Political Effectiveness} + \text{Economic Effectiveness} +$$
$$+ \text{Social Effectiveness} \quad (13 \text{ points possible}).$$

The total *legitimacy score* is defined as

$$\text{Legitimacy Score} = \text{Security Legitimacy} + \text{Political Legitimacy} + \text{Economic Legitimacy} +$$
$$+ \text{Social Legitimacy} \quad (12 \text{ points possible}).$$

I provide here brief descriptions of each of these indicators. On a four point scale, *Security Effectiveness* provides a measure of the general security and vulnerability to political violence in a country from, 1992-2016, with a score of 0 denoting a state with the lowest amount of "residual war" and 3 indicating the highest level of "residual war." *Security Legitimacy* provides a measure of state repression, 2002-2015.

Political Effectiveness gives a measure of regime/government stability, 2001-2016, taking into account the following factors: regime durability (based on a state *Polity V* score), current leader's years in office, and the total number of coup events. *Political Legitimacy* measures regime/governance inclusion. The five indicators used to determine this score are 1) a measure of factionalism in the state; 2) a measure of a state's ethnic group political discrimination against 5% or more of the population; 3) political salience of elite ethnicity; 4) polity fragmentation and 5) exclusionary ideology of ruling elite.

Economic Effectiveness gives a measure of a state's GDP per capita, 2010-2016 (constant 2005 US dollars). *Economic Legitimacy* measures the share of export trade in manufactured goods, 2002-2016. Merchandise exports include two classes of products, manufactured goods and primary commodities. A low percentage of manufactured goods indicates a high reliance on primary commodities and foreign

exchange. The manufacturing percentage of merchandise exports is converted into a four-point fragility score, where the highest value 3 is given when the percentage is less than or equal to 10.[15]

Social Effectiveness measures human capital development, 2016, based on the Human Development Index (HDI), 2016, which is a composite index of life expectancy, education, and per capita income indicators. Finally, *Social Legitimacy* gives a score for human capital care, 2016, based on a state's infant mortality rate.

---

[15]The world's main illegal drug supplying countries, Afghanistan, Burma, and Columbia receive the highest value.

Appendix C: Summary of methodology used to construct each Sacrifice and Stigma/Social Service Provision variable

Government Restrictions on Religion (GRI): Sacrifice and Stigma proxy 1[16]

1. Does the constitution, or law that functions in the place of a constitution (basic law), specifically provide for 'freedom of religion' or include language used in Article 18 of the United Nations Universal Declaration of Human Rights?

2. Does the constitution or basic law include stipulations that appear to qualify or substantially contradict the concept of 'religious freedom'?

3. Taken together, how do the constitution/basic law and other national laws and policies affect religious freedom?

4. Does any level of government interfere with worship or other religious practices?

5. Is public preaching by religious groups limited by any level of government?

6. Is proselytizing limited by any level of government?

7. Is converting from one religion to another limited by any level of government?

8. Is religious literature or broadcasting limited by any level of government?

9. Are foreign missionaries allowed to operate?

10. Is the wearing of religious symbols, such as head coverings for women and facial hair for men, regulated by law or by any level of government?

11. Was there harassment or intimidation of religious groups by any level of government?

12. Did the national government display hostility involving physical violence toward minority or non-approved religious groups?

13. Were there instances when the national government did not intervene in cases of discrimination or abuses against religious groups?

---

[16]Questions retrieved from Pew Research Center (2011). Refer to that source for an overview on the research objectives, information sources and methodology of this index. Also refer to the source to view the various possible answers to each question, the number and percentage of countries that fall into each category, and how each country scored on each question.

14. Does the national government have an established organization to regulate or manage religious affairs?

15. Did the national government denounce one or more religious groups by characterizing them as dangerous "cults" or "sects"?

16. Does any level of government formally ban any religious group?

17. Were there instances when the national government attempted to eliminate an entire religious group's presence in the country?

18. Does any level of government ask religious groups to register for any reason, including to be eligible for benefits such as tax exemption?

19. Did any level of government use force toward religious groups that resulted in individuals being killed, physically abused, imprisoned, detained or displaced from their homes, or having their personal or religious properties damaged or destroyed?

20. Do some religious groups receive government support or favors, such as funding, official recognition or special access?

20.1. Does the country's constitution or basic law recognize a favored religion or religions?

20.2. Do all religious groups receive the same level of government access and privileges?

20.3. Does any level of government provide funds or other resources to religious groups?

20.3.a. Does any level of government provide funds or other resources for religious education programs and/or religious schools?

20.3.b. Does any level of government provide funds or other resources for religious property (e.g., buildings, upkeep, repair or land)?

20.3.c. Does any level of government provide funds or other resources for religious activities other than education or property?

20.4. Is religious education required in public schools?

20.5. Does the national government defer in some way to religious authorities, texts or doctrines on legal issues?

21. Does any level of government penalize the defamation of religion, including penalizing such things as blasphemy, apostasy, and criticism or critiques of a religion or religions?

Social Hostilities Index (SHI): Sacrifice and Stigma proxy 2[17]

1. Were there crimes, malicious acts or violence motivated by religious hatred or bias?

2. Was there mob violence related to religion?

3. Were there acts of sectarian or communal violence between religious groups?

4. Were religion-related terrorist groups active in the country?

5. Was there a religion-related war or armed conflict in the country?

6. Did violence result from tensions between religious groups?

7. Did organized groups use force or coercion in an attempt to dominate public life with their perspective on religion, including preventing some religious groups from operating in the country?

8. Did religious groups themselves attempt to prevent other religious groups from being able to operate?

9. Did individuals or groups use violence or the threat of violence, including so-called honor killings, to try to enforce religious norms?

10. Were individuals assaulted or displaced from their homes in retaliation for religious activities, including preaching and other forms of religious expression, considered offensive or threatening to the majority faith?

11. Were women harassed for violating religious dress codes?

12. Were there incidents of hostility over proselytizing?

13. Were there incidents of hostility over conversions from one religion to another?

---

[17]Questions retrieved from Pew Research Center (2011). Refer to that source for an overview on the research objectives, information sources and methodology of this index. Also refer to the source to view the various possible answers to each question, the number and percentage of countries that fall into each category, and how each country scored on each question.

Group Grievance (GG) Indicator: Sacrifice and Stigma proxy 3[18]

Post-Conflict Response

1. Truth & Reconciliation: Does a Truth and Reconciliation process exist or is one planned, needed?

2. Reintegration: Have groups been reintegrated, if applicable?

3. Reconstruction: Is there a plan for reconstruction and development?

4. Compensation for Victims: Are victims of past atrocities compensated or is their a plan to compensate them?

5. War Criminals: Are war criminals apprehended and prosecuted? Do the public feel they are properly punished?

6. Amnesty: Has amnesty been granted?

Equality

7. Distribution of Resources: Is there an equitable and efficient distribution of resources?

Divisions

8. Group Hatred or Tolerance: Are there feelings of or reports of ethnic and/or religious intolerance and/or violence?

9. Group Oppression: Are groups oppressed or do they feel oppressed?

10. History: Is there a history of violence against a group or group grievance?

11. Intergroup Relations: How are intertribal and/or interethnic relations?

12. Religious Persecution or Tolerance: Is there freedom of religion according to laws and practiced by society? Are there reports of violence that is religiously motivated?

Communal Violence

13. Vigilante Justice: Are there reports of vigilant justice?

14. Mass Violence: Are the reports of mass violence and/or killings? Are there reports of violence that is racially motivated?

---

[18]Questions retrieved from Fund for Peace (2015). Refer to this source for methodology.

Uneven Economic Development Index (Economic Inequality): Social Service Provision proxy 1[19]

Economic Equality

1. Economic Equality Gap: Is there a large economic gap?

2. Discriminatory Economics: Is the economic system discriminatory?

3. Economic Justice: Does economic justice exist?

4. Hiring Practices: Are hiring practices generally fair âĂŞ legally and the perception of others?

5. Social System: Do equal rights exist in the society?

6. Equal Rights Legislation: Are there laws protecting equal rights?

Economic Opportunity

7. Free Education: Does free education exist and if so, to which grade?

8. Equal Education: Is the education provided relatively equal?

9. Fair Housing: Is there a housing system for the poor?

10. Job Training: Do programs for job training exist?

11. Access to Job Training: Use Do people know about the job training and is it available based on qualification and need?

Socio-Economic Dynamics

12. Ghettos or Slums: Do ghettos and slums exist?

---

[19]Questions retrieved from Fund for Peace (2015). Refer to this source for methodology.

Refugees and Internally Displaced Persons (Refugees/IDP): Social Service Provision proxy 2[20]

Refugees

1. Influx of Refugees: Are refugees likely to come from neighboring countries?

2. Impact of Refugees: Are there resources to provide for projected and actual refugees?

3. Increase in Refugee Camps: Are there sufficient refugee camps or are refugees integrated into communities?

4. Violence against Refugees: Are there reports of violence against refugees?

5. Safety of Refugee Camps: Are conditions safe in refugee camps?

Internally Displaced Persons

6. Number of IDPs: How many IDPs are there in relation to population?

7. Increase in IDPs: Are IDPs likely to increase in the near future?

8. Impact of IDPs: Are there resources to provide for projected and actual IDPs?

Response to Displacement

9. Relief Efforts: Is there access to additional resources from international community for refugees and/or IDPs?

10. Relocation & Settlement: Are there plans for relocation and settlement of current IDPs and/or refugees?

---

[20]Questions retrieved from Fund for Peace (2015). Refer to this source for methodology.

Corruption Perceptions Index (CPI): Social Service Provision proxy 3[21]

Methodology

The following steps are followed to calculate the CPI:

1. Select data sources: The Corruption Perceptions Index (CPI) is an aggregate indicator that brings together data from a number of different sources. Each data source must fulfill the following criteria to qualify as a source for the CPI:

   – Quantifies perceptions of corruption in the public sector.

   – Be based on a reliable and valid methodology, which scores and ranks multiple countries on the same scale.

   – Performed by a credible institution and expected to be repeated regularly.

   – Allow for sufficient variation of scores to distinguish between countries.

2. Standardise data sources to a scale of 0-100 where a 0 equals the highest level of perceived corruption and 100 equals the lowest level of perceived corruption.

3. Calculate the average: For a country or territory to be included in the CPI, a minimum of three sources must assess that country.

4. Report a measure of uncertainty: The CPI is accompanied by a standard error and confidence interval associated with the score, which capture the variation in scores of the data sources available for that country/territory.

Sources were used to construct the Corruption Perceptions Index 2014:

1. African Development Bank Governance Ratings 2013

2. Bertelsmann Foundation Sustainable Governance Indicators 2014

3. Bertelsmann Foundation Transformation Index 2014

4. Economist Intelligence Unit Country Risk Ratings 2014

5. Freedom House Nations in Transit 2013

6. Global Insight Country Risk Ratings 2014

---

[21]Description retrieved from Transparency International (1995).

7. IMD World Competitiveness Yearbook 2014

8. Political and Economic Risk Consultancy Asian Intelligence 2014

9. Political Risk Services International Country Risk Guide 2014

10. World Bank - Country Policy and Institutional Assessment 2013

11. World Economic Forum Executive Opinion Survey (EOS) 2014

12. World Justice Project Rule of Law Index 2014

Chapter 3

The Linkage Between Terrorism and Party Politics: An Applied Microeconomic Case Study Analysis

What is the relationship between party politics and terrorism? In this study I examine the conditions that lead some political parties to adopt terrorist tactics, and, on the other hand, the conditions that make terrorist groups transition to electoral politics. Combining economic theory with case studies of militant organizations in Lebanon, Turkey, Israel, Palestine, Spain, Ireland, and South America, I analyze the interplay between terrorism and party politics based on the paradigm of rational choice theory. As economic agents pursuing political goals, terrorist organizations respond to prevailing political, social, and cultural incentives by adjusting their behavior accordingly. Thus, in pursuit of their goals rational terrorists will weigh the costs and benefits of the various tactics at their disposal, which include both terrorism and party politics, and will choose a combination of tactics that they expect optimizes political benefits. Within a supply and demand framework I consider the types of exogenous and endogenous events that may shift a political group's marginal costs and marginal benefits of committing violent acts in pursuit of its goals, and then use a selection of cases that offer valuable insights into the behavior of terrorist groups and political actors more broadly.

3.1 Introduction

"The function of the armed struggle is not to destroy the enemy, for that is utopian, but it is indeed to force him, through a prolonged war of psychological and physical attrition, to abandon our territory due to exhaustion and isolation."

–1978 Policy Pronouncement by the ETA (Basque nationalist terrorist group), quoted in Letamendia (1994) 114

Under what conditions do some nonviolent political parties transform into militant organizations? Alternatively, what causes some militant organizations to turn away from violence and instead engage in nonviolent party politics? On the surface, terrorist violence may seem antithetic to electoral politics. Whereas democratic political activity is generally perceived to signify a healthy state apparatus, terrorist activity is often assumed to be an absolute rejection of the political process. Although counterintuitive, the distinction between party politics and terrorism is not always as clear as many in West tend to assume. Terrorism, after all, is fundamentally ideological or political in nature, rather than financial (National Consortium for the Study of Terrorism and Responses to Terrorism (START)). As such, voting and political protest are more accurate analogies for terrorism than crime (Krueger (2007), 4).

Economists have suggested that terrorist behavior can be understood within a paradigm of rational choice theory (van Um (2015), 2). Rational choice models presume that the rational terrorist has stable objectives that he wants to accomplish, takes into account costs, benefits, and probabilities of events, and chooses the best course of action in pursuit of his goals. Economic theory thus has much to offer in explaining the dynamics involved in the relationship between nonviolent party politics and political extremism: assuming optimizing behavior, the proposition that violence and non-violence are simply two types of tactics employed by groups in pursuit of their goals, an organization will use the combination of violence and non-violence that best helps it attain its objectives.

In Section 3.2 I develop an economic framework of the relationship between party politics and terrorism. The basic economic theory I employ is based on an assumption of political rationality such that an organized political movement will resort to terrorist tactics only when it perceives that the marginal benefits of doing so are greater than the marginal costs. As such, I analyze extremism within a market framework that includes a supply side and a demand side, and describe how events affecting the supply and/or demand curves may induce an entry into, or exit from, terrorism.

In Sections 3.3 and 3.4 I then illustrate the dynamics involved in the transformation of organiza-

tions into or out of terrorism by way of case studies of numerous 20th and 21st century organizations that have engaged in both militancy and party politics, at times simultaneously. I give detailed accounts of a variety of organizations across the ideological spectrum, covering three continents and over half a century. I examine the Kurdistan Workers' Party (PKK), a Kurdish left-wing separatist military and political organization that began as a revolutionary socialist mass movement of political protest by Kurdish students in the 1970s, but has since then employed both military and political tactics towards its objective of an independent Kurdish state. I consider the case of the Lebanese Civil War (1975-1990), which began when the power-sharing political status quo collapsed, leading to religious-based political parties forming armed militias to wage war against poitical adversaries. I then investigate Hezbollah, Hamas, and Basque separatists in Spain, respectively; the military and political activities of each of these has gone through complex cyclical patterns, at times focusing energy on violence but when the circumstances dictate strategically transitioning into a party framework that competes for support at the ballot box. Finally, I examine the case of right-wing Zionist paramilitary organizations that operated in British-controlled Mandatory Palestine prior to the establishment of the State of Israel in 1948. The prototype of the secular political right-wing in Israel, these organizations drew their support from the "Revisionist Zionist" popular movement in Mandatory Palestine and conducted terror campaigns against the British establishment and against the Arab population. After the founding of the Jewish state in 1948, these militias went underground and were initially reluctant to surrender their autonomy and merge into the official state-run military (the IDF). But following a decisive military campaign launched by the IDF to stamp out all rival Jewish factions in the newly-formed state, these groups, under the leadership of future prime minister Menachem Begin, unconditionally laid down their arms and transitioned into political parties, establishing the *Herut* ("Freedom") Party that eventually merged into the Likud party.

3.2   Theory

Figure 3.1 shows the conditions that may encourage a nonviolent political party to become violent, and, alternatively, the circumstances that may lead a terrorist group to pursue its goals through nonviolent means. The curves MC_0 and MB_0 represent the marginal costs and the marginal benefits, respectively, of engaging in violence, where the optimal level of violence, the intersection of the two curves, is E_0. There exists a threshold, shown on the graph as the vertical line, which signifies the level at which all points to the right denote a positive optimal level of violence, and all points to the left indicate the optimal level of

violence to be zero.

What kinds of factors cause MC_0 and/or MB_0 to shift, thus affecting the equilibrium quantity of violence pursued by a group, and potentially leading to a group transforming either into or out of terrorism? The marginal cost schedule facing a group is influenced by factors that either raise or lower the costs of participating in terrorist violence, which primarily includes state law enforcement/counterterrorism abilities. States that maintain an effective security apparatus are able to raise the costs faced by sub-state actors of engaging in political violence, thus implying relatively high marginal costs of violence at every level of terrorism. If the marginal benefit curve stays constant, then a strengthening of a state's law enforcement capabilities will induce a shift from MC_0 to MC_1; depending on the magnitude of this shift, the optimal level of violence may lead to a situation in which a violent group no longer considers it optimal to engage in terrorism (Raynold (2018)).

Because I assume that the objectives of terrorist groups and political parties are both political or ideological in nature, rather than criminal, an optimizing group will pursue a combination of violent and nonviolent means such that its objective function is maximized. Assuming that voting is an apt analogy for terrorism (Krueger (2008), 4), the main factor that should influence the marginal benefits of terrorism in pursuit of its political objectives is the quality of a state's political order that promotes non-violent means of voicing dissent (Krieger and Meierrieks (2011)). Theoretically, democratic political regimes are better suited to facilitating the peaceful mediation of disputes than autocratic ones (Raynold (2018)), thereby implying a lower marginal benefit of violence relative to the marginal benefit of party politics as a way to pursue political goals in democratic states. A strengthening in the integrity of civil institutions so that dissatisfied entities within a state are able to more effectively express their grievances within the political structure would lead to, all else equal, a shift in the marginal benefit curve from MB_0 to MB_1; depending on the magnitude of the shift, and whether the marginal cost curve also shifts, the optimal level of violence for a group may become non-positive, as shown in Figure 3.1.
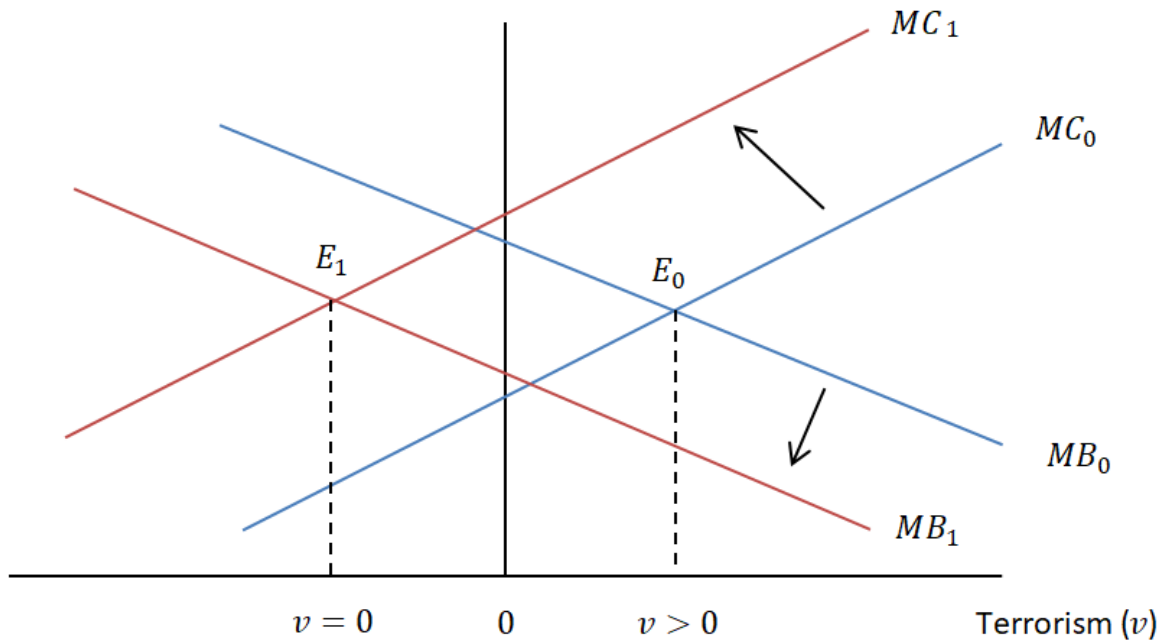
Figure 3.1: This figure shows the conditions that may encourage a nonviolent political party to become violent, and, alternatively, the circumstances that may lead a terrorist group to become nonviolent. The curves MC_0 and MB_0 represent the marginal costs and marginal benefits associated with conducting terrorism as perceived by an organization. MC_1 and MB_1 then denote hypothetical shifts in the costs and benefits of violence, respectively. The optimal level of violence is positive at the initial equilibrium, E_0, but is non-positive at the new equilibrium, E_1.

The events described above that cause shifts in the marginal cost curve (the relative efficacy of a state's security establishment in combating violent dissent within the state) and the marginal benefit curve (whether a state's political order allows for grievances to be expressed and dealt with in a peaceful manner) are only two general factors relevant to a group's decision whether or not engage in terrorist activity. I will now turn to a more in-depth discussion of types of exogenous, and endogenous, events that influence a sect's decision to either pursue or refrain from violent tactics.

3.3 From Nonviolent to Violent

3.3.1 Economics of the Transformation

There are numerous factors that operate as shifters of the marginal cost and marginal benefit schedules of terrorism. Figure 3.1 suggests that the necessary and sufficient condition under which a political group perceives that its optimal level of violence is positive, is when the intersection of the supply and de-

mand curves lies to the right of the minimum violence threshold. For a group whose current optimal level of violence is non-positive, entry into terrorism can occur when the group experiences 1) a sufficiently large reduction in the marginal costs of perpetuating terrorism, holding constant the marginal benefit curve; or 2) a sufficiently large increase in the marginal benefit curve, holding constant the marginal cost curve. Of course, events that simultaneously affect both curves may also induce transformation from nonviolence into violence, depending on the relative magnitudes of the shifts (Raynold (2018)).

3.3.2 Methods and Reasons Political Parties Turn to Violence

The transformation from party politics into terrorism will usually take place in one of three ways (Pedahzur et al. (2008), 41). First, an existing political party may become involved in terrorism. This could happen if the party itself directly engages in violence, or it could happen if the party indirectly gets involved in violence by establishing a "military wing" that is only loosely affiliated with the central political apparatus, giving a sense of plausible deniability to the "political wing." An example of this method of transition includes the Kurdistan Workers' Party (PKK) (discussed in greater detail in Section 3.3.3), a separatist Kurdish organization that began as a party in the 1970s but turned to terror tactics in the 1980s. Since its founding, the organization has had ties, to varying degrees of closeness, to a sequence of Kurdish nationalist political parties in Turkey. Another example of a party that established a military wing in the case of the Revolutionary Armed Forces of Colombia (FARC), which was established in 1964 as the military wing of the Colombian Communist Party.

A second way that the transformation from party politics into terrorism can occur is if a radical faction within a party splits off from the main organization and launches a terror campaign; this will often occur when the radical faction feels that the party has become too soft or overly-accommodating to its political opponent. A third way that transition can occur is when political parties incite and encourage terrorism, but do not directly engage in it (Pedahzur et al. (2008), 41).

Another important factor that may induce transformation from nonviolence into violence, primarily by means of an increase in the marginal benefit of violence, is a change in the nonviolent political party's objective function so that party leaders or constituents no longer feel that their interests are being adequately represented through peaceful party politics (Pedahzur et al. (2008), 18). For example, the political goals of an ethnic or religious minority group within a state may become more ambitious over time. Initially, the goals of the group may be limited to things like equality under the law, integration into the general society, political representation at the national level, or experiencing a certain amount of lo-

111

cal autonomy. For these types of goals, participation in regular party politics may adequately meet the needs of the minority group. However, if the fundamental goals of the group change and become more ambitious, such as when a group pursues not merely political power or local autonomy but full-scale secession and independence, then the marginal benefit of violence may increase relative to the marginal benefit of party politics, such that the group transforms into a violent sect. The long history of the Basque nationalist-separatist movement (discussed in Section 3.4.3) offers an example of how this kind of change in demand may incentive an organization to pursue a more ambitious terror campaign.

Or, even if this type of revision of group objectives does not increase the marginal benefit curve to the point where the optimal level of violence is positive, political expression of a minority group may in itself provoke a response from authorities that could, ironically, trigger additional radicalization among the minority sect, leading to a further revision of group objectives that includes exacting revenge on the repressive authorities (Raynold (2018)). This kind of unfortunate downward spiral of violence between a minority group and the ruling authorities has been witnessed in the Sri Lankan Civil War, an intermittent insurgency between secessionist Tamil nationalists (led by the Tamil Tigers) and the Sri Lankan government which lasted from 1983 to 2009, and also in the case of the Basque conflict (Pedahzur et al. (2008), 18).

3.3.3   The Case of the Kurdistan Workers' Party

This dynamic been seen in the Kurdish struggle for independence in Turkey. The Kurdistan Workers' Party (PKK) was founded in 1974 by Kurdish students as a Marxist-Leninist political organization advocating for cultural, linguistic, and political rights for Turkey's Kurdish minority (Joseph (2006), 100) and, until recently, sought to create an independent Kurdish state in southeastern Turkey and parts of neighboring countries inhabited by Kurds (Bruno (2007)). Following a military coup in Turkey in 1980, the Turkish government took aggressive steps to suppress ethnic Kurds, including provisions in the law banning the spoken and written use of the Kurdish language, leading to the exile, imprisonment, or execution of many PKK members (Joseph (2006), 100). As a response, the PKK officially launched an insurgency in August 1984 that by the beginning of 2000 had resulted in more than 37,000 deaths, up to 3,000 villages being destroyed, and up to 3 million people being internally displaced (Joseph (2006), 100).

During the period of its militancy in the 1980s and 1990s, the PKK depended on guerrilla warfare against the Turkish government, including bombings against government sites, kidnappings of foreign tourists in Turkey, suicide bombings targeting local governors, police installation and tourism related tar-

gets, raids on villages, and attacks on Turkish diplomatic offices in Europe (Bruno (2007); START (2015)). The Turkish military launched a crushing crackdown of the PKK in 1999, leading to the capture and imprisonment of its founder and leader, Abdullah Ocalan (Bruno (2007)). Remarkably, in the immediate wake of the crackdown, instead of inciting their militants to pursue further armed struggle, both Ocalan and the remaining leaders renounced militancy and attempted to reorganize and rebrand the movement as a political party (Joseph (2006), 101). At a party Congress in 2002, the PKK changed its name to the Kurdistan Freedom and Democracy Congress (KADEK) and proclaimed a commitment to non-violent activities in support of Kurdish rights (U.S. Department of State (2005)). The ceasefire lasted for five years, during which time the group divided into two factions, politically-minded reformists and hardliners who advocated for renewed militancy (U.S. Department of State (2005)). The hardliners took control of the party in February 2004, and then on June 1, 2004, the PKK's hardline military wing, the People's Defense Force (HPG), officially called off the self-imposed ceasefire and returned to armed struggle (U.S. Department of State (2005)). The subsequent violence reached its peak in 2012, when at least 541 people died (Tezcür (2013)). This second insurgency continued until the negotiation of a new ceasefire in 2013.

3.3.4 The Case of Lebanon

Another event that may lead to a transformation from nonviolent party politics to terrorism is a crisis of political disintegration that usually occurs in failing or failed states (Pedahzur et al. (2008), 18). Notable examples include the Lebanese Civil War, which lasted from 1975 to 1990, and Iraq in the post-American invasion period. The Lebanese Civil War was a multistage conflict caused when minor sectarian clashes in 1975 fractured a delicate power-sharing agreement between the various sects (an unwritten agreement known as the "National Pact") and sparked a chain of events that soon resulted in the breakdown in authority of the national government. The country became sharply divided along sectarian lines, and the political parties which had previously represented each religious community–Maronite Christian, Sunni Muslim, Shia Muslim, Druze, and Palestinians–in the national government now formed their own militias, leading to all-out conflict between the sects. The major sectarian political parties involved, such as the Phalanges Party (Maronite Christian), Amal (Shia Muslim), Hezbollah (Shia Muslim), Palestine Liberation Organization (Palestinian), and the Progressive Socialist Party (Druze), each established a military wing that not only provided protection to the respective communities but also engaged in open conflict with the other militias and committed terrorist acts against rival communities (Pedahzur et al. (2008), 18).

In the case of Lebanon, then, the events in the 1970s had the effect of increasing both the marginal

cost and marginal benefit curves of terrorism, explaining the transformation of political parties into militancy. The weakness of the Lebanese national government and its inability to enforce the rule of law reduced the marginal cost of terrorism at every level of violence. In addition, the sectarian conflict led to the radicalization of each religious community that increased the marginal benefit of terrorism at every level of violence.

3.4 From Violent to Nonviolent

Pedahzur et al. (2008)[1] note that there are two principle ways that an organization may transform from terrorism into peaceful party politics. The first is by following the biblical admonition to "beat their swords into plowshares and their spears into pruning hooks," that is, completely laying down its arms and channeling its ideological fervor into electoral politics. Examples of this type of transformation include the Tupamaros in Uruguay, a left-wing urban guerrilla group active from 1967 to 1972. In response to direct Tupamaro attacks against the Uruguayan military in 1972, the army took action and swiftly destroyed the movement. Many members fled into exile, while others were caught by the military and either killed or tortured and imprisoned. When the military dictatorship in the country ended in 1984 and democracy restored, the Tupamaros were granted amnesty, and invited to participate in parliamentary elections, which they did, reestablishing themselves as a peaceful political actor (Pedahzur et al. (2008), 75). A similar transition also occurred in the case of the Zionist paramilitary organization, the *Irgun*, which at the behest of its commander, Menachem Begin, abandoned its paramilitary character following the establishment of the State of Israel in 1948 and transformed into the right-wing *Herut* ("Freedom") political party, the direct predecessor of the current *Likud* party (see Section 3.4.4 for a complete discussion of this case).

Another way that an organization may transform from violence into politics is by creating a "political wing" to complement its military activities. In November 1995, for instance, Hamas launched its political wing, the "Islamic National Salvation Party," as a way to attain political influence and mobilize support for its cause (see Section 3.4.2). Similarly, up until 1979 the Provisional Irish Republican Army (PIRA) had relied exclusively on violence in pursuit of its Irish unification goals; but in 1979 leader Gerry Adams proposed the formation of a above-ground legitimate political movement that could mobilize supporters and gain parliamentary influence, and hence established *Sinn Fein*. Other militant sects that have added to their arsenals a political wing include Hezbollah (see Section 3.4.1), the left-wing nationalist "19th of

---

[1]p. 75

April Movement" in Columbia, and Basque separatist ETA organization Basque in Spain (Pedahzur et al. (2008), pp. 25, 30).

3.4.1 The Case of Hezbollah

The transition from terrorism to party politics may occur in the wake of a transformation of the established political order (Pedahzur et al. (2008), 85). The case of Lebanese Shia Islamist group Hezbollah ("Party of God") provides an example of how adopting party politics often works to legitimize an organization internationally and to expand its national constituency (Acosta (2014)). Hezbollah was established in the early 1980s by the Iranian government in order to form an alternative political movement to the older Amal, the largest and strongest political party/militia representing Lebanon's Shia population (Pedahzur et al. (2008), 86). Hezbollah's initial agenda, expressed in the issuing in February 1985 of 'The Open Letter' manifesto, revolved around abolishing Maronite dominance over Lebanese politics (referred to as "Political Maronitism"), and establishing an Islamic state in Lebanon modeled on Iran's revolutionary Shiism (Rabil (2012)). In addition to these domestic political goals, Hezbollah also focused on fighting the Israeli occupation of southern Lebanon, and punishing Lebanese those in the Lebanese establishment (mostly Maronites) who collaborated with Israel.

Hezbollah is a example of a pragmatic organization which oscillates between party politics and terrorism based on changes in the Lebanese political climate. While the organization's main goal, establishing a revolutionary Shia Islamic order in Lebanon, has remained unchanged over the course of its existence (Hamzeh (2004)), the instability and unpredictability of Lebanese politics means that the relative price of political violence, in relation to party politics, fluctuates, leading an optimizing political actor like Hezbollah to adjust its tactics accordingly. During the political chaos of the Lebanese Civil War in the 1980s, with central authority in Lebanon nonexistent, the costs perceived by Hezbollah in pursuing its objectives using violent means were extremely low. During this decade, Hezbollah proved to be an formidable revolutionary militia, successfully establishing itself as a viable political and military alternative to its archrival, the Amal Movement, the other major Shia-dominated political party/militia in Lebanon. In 1982-83, for example, it carried out operations against US and international peacekeeping forces in Lebanon, most notably the 1983 Beirut barracks bombing, when in a coordinated suicide attack two truck bombs drove into the American and French military barracks, respectively, killing 241 US marines and 58 French peacekeepers. The modus operandi of this attack, remote detonation of a car or truck bomb by suicide terrorists, was a tactic that would be one of Hezbollah's trademarks (Pedahzur et

al. (2008), 86).

Hezbollah also focused its attention on waging asymmetric warfare against the Israeli military. In 1982, the Israeli military invaded Lebanon in 1982 in a campaign called "Operation Peace for Galilee," launched in response to ongoing raids against Israel by the Palestine Liberation Organization (PLO) from its newly-established base in southern Lebanon (Martin (2017), 436).[2] The immediate catalyst for the operation was the attempted assassination in London of Israel's ambassador to the United Kingdom, Shlomo Argov, by terrorists from the Abu Nidal Organization.[3]

Hezbollah's struggle against the Israel military is notable because of its use of suicide terrorism, a previously uncommon tactic that Hezbollah popularized during this conflict. Hezbollah has been linked to 36 suicide attacks in Lebanon between 1982 and 1986, killing 659 individuals, mostly Israeli soldiers (Pape (2006), 129). The most infamous of these attacks were the 1982-1983 Tyre headquarters bombings, two suicide bombings, separated by almost exactly one year, against Israeli military headquarters in Tyre. In these attacks, suicide bombers drove vehicles rigged with explosives into the seven-story building, killing over 90 people in the first attack and about 60 the following year. Having successfully accomplished its mission of eradicated the PLO from Lebanon, in early 1985 Israel withdrew from most of Lebanon, a victory celebrated by Hezbollah. Israel continued to occupy a small buffer zone in southern Lebanon, however, and a war of attrition ensued between the two sides until the total Israel withdrawal in 2000.

The withdrawal by the Israeli forces to the security zone in southern Lebanon, along with the ending of hostilities of the Lebanese Civil War, formalized in the signing in late 1989 of the Taif Agreement which restored the national political system in Lebanon, prompted Hezbollah to adapt itself to these changing circumstances by officially entering the "political game" (Ranstorp (1998)). This transition– referred to internally as the *Infitah*, 'opening up', of Hezbollah to the political scene– did not occur without

---

[2] Founded in 1964, the PLO, an umbrella organization consisting of numerous secular Palestinian nationalist resistance movements, relocated to Jordan after Jordan lost control of the West Bank in the 1967 Arab-Israeli War. From its base in Jordan, the PLO carried out cross-border attacks against Israel, who often responded by attacking Jordanian targets. By 1970 King Hussein of Jordan had become fed up with the PLO's presence in his country, as the Palestinian *fedayeen* had essentially set up a state within a state in Jordan, attempting on a couple of occasions to assassinate the king himself. Following King Hussein's suppression of the PLO's rebellion against him in 1970 in a conflict known as "Black September," the now-displaced PLO, under Yasser Arafat's leadership, fled to Lebanon, setting up its headquarters in Beirut, subsequently used as a staging ground for planning raids and airplane hijacking operations against Israelis and Jews. In addition to being the context for the Israeli invasion of Lebanon in 1982, the PLO's settling in Lebanon was one of the catalysts for the Lebanese Civil War; its presence in the country had a major destabilization effect on sectarian strife in Lebanon, and the all-out conflict formally began in 1975 with clashes between Maronite Christians and Palestinians in the streets of Beirut.

[3] Named after its founder, the Abu Nidal Organization (ANO) was created in 1974 when Abu Nidal split from Arafat's Fatah faction of the PLO (ANO is also referred to as "Fatah-The Revolutionary Council"). The split was caused by Abu Nidal becoming disillusioned with Arafat's alleged willingness to seek compromise with Israel, as well as for being corrupt. A coalition of radical factions, including ANO, formed the so-called "Rejectionist Front" in 1974 that accused the PLO of being too moderate in its stance against Israel. Infighting between the Rejectionist Front and the PLO became intense during the Lebanese Civil War of the 1980s, precipitating Arafat's relocation to Tunis in December 1983 (van Um (2015), 83).

much heated debate amongst the leadership, however, as it realized that by participating in the Lebanese elections it would be admitting legitimacy to the Lebanese political system that it had previously been adamant about abolishing (Rabil (2012)). Hezbollah's leadership formed a committee to assess the merits of political participation. The committee realized there were many advantages of entering politics, such as 1) recognition of Hezbollah as a legitimate organization by the state and the Lebanese people; and 2) the ability to use parliament as a platform to present its Islamist vision and draft legislation furthering its "resistance" agenda. The committee voted (ten out of twelve) in favor of political participation, believing that the decision did not ultimately conflict with the movement's vision for defending the affairs of its Shia base, and also not in conflict with the priority of *jihad*, especially concerning resistance against Israel (Rabil (2012)). The reasoning behind Hezbollah's decision to participate in parliamentary politics was coherently explained by Ayatollah Muhammed Hussein Fadlallah, Hezbollah's spiritual father. This explanation is instructive because Fadlallah not only describes why the advantages of transition outweigh the disadvantages, but also attempts to reassure the skeptics in the movement who feared that the transition would lead to making political concessions on core principles:

> Hezbollah should enter the electoral arena if only for the sake of Islamic legitimacy in Lebanon, which dictates the formation of a parliamentary party. This is not to say that the Islamists have embraced the parliamentary system, but parliament does provide a forum where they can express their views and urge others, if not to adopt those views, at least to be more accommodating toward them. Participation in this system may enable Hezbollah to realize some transitional goals. I believe that Hezballah has reached a stage of reasonable political maturity. It has amassed expertise in military, security, cultural, and political affairs, which greatly enhances its chances of spreading its influence in Lebanon, despite the challenge from the international American-Israeli campaign against it. It would be very difficult to terminate the role of Hezballah, because that role has strong grass-roots support and is furthermore well grounded in its structure, methodology, thought, and political activities (Rabil (2012)).

Thus, without compromising its stated objectives, the group entered politics and presented a "Lebanonization" program, which was designed to electorally legitimize itself and create a political infrastructure that could be used as a tool to expand its influence beyond its Shia bases in Dahieh (a Shia-majority southern suburb of Beirut) and areas of southern Lebanon (Rabil (2012); Acosta (2014)). This strategic readjustment, from a "military jihad" to a "political jihad," demonstrates Hezbollah's flexibility and pragmatism

(Hamzeh (2004)). It also shows that the main factor dictating the methods employed by the group at any particular time in pursuit of its goal is the Lebanese political structure, a factor not of course exogenous to the actions of Hezbollah itself; when the state is strong, as it was following the end of the Civil War in 1990 (i.e., relatively high marginal cost of engaging in political violence), Hezbollah focuses on consolidating power through its political and social infrastructure. When the state is weak (low marginal cost of engaging in political violence), Hezbollah uses more militant tactics. (Rabil (2012))

This self-awareness of the need to adjust its tactics depending on the current political climate is encapsulated by a statement made by Muhammad Fannish, a leading member of Hezbollah's Politbureau, which was instituted prior to the organization's decision to participate in the first Lebanese parliamentary elections after the ending of the Civil War in August-September 1992: "The movement is driven, through such an understanding, to change the present, develop capabilities, surmount obstacles, and define the means appropriate for continuing on the road towards objectives" (Ranstorp (1998)).

In Figure 3.2 I illustrate the cost-minimization problem facing a group like Hezbollah that wishes to efficiently allocate resources between terrorist activity and party politics in pursuit of its goals.[4] Assume that terrorist activity and party politics are the two inputs Hezbollah uses to produce output, which in this case can be understood as the achievement of political or ideological goals. The isoquant line shows the combination of terrorist activity and party politics that can produce a given level of output, and the isocost lines show the combination of these inputs that cost the same amount. Hezbollah maximizes its "profits" when it chooses the combination of factors that costs the least. Profits are maximized by maximizing the level of output produced for a given cost or, equivalently, minimizing costs of producing a given amount. This is determined by finding the point of tangency between the isoquant and isocost curves, which at original input prices is shown at Q_0, where v_0 units of terrorism and p_0 units of party politics are "produced." Suppose this equilibrium illustrates Hezbollah's behavior during the chaotic period of 1980s when the Lebanon's civil society was in shambles and power was in the hands of sectarian warlords who settled political disputes by deploying their militias to attack enemies.

Following a hypothetical change in the ratio of the prices of the two inputs, terrorism and politics, the isocost line shifts from C_0 to C_1; the absolute value of the slope of the new isocost line has increased, meaning terrorist activity has now become relatively more expensive for Hezbollah. Historically, this could understood as the period of time following the cessation of hostilities with the 1989 ratification

---

[4]Anderton et al. (2009) (pages 126-155) provide a useful overview of the principles of economic choice and game theory that shed light on the resource allocation decisions made by terrorists.

of the Taif Agreement, which restructured the political system in Lebanon and ordered the disarmament of all sectarian militias (Hezbollah, however, was given a special permission to maintain its militia in order to continue fighting Israel in southern Lebanon). At these new prices, the optimal (i.e., lowest cost) combination of terrorism and politics that can produce a level of output equal to the isoquant is given by Q_1, where terrorist activity falls to v_1 and political activity rises to p_1.
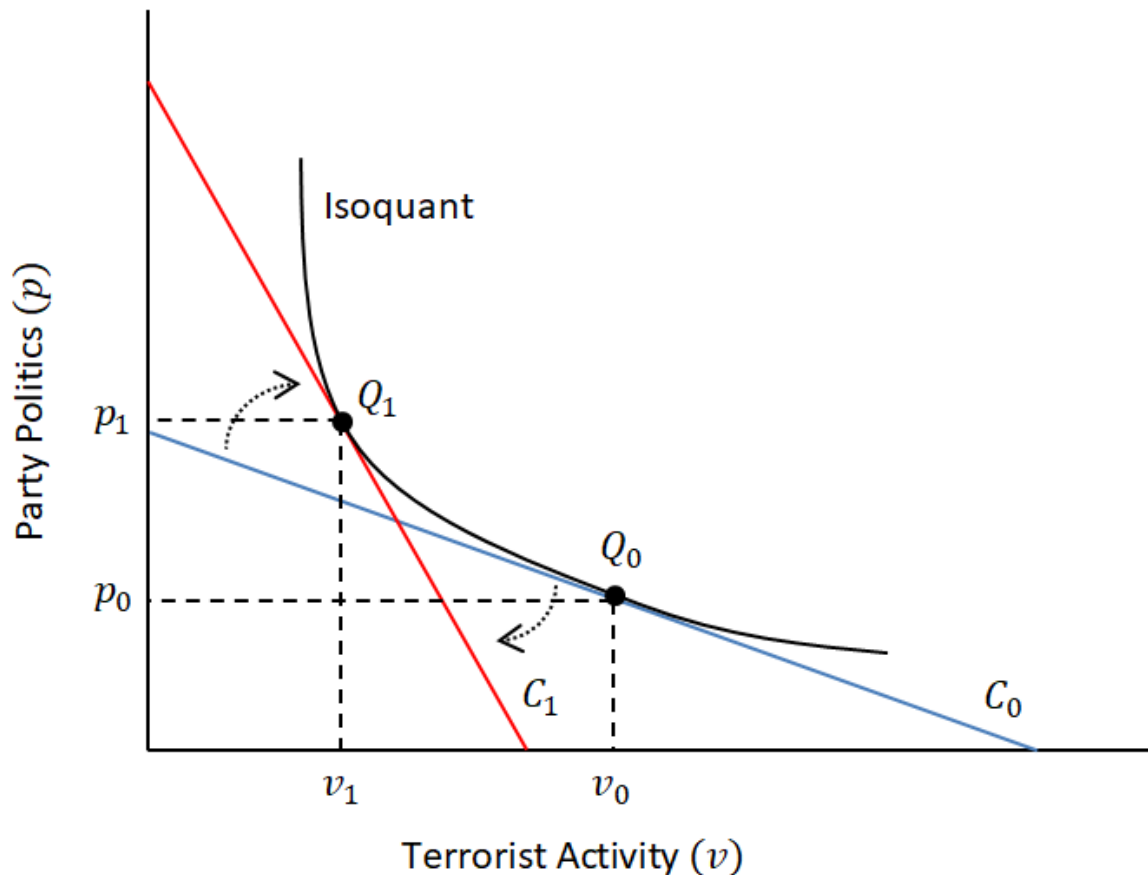

Figure 3.2: This diagram illustrates the cost-minimization problem facing a political organization. Assume that *party politics* and *terrorist activity* are two inputs that the organization can use to produce a given level of "output," such as the achievement of some political or ideological aim. The isoquant line (the production theory counterpart to the consumer's indifference curve) shows the combination of these two inputs that can produce a given quantity of output, where the slope give the marginal rate of technical substitution, the rate at which one input can be substituted for the other while keeping output constant. The isocost lines (the counterpart to the budget constraint in consumer theory), C_0 and C_1, show the combination of the two factors of production, party politics and terrorism, which cost the organization the same amount. The slope represents the ratio of the factor prices. At initial factor prices, C_0, the point of tangency between the isoquant line and the original isocost line, Q_0, gives the lowest-cost combination of terrorism and party politics that can produce the output level associated with the isoquant. Following a hypothetical change in the ratio of the factor prices, the isocost line shifts and the optimal input bundle becomes Q_1.

Hezbollah's has also demonstrated its skill with its extensive social welfare programs to its Shia constituents, often surpassing the Lebanese government's efforts in this regard. Its social service activities include rebuilding 5,000 homes in 82 villages in the aftermath of Operation Grapes of Wrath, a sixteen-day campaign by the Israeli military in 1996 attempting to stop rocket attacks on northern Israel by Hezbollah (Ranstorp (1998)). Funded mostly by Iran, its social contributions include "The Martyr Foundation," which gives financial compensation to the families of fighters killed by Israeli forces, and "The Islamic Health Committee," established in 1984, which builds schools, hospitals and pharmacies, and digs wells (Rabil (2012). These social undertakings have filled a social vacuum in Lebanon, and are a primary reason why the organization enjoys wide-spread grassroots support. It also explains its impressive political successes in the 1992 1996, 2000, and 2005 Lebanese parliamentary elections (Ranstorp (1998)). In the 2005 elections, the party won 14 parliamentary seats and, for the first time, became a member of the executive authority in Lebanon, making Hezbollah one of the only terror organizations in the world to not only manage a political party but also wield legitimate power within the government's executive authority (Pedahzur et al. (2008), 90).

The major operational changes which Hezbollah initiated in the 1990s–transition into the political sphere and taking on the role of the most efficient supplier of public goods in Lebanon–should not be interpreted as indicating a fundamental shift in the group's preferences, which have always *jihad* against Israel and an Islamization of the state. On the surface, it may appear that the radical shifts in tactics ushered in by *Intifah* and *Lebanonization*, such as focusing on developing its network of socio-economic institutions and winning over the hearts and minds of the populace, points to a transformation into a benign political actor. However, its true motives remain the creation of a political cover for its dual Islamic Resistance and anti-Israel mission. "In this respect, *Lebanonization* and *Infitah* are not about integrating the Hydra-like Hezbollah into Lebanon's political system but it is about a reverse integration, whereby society and the state would be integrated into Hezbollah's project" (Rabil (2012)). This shows how skillfully Hezbollah adapts to changing circumstances, exploiting the political system when it judges this to be a more efficient tactic than terrorist violence.

3.4.2   The Case of Hamas

Officially founded after the breakout of the first Palestinian *Intifada* in 1987, Hamas (which literally means "bravery," "zeal," or "courage" in Arabic but is also the acronym for "Islamic Resistance Move-

ment," the group's official name) is a direct offshoot of Egypt's Muslim Brotherhood.[5] Branches of the Muslim Brotherhood first appeared in the Gaza Strip and the West Bank in the 1950s, and in 1971 Sheikh Ahmed Yassin founded an affiliated organization called Congress (*Mujamah*) in Gaza. Yassin's movement found popular support in Gaza due to the establishment of a vast humanitarian social service network apparatus (*dawa*), including medical clinics, schools, charities, support for orphans, drug treatment centers, youth clubs, sports clubs and mosques (Berman and Laitin (2008)).

In contrast to its main rivals, the various factions operating under the PLO banner which are all secular and tend to have revolutionary socialist and Marxist-Leninist ideological leanings, Hamas combines Sunni Islamic fundamentalism with Palestinian nationalism.[6] Hamas's official charter emphasizes a radical, uncompromising, rejectionist stance with respect to Israel's existence, and the need to destroy Israel through *jihad*. Employing traditional anti-Semitic myths to demonize not only Jews but also the Jewish religion, Hamas therefore interprets the Israel-Palestinian conflict within a radical Islamic worldview, in stark opposition to the PLO's secularist orientation (Israel Ministry of Foreign Affairs (1988)).

The First Intifada broke out in 1987 as a spontaneous uprising against the Israeli occupation when, on December 8, 1987, a motor accident in Gaza involving an Israeli truck driver that left several Palestinians dead triggered riots (Abu-Amr (1993)). The organization carried out its first attack in 1989, kidnapping and executing two Israeli soldiers. Israel responded by arresting and imprisoning several high-ranking Hamas officials, including Yassin (Pedahzur et al. (2008), 91). In 1991, the movement officially established its military wing, the Izz ad-Din al Qassam Brigades, which during the 1990s conducted countless attacks against Israeli civilian and military targets. Following the abduction and killing of an Israeli police officer in December 1992 by members of the Izz ad-Din al Qassam Brigades, the Israeli government deported 400 Hamas leaders to Lebanon, where they came into close contact with Hezbollah leaders (Pedahzur et al. (2008), 91-92). This is consequential, because it was from these Hezbollah leaders that the Hamas militants received instruction on how to effectively employ suicide tactics, knowledge which they imparted

---

[5]The spiritual founder of the modern phenomenon of militant Salafi jihad was Sayyid Qutb (1906-1966), who was a leading member of the Egyptian Muslim Brotherhood in the 1950s and 1960s. An Egyptian, he insisted on the violent overthrow of the secular Egyptian government of Gamal Abdel Nasser. While Qutb had spent two years in the United States from 1948-1950 and despised the West, he had no interest in waging war against it. After he returned to Egypt from the US, Qutb published an essay called "The America I Have Seen," in which he lambastes secular, materialist American culture. It was only after he returned to Egypt that Qutb became an outspoken advocate of militant Islamism and the spiritual and intellectual leader of the Muslim Brotherhood. The extent to which Qutb's experience in the US was an impetus behind his embrace of radical Islamism is debated. His goal was simply to wage war against the "near enemy," the apostate government in his own country (Sageman (2004), 16). Qutb's influence spread throughout Salafi groups in his country, and his disciples strategized on how to effectively implement his vision of establishing an Islamic government in Egypt. In 1966, he was convicted of conspiracy to assassinate President Nasser and was executed by hanging. Qutb's legacy would live on, and it was one of his student's, Muhammad Abd al-Salam Faraj (1954-1982), who was the head of the Tanzim al-Jihad terror cell which assassinated President Anwar al-Sadat in 1981.

[6]The PLO includes Fatah, the dominant faction in the PLO (secular, left-wing nationalism); Popular Front for the Liberation of Palestine (Marxist-Leninist); Democratic Front for the Liberation of Palestine (Marxist-Leninist).

to their associates when they were permitted to return to Israel the following year due to international condemnation of the expulsion. Between 1993 and 1999, Hamas carried out 18 suicide attacks against Israel, and then 60 more during the Second Intifada (*Al-Aqsa Intifada*), which began in September 2000 (Pedahzur et al. (2008), 92).

Whether or not the movement should establish and operate a political wing was a contentious and hotly debated matter within the upper echelons of Hamas starting in 1992. Proponents in favor of the idea of the political transition argued that it would help Hamas gain political influence and serve as a tool for mobilizing support for Hamas and its Islamist ideology (Pedahzur et al. (2008), 92). Opponents of the idea contended that "legitimizing" itself through party politics would inevitably result in the movement compromising its core jihadist, rejectionist ideals. A party was ultimately established in November 1995, called "The Islamic National Salvation Party," though it remained a fringe and inconsequential movement on the Palestinian political scene for over a decade. The party refused to participate in the January 1996 Palestinian general elections, mainly because the Hamas leadership thought that participation would lend legitimacy to its rival, Arafat's Fatah party, and lend legitimacy to the Oslo peace process. In addition, Hamas risked losing significant public support had it participated in the election and lost to Fatah.

The non-military wing of the organization was nevertheless successful in embedding itself within Palestinian society, especially through its social welfare program (*dawa*), using the Muslim Brotherhood, its parent organization, as a model (Israel Ministry of Foreign Affairs (1993)). Hamas's annual budget during the 1990s ranged from $50 to $150 million, and it has been estimated that about 85% of its expenses were allocated to social welfare activities (Phillips (2017), 78). Islamic charities loosely affiliated with the movement run orphanages, kindergartens, health clinics, vocational training, among other services, and estimates suggest that by 2000 about 40% of social institutions in the West Bank were run by Islamic charities, both officially and unofficially affiliated with Hamas (Shitrit (2015), 71). Further, in 2003 65% of primary and middle schools in Gaza were Islamic, and it has been noted that at this time Hamas and other Islamic institutions were providing financial support to at least 120,000 individuals on a monthly basis (Shitrit (2015), 71). As discussed in (Berman and Laitin (2008)), offering such an extensive social welfare program works to the strategic advantage of militant groups like Hamas by providing extra motivation to members not to defect.

By 2005, Hamas had gained enough popular support that the leadership decided it was time to challenge Fatah in a general election. In the February 2006 Palestinian legislative election, Hamas showed its political prowess in a landslide victory, winning 74 out of 132 seats in the Legislative Council, decisively

defeating Fatah, which won only 45 seats (Karsh (2016)). These results were quickly interpreted as the end of the 40-year domination of the PLO over Palestinian politics, and a clear repudiation of Fatah, the political party built by Arafat (Erlanger (2006)).

Despite winning over the hearts and minds of the Palestinian people through its social welfare network, its transition into politics was not inevitable. After all, its raison d'être continued to be armed resistance in pursuit of all of Palestine, "from the River to the Sea," and by entering the political scene Hamas risked losing its core base of support who have a preference for violence and may feel that the group would be betraying its principles by transitioning (Acosta (2014)). What, then, gave Hamas the reassurance that it could enter politics without compromising its core support base, who have an internal preference for violence? I argue that this can be understood in terms of a reduction in the marginal benefit for violence by 2005, precipitated by the partial achievement of its goals. Acosta (2014) contends that partial outcome-goal achievement (as opposed to no achievement or full achievement) helps a militant group transition to party politics by putting it in a position to convince its base constituents that it has reached the beneficial limits of political violence and effort to achieve *complete* goal fulfillment requires a political transition.

The major political event that preceded Hamas's participation in the February 2006 Palestinian elections was the 2005 Israeli disengagement from Gaza. The unilateral Disengagement Plan was the withdrawal of the Israeli army, the eviction of Jewish residents, and the destruction of all Jewish settlements from the Gaza Strip in 2005. This was a controversial and contentious plan proposed by Prime Minister Ariel Sharon in 2003, accepted by the Knesset in February 2005, and executed in August 2005. This was a historic propaganda victory for Hamas, whose unrelenting terror campaign during the Second Intifada (2000-2005) was considered by its supporters to be the direct cause of the Israeli retreat. It left Hamas as the de facto ruler of Gaza, a level of success that bought it leeway with its constituency and allowed it to soften its stance on political engagement (Acosta (2014)). Exactly six months following the enactment of the Israeli disengagement from Gaza, Hamas achieved its stunning election victory.

In contrast to Hezbollah (discussed in Section 3.4.1), whose oscillation between violent and nonviolent means can best be explained by the relative health of the Lebanese political structure and the state's ability or lack thereof to impose costs on the organization's attempt to use its military wing as a tool to challenge the state's authority and construct a rival power center (i.e., a primarily "supply-side" consideration), I contend that Hamas's decision to transition into electoral politics, discussed above, is explained by a mix of "supply-side" and "demand-side" factors. On the supply side, the separation barriers constructed by Israel in the wake of the Second Intifada, one along the Green Line, separating the West Bank

123

from Israel, and a second along the entire Gaza Strip, have curbed Palestinian terrorism inside Israel-proper to historic lows. Palestinian suicide bombing terrorism, the dominant form of attack during the first years of the Second Intifada, quickly declined once the security barriers were constructed (Israel Ministry of Foreign Affairs (2008)).[7] Avi Dichter, the director of the Israel Security Agency (commonly known as *Shabak* or *Shin Bet*) from 2000 to 2005, remarked in 2006 that "[a]n absolute halt in terrorist activities has been noticed in the West Bank areas where the fence has been constructed" (National Christian Leadership Conference for Israel (2008)).

The success of the security fences in preventing Hamas from carrying out traditional attacks in Israel has induced two major shifts in Hamas's strategy, both of which stem from increases the organization's marginal costs of violence: first, rocket and mortar shell fire from the Gaza Strip became Hamas's preferred form of attack in the years following the construction of the separation barriers (Israel Ministry of Foreign Affairs (2013)), a clear instance of a terror group substituting one tactic for another given changes in relative costs. In 2007, Israel was hit by 2,433 projectiles from Gaza (including both rocket and mortar attacks), significant increases from prior years (Ahronheim (2018)). In 2008, during "Operation Cast Lead," the three-week armed conflict between Israel and Gaza militants, terror groups fired 3,557 projectiles, and then in 2012, during Operation Pillar of Defense, an eight-day armed conflict, Israel was struck by 2,771 rockets (Ibid.). In 2014, coinciding with Operation Protective Edge, Israel was struck by 4,897 projectiles (Ibid.). The second shift in Hamas's strategy in the past 15 years is Hamas's increased political activity, an event which I interpret to be influenced, to a certain extent, by the higher marginal costs at every level of violence faced by Hamas due to the success of the security barriers, which effectively prevent traditional terror activities inside the Green Line.

On the demand side, the 'partial outcome-goal achievement' put forth by Acosta (2014) implies a decrease in the marginal productivity of violence relative to nonviolent, political approaches, incentivizing a substitution away from violence towards nonviolent means (Raynold (2018)). Following Israel's withdrawal from Gaza in 2005 and Hamas's takeover of the territory, which was a partial achievement of its goals, Hamas found itself with enough domestic leverage where it could make the case to its constituents that it had reached the productive limit of its terror campaign, and effort to accomplish further goals required an official transition into politics. This is a credible rational choice explanation of Hamas's tran-

---

[7]From a peak of 60 suicide attacks in 2002, the high point of the Second Intifada, with the creation of the security barriers Palestinian suicide attacks in Israel declined to 26 in 2003, 15 in 2004, 5 in 2005, 6 in 2006, and subsequently to a maximum of one or two per year (Jewish Virtual Library (2008)). Likewise, from a peak of about 457 in 2002, the number of Israeli fatalities from terror attacks has diminished to never more than a couple dozen per year in the aftermath of the Intifada, which ended in 2005 (Jewish Virtual Library (2008); Israel Ministry of Foreign Affairs (2014)).

sition to party politics.

An interesting demand-side shock noted in the literature, which has had the effect of inducing short-term spikes in Hamas's terrorist activity, is the so-called "spoiler effect". Proposed by Kydd and Walter (2002), the idea is that during peace negotiations between a state and a "moderate" militant faction, a rival "extremist" faction may attempt to sabotage the peace process by engaging in terrorism that undermines the government's confidence in the ongoing negotiations. Bueno de Mesquita (2005) finds empirical evidence for this so-called spoiler effect within the context of the Oslo peace process in the 1990s, the set of agreements between Israel and the PLO that were intended to arrive at a peace settlement between the two sides. The first Oslo accord was signed in September 1993, and subsequent meetings took place that aimed to reach a resolution based around the 'land for peace' framework. Spoiler violence is expected to occur prior to, or just after, the major agreements (Bueno de Mesquita (2005)); a list of such spoiler opportunities is displayed in Table 3.1. Figure 3.3 shows monthly Palestinian terror attacks for the period between Oslo and the start of the Second Intifada (1993-2001), with the key spoiler opportunities noted. Figure 3.4 shows monthly attacks for the following decade.

Examining Figure 3.3, we see spikes in violence surrounding many of the events. There is a spike prior to the Cairo Agreement (which is also the immediate aftermath of the signing of the Oslo Accord). There are also spikes in violence before and after the Israel-Jordan peace treaty (October 1994). The March 1996 spike, which included the murder of 58 Israelis in the span of one week, was instrumental in the election of hawkish Israeli politician Benjamin Netanyahu and his Likud Party, defeating left-wing incumbent Prime Minister Shimon Peres two months later, an event celebrated by Hamas which prefers hard-line Israeli governments that reject the peace process (Karsh (2016)). Spikes can also be seen before the Hebron Agreement (January 1997), Wye River Memorandum (October 1998), Sharm El Sheikh Memorandum (September 1999), and the Camp David Summit (July 2000). There was also a sustained increase in violence preceding and following the Taba Summit (January 2001), and the February 2001 Israeli elections, although this coincides with the Second Intifada, which began in September 2000, so it is unclear whether Palestinian violence at this time was directed specifically at those spoiler opportunities. Either way, the terror campaign in late 2000 was a boon for the hawkish candidate, Ariel Sharon, who won a landslide victory in the February 2001 Israeli prime ministerial elections. Sharon suspended peace negotiations with Arafat soon after. In Figure 3.4, we see a spike preceding the "Road Map" for peace plan (July 2002), and an overall upsurge in attacks from December 2006 to September 2008, during which time Israeli Prime Minister Ehud Olmert and Palestinian Authority President Mahmoud Abbas met 36 times.

Table 3.1: "Spoiler" opportunities in the Israel-Palestinian peace process

| Date	Event
September 1993	Oslo Accords
May 1994	Cairo Agreement
October 1994	Israel-Jordan peace treaty
November 1995	Oslo II
February 1996	Palestinian legislative election
May 1996	Taba negotiations (delayed) and Israeli general election
January 1997	Hebron Agreement
October 1998	Wye River Memorandum
May 1999	Israeli general election
September 1999	Sharm El Sheikh Memorandum
July 2000	Camp David Summit
January 2001	Taba Summit
February 2001	Israeli prime ministerial election
July 2002	"Road Map" for peace
December 2006-September 2008	Israeli-Palestinian talks
September 2010	Israeli-Palestinian direct negotiations
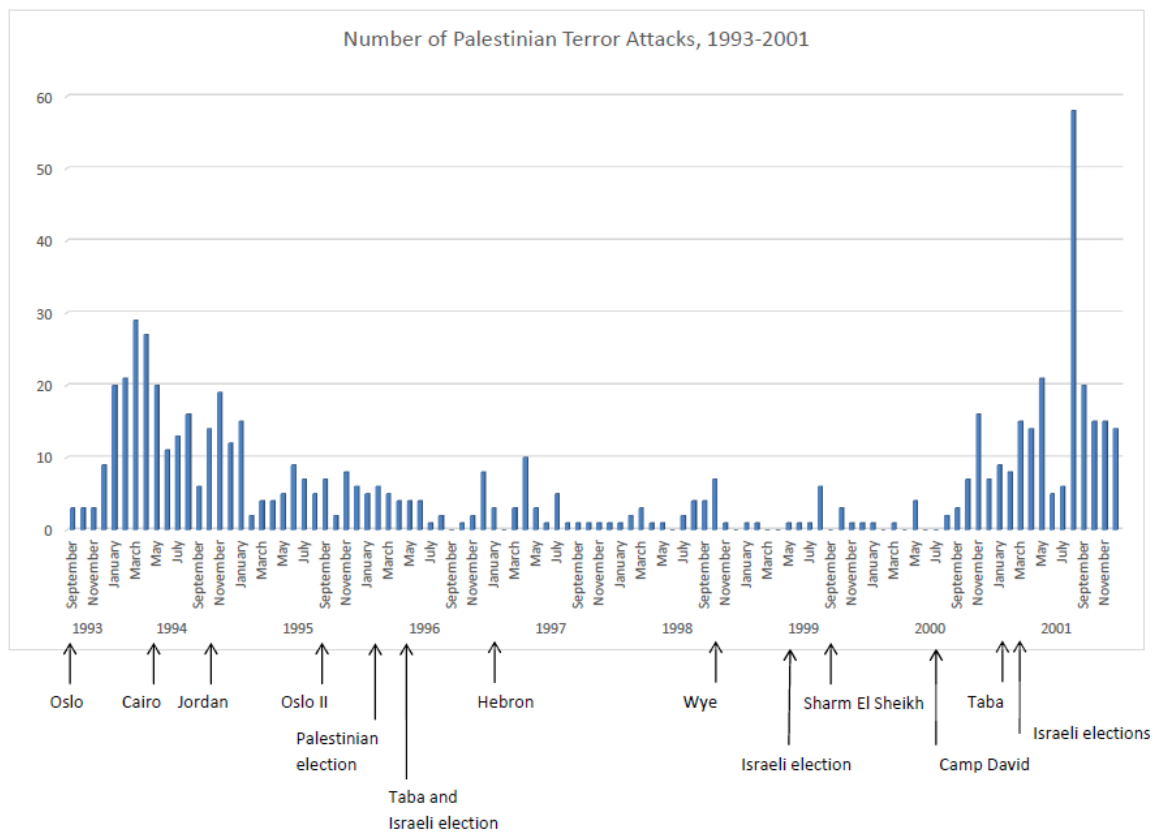
Figure 3.3: Palestinian terror attacks, with key "spoiler" opportunities noted.
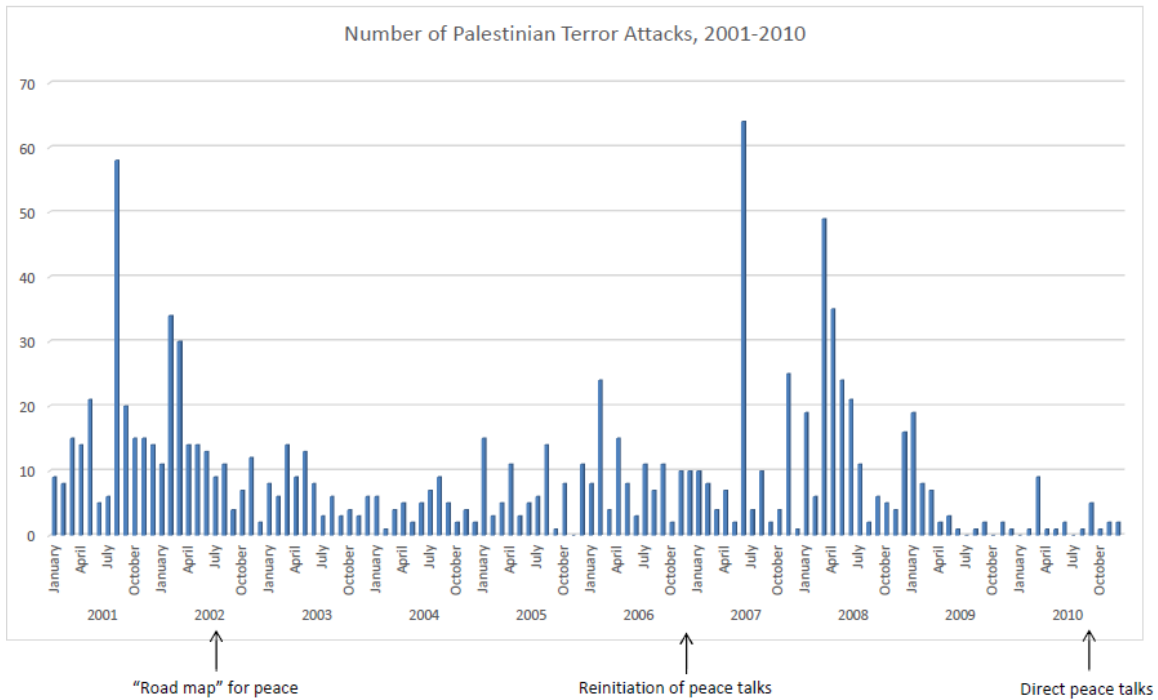
126

Figure 3.4: Palestinian terror attacks, with key "spoiler" opportunities noted.

3.4.3 The Case of the Basque Separatist Movement

"We know that ETA cannot destroy the Spanish State...But the Spanish State cannot destroy

us either."

–1988 interview by an ETA spokesman describing the group's strategy of undertaking a "war

of attrition" against the Spanish state, quoted in Unzueta (1988), 251.

The history of Basque terrorism, and its association with nonviolent political activities, is highly complex and only a brief summary will be provided here. As a case study, however, the story of the interplay between politics and terrorism by the Basque movement is compelling because its intricacies of the plot–which include adapting to different Spanish regime changes, several internal splits, changes in strategy, negotiations with almost every democratic government in Madrid, several ceasefires with the Spanish government, and many military defeats at the hands of Spanish forces (Sánchez-Cuenca (2009))– exemplify the strategic planning undertaken by each side in a long-running separatist insurgency.

The Basques are an ethnic group indigenous to Basque Country (*Euskal Herria*), a small region (currently with a population of about 2.1 million people) located in northern Spain and southern France.

127

The modern Basque nationalist-separatist movement, which dates back to the 1890s, has as a common denominator a focus on the cultural, political, and ethnic unity of the Basque people, and the claim to Basque Country as their legitimate homeland. Basque nationalism emerged as a reaction to two significant historical events: 1) the wave of industrialization in the late 19th century, which precipitated mass immigration to Basque Country from other regions of Spain (Sánchez-Cuenca (2009)); this had the effect of making the native Basques more self-aware of their unique culture and language (Pedahzur et al. (2008), 97). And 2) the defeat of Basque traditionalists/monarchists, known as *Carlistas* in the Third Carlist War (1872-1876); this resulted in the loss of local political, economic, and cultural autonomy for the Basques (referred to in Spanish as *fueros*) (Sánchez-Cuenca (2009)).

Basque political violence finds its roots in the period of the Franco regime (1939-1975). The Basques suffered persecution under Franco, who attempted to suppress all expressions of Basque culture, including its distinctive language (Pedahzur et al. (2008), 97). The ETA (*Euskadi ta Askatasuna*, meaning "Basque Country and Freedom") was founded in 1959 by a group of students dissatisfied with the moderate, passive policy promoted by the Basque Nationalist Party (PNV), organized in 1892, which was and still is the dominant political party in Basque Country. The PNV has always been internally divided between a moderate faction that promotes autonomy within Spain, and a radical faction that fights for full independence (Sánchez-Cuenca (2009)).

Before it embarked on a serious terrorism campaign against the Spanish regime, however, the ETA organized several assemblies during which it debated its precise ideology, goals, and methods. There were two main factions. First, there were the "culturalists" (Pedahzur et al. (2008), 98) who understood the conflict primarily as an ethno-nationalist struggle for independence, a nationalist ideology similar to its counterparts in Northern Ireland, Palestine, etc. And second, there were the "Marxists" who understood the conflict as a class struggle. There was also an internal debate over the tactics that should be used in the struggle, whether peaceful protest or terrorism. The advocates for armed resistance won, and the ETA launched its first major attack in 1968, beginning a spiral of violence that lasted for over four decades (Sánchez-Cuenca (2009)).

In 1968 the ETA set out on a terrorism campaign with the goal of provoking a response from the Franco regime, which obliged. Repression by the Spanish government had the intended effect of consolidating popular support for the militarist faction of the ETA, which was still in the midst of a heated internal debate with the moderate faction that promoted a nonviolent political strategy to achieving autonomy. The government response included a highly-publicized trial against ETA militants in 1979 (the

so-called Burgos trial) that triggered international solidarity and won local support for armed struggle (Sánchez-Cuenca (2009)). This seems to be an unambiguous example of the way in which violence perpetrated against a minority group can lead to a desire for revenge and hence an increase in the perceived marginal productivity of violence (Raynold (2018)). As discussed in Section 3.2, if the marginal cost curve is not affected, then whether a nonviolent group becomes violent depends on the magnitude of the shift in the marginal productivity curve, which in the case of the Basques seems to have occurred. As noted in Pedahzur et al. (2008)[8] concerning the Burgos trial where fifteen of the sixteen defendants were convicted, "[t]he striking thing about this episode is that ETA earned widespread support among Basques because of Franco's willingness to invoke martial law and the repressive apparatus of an authoritarian state."

The most important split in the ETA's history occurred in 1974, a split caused by disagreement over whether politics or armed struggle should be the focus of the group following the death of Franco, who by this time was very ill (Sánchez-Cuenca (2009)). At this time, the movement divided into two different organizations, one called ETA political-military, referred to as ETA(pm), that sought to pursue its goals through a combination of violent tactics and political tactics, and the other ETA military ETA(m), that insisted that political participation would distract from the goals of the movement and hence would be ultimately counterproductive (Sánchez-Cuenca (2009)). In 1975 a democratic government was established in Spain following Franco's death. This not only led to the legalization of political parties, but, critically, implied a decentralization of the central government that gave the Basques extensive regional autonomy in Basque Country.

Despite (or because of) the improved political situation that allowed for the formation of a Basque political party system, leading many in the ETA to conclude that armed struggle was henceforth unnecessary, the hardline ETA(m) stepped up its military activity during this time. While on the one hand the moderate ETA(pm) voluntarily disarmed in the early 1980s, its members turning their complete attention to nonviolent political action (Pedahzur et al. (2008), 101), on the other hand the ETA(m) embarked on a prolonged war of attrition against the Spanish government that lasted for the next few decades (LaFree et al. (2012)). This somewhat paradoxical phenomenon, namely the escalation of violence by ETA(m) following the 1975 democratization of Spain, can be logically explained by the theory put forth by Bueno de Mesquita (2005), who posits that

> [a] terror group composed exclusively of extremists engages in more terror than one composed of both moderates and extremists...When the government offers concessions, only the

---

[8]p. 99

moderates are willing to accept. This leaves the extremists in control of the terrorist organization. Once the influence of the moderates is removed, the extremists choose to direct more of the available resources toward terrorist activities.[9]

ETA's war of attrition would continue for the next few decades, with sporadic cycles of intense violence against the state interspersed with periods of dialogue and negotiation with the state. Its preferred means of attack were bombing operations all over Spain, assassinations of politicians, and kidnappings. Like Hamas, Hezbollah, IRA, and 19th of April Movement (among others), the ETA operated a political wing, *Herri Batasuna* (HB), which was eventually outlawed by Spain's Supreme Court in 2002 for its association with ETA.

When it was all said and done, ETA killed 829 people, including 340 civilians, between 1968 and 2010 (Ministerio del Interior, Gobierno de España (2010)). Despite its impressive durability and longevity, the ETA's armed struggle accomplished nothing in terms of achieving full Basque independence in Basque Country. This is in contrast to groups like Hezbollah and Hamas, whose persistent insurgencies against the Israeli military in southern Lebanon and Gaza, respectively, can be credited with having compelled Israel to retreat from these regions. The 1978 statute granting local autonomy to Basque Country ushered in a status quo deemed reasonable by most but which the ETA(m) found to be wholly unacceptable, remains in effect today. Unlike "The Troubles" in Northern Ireland, a conflict that bears a resemblance to the Basque conflict due to the similar war of attrition military strategy employed by both IRA and ETA, the ETA and HB never managed to reach a political settlement with Spain like the agreement achieved between the Provisional IRA/*Sinn Fein* and the Northern Ireland Assembly (Pedahzur et al. (2008), 103). After several declared ceasefires over the years, in May 2018 the ETA announced that it has completely dismantled all its structures, both political and military, thus bringing to a close Western Europe's last major armed insurgency (Reuters (2018)).

3.4.4 The Case of the *Irgun* and Revisionist Zionism

In the decades leading up to the independence of the State of Israel in 1948, there existed numerous Zionist paramilitary organizations which fought on behalf of the Jewish population in Mandatory Palestine. These groups differed from one another in terms of ideology and goals. Zionism, the political

---

[9]This model also explains the increase in violence by the extremist factions Hamas and Palestinian Islamic Jihad which coincided with the decision by the relatively moderate PLO to negotiation with Israel in the Oslo peace process of the 1990s. When the moderates accept concessions from the state, they were drawn away from violence, leaving the extremists in control of the armed struggle.

and nationalist movement of the Jewish people seeking the re-establishment of a sovereign Jewish nation in what is now Israel, traces its history to the Austro-Hungarian journalist Theodor Herzl. In 1897, in response to rising anti-Semitism in Europe and Russia, Herzl published a book entitled "The Jewish State," in which he encouraging the Jews of Europe to immigrate to (what was then) Ottoman Palestine and pursue Jewish national self-determination within the borders of the biblical Land of Israel. The Jewish immigrant population in Palestine grew steadily throughout the first half of the 20th century.[10]

From the start the Zionists were perceived as a threat to the Palestinian Arabs' own political ambitions, who conducted raids against the Jews in retaliation (Pedahzur et al. (2008), 79). This was the catalyst for the Jews to form their own paramilitary forces which would protect the Jewish settlements and kibbutzim from Arab attacks. The first such Jewish self-defense organization was *Bar-Giora*, founded in 1907. This group was supplanted within a couple years by *HaShomer* ("The Watchman") organization, which lasted until the outbreak of WWI; neither organization consisted of more than 100 members. The culmination of these self-defense efforts was the *Haganah* ("Defense"), founded in 1920 shortly after the establishment of the British Mandate of Palestine.

The *Haganah*, the largest Jewish paramilitary force and the direct forerunner of the IDF, was dominated by secular, socialist ideologues and was the military wing of the left-wing Jewish political establishment in Palestine. The *Haganah* operated according to an official policy of *Havlagah*, "restraint," meaning its fighters were directed to only defend Jewish settlements in self-defense and to not take any offensive action against Arabs. This self-imposed policy of passivity was strongly objected to by many within the *Haganah*, who in the aftermath of the 1929 Arab Riots which left 133 Jews killed, sought a more aggressive and militarist approach in responding to Arab attacks against Jews. In 1931 the militant elements of the *Haganah* split off and founded the *Irgun* (the Hebrew word for "Organization"; the group is also referred to as *Etzel*, the acronym of the group's official name "The National Military Organization in the Land of Israel.") In opposition to the dominant, socialist "Labor Zionism" ideology of the *Haganah*, the *Irgun* had a distinctively right-wing, secular, nationalist ideology, the "Revisionist Zionism" branch of the Zionist movement founded by Irgun commander Ze'ev Jabotinsky.

In response to the 1936-1939 Great Arab Revolt, a violent Arab nationalist uprising against the Jewish population that was aimed at reversing the British policy of permitting mass Jewish immigration to

---

[10]In 1922, the first year for which accurate census data exist, the Jewish population of Palestine was 83,790 (12.91% of total population), compared to a Muslim population of 486,177 ((74.91% of total)). A decade later, 1932, the Jewish population had risen to 192,137 (19% of total population), by 1942 the Jewish population was 484,408 (31% of total).Palestine and of Inquiry on Jewish Problems in Palestine (1946)

Palestine, the *Irgun* initiated a terrorist campaign against the Palestinian population and the British Army, launching around 60 attacks during the period of the three-year revolt (Perliger and Weinberg (2003)). In 1939 the organization then began carrying out terrorist attacks against the British establishment in Palestine, with the goal being a complete British withdrawal from Palestine, in response to the "White Paper of 1939," a policy publication issued by Neville Chamberlain's government that restricted Jewish immigration to Palestine to 75,000 for 5 years. The most notorious attack carried out during this campaign by the *Irgun* was the July 22, 1946 King David Hotel bombing which left 91 people dead and 46 wounded.

In 1940, a radical faction within the *Irgun*, led by Avraham ("Yair") Stern, split off and formed an organization called *Lehi* (acronym for "Fighters for the Freedom of Israel"). In 1940, the *Irgun*'s commander, Ze'ev Jabotinsky, decided to cease the campaign against the British and actively support the British in its fight against the Nazis. Yair Stern and his followers objected, however, considering the British an even greater foe to the Jews than the Nazis due to British restrictions against the Jews in Palestine. *Lehi*'s primary goal was thus the expulsion of the British by violent means; its most notable terrorist attack to this end was the assassination in Cairo in 1944 of Lord Moyne, British Minister Resident in the Middle East.

The subsequent history of these two ultra-nationalist, militarist Zionist organizations, *Irgun* and *Lehi*, sheds light on the conditions under which a transformation from terrorism to party politics may take place. In May, 1948, the State of Israel gained its independence, and efforts then arose among the political establishment to integrate into a single military all the rival paramilitary factions. Creating a unified army to represent the new state was seen as essential in successfully fending off the numerous Arab state armies which had declared war against Israel following independence. In light of the unwillingness of the two hawkish organizations, *Irgun* and *Lehi*, to cede their independence and accept integration into the national army, the Israel Defense Forces (the successor to the *Haganah*), the Israeli government, headed by David Ben-Gurion, began a campaign to quash all rival Jewish paramilitary faction in the state. The *Irgun* was suppressed through the Altalena Affair, when the IDF bombarded and sank the *Altalena*, a ship carrying *Irgun* members smuggling into Israel weapons from France, off the coast of Tel Aviv. Subsequently, the IDF forcibly disbanded the remaining paramilitary elements of the *Irgun* and the *Lehi*, integrating its members into the IDF (Pedahzur et al. (2008), pp. 83-84).

Rather than covertly continuing its clandestine militarism, former members of these Revisionist Zionist groups transitioned into party politics. The leader of the *Irgun* from 1943 until its demise in 1948, Menachem Begin, established the *Herut* ("Freedom") political party in 1948. This party was the most influential political representative of the secular right-wing nationalist hawkish constituency in Israel.

In the 1949 Parliamentary elections, *Herut* won 14 seats and was the fourth largest party in Parliament, and starting in the late 1950s it was the second largest party, after *Labor* (Pedahzur et al. (2008), 85). In 1973, Menachem Begin and Ariel Sharon, in an alliance with other right-wing parties including *Herut*, formed the *Likud* party, which in 1988 assumed total control of the alliance when the other parties officially merged into it. The *Likud* first won a majority of seats in Parliament in 1977 (also marking the first time a right-wing party had won a plurality of votes) with Begin elected as prime minister.

3.5 Conclusion

This study argues that, contrary to some popular perception, the distinction between terrorism and party politics is not always sharply defined. As we have seen, the two often operate in close proximity to one another. For example, political parties directly create a terrorist group when the need arises, as in the case of the Lebanese Civil War. Another type of relationship is the reverse, when a terrorist group establishes a political wing that is uses as a tool to advance their cause at the ballot box, as has been the case with Hamas, Hezbollah, PKK and the ETA. In many examples, including Hamas, Hezbollah, PKK, and ETA, the connection between a terrorist group and a political party is characterized by a cyclical pattern, where the organization adjusts its tactics based on changing incentives.

The theoretical framework developed in Section 3.2 describes the economics at play in transformations between terrorism and politics. Consistent with rational behavior, an organization can be expected to engage in terror activities if and only if it perceives its optimal level of violence is positive. As such, the interplay between terrorism and party politics for any historical case ought to be examined by considering the exogenous (or endogenous) forces at work that shift the marginal benefit and/or marginal cost curves in ways that affect the optimal level of violence.

To minimize as much as possible the extent to which political organizations resort to violence in pursuit of their goals (assuming this is an objective of policy-makers), states ought to focus on preventing certain catalysts that may lead to a positive optimal level of violence. The integrity of state institutions, as well as the rule of law, are probably the most important factors determining whether a political organizations finds it beneficial to engage in terrorism. On the supply side, states should concentrate on maintaining an effective law enforcement apparatus that imposes high costs on terrorist activity while respecting civil rights. On the demand side, states can raise the opportunity costs of terrorism by improving civil and political institutions that generate non-violent means of political expression. In addition, states

should be wary of needlessly provoking a minority sect, as this often has the adverse effect of radicalizing the group, which may then seek revenge through a terrorist campaign.

Bibliography

Abadie, Alberto, "Poverty, political freedom, and the roots of terrorism," *American Economic Review*, 2006, *96* (2), 50–56.

Abu-Amr, Ziad, "Hamas: a historical and political background," *Journal of Palestine Studies*, 1993, *22* (4), 5–19.

Acosta, Benjamin, "From bombs to ballots: When militant organizations transition to political parties," *The Journal of Politics*, 2014, *76* (3), 666–683.

＿ , "Dying for survival: Why militant organizations continue to conduct suicide attacks," *Journal of Peace Research*, 2016, *53* (2), 180–196.

＿ , "Revolutionary and Militant Organizations Dataset (REMOD) 1980-2013 Codebook," 2016.

＿ **and Steven J Childs**, "Illuminating the global suicide-attack network," *Studies in Conflict & Terrorism*, 2013, *36* (1), 49–76.

Ahronheim, Anna, "IDF Annual Report: 1,000 Rockets Fired at Israel from Gaza in 2018," *The Jerusalem Post*, Dec 2018.

Al-'Ubaydi, Muhammad, Nelly Lahoud, Daniel Milton, and Bryan Price, "The Group That Calls Itself a State: Understanding the Evolution and Challenges of the Islamic State," *Combating Terrorism Centre at West Point*, 2014, p. 102.

Alexander, Yonah and Michael S. Swetnam, *Usama bin Laden's al-Qaida: Profile of a Terrorist Network*, Ardsley, New York: Transnational Publishers, 2001.

Anderton, Charles H, John R Carter, and Others, "Principles of conflict economics," *Cambridge UP*, 2009.

Asal, Victor and R. Karl Rethemeyer, "The nature of the beast: Organizational structures and the lethality of terrorist attacks," *Journal of Politics*, 2008, *70* (2), 437–449.

Asal, Victor H., Gary A. Ackerman, and R. Karl Rethemeyer, "Connections can be toxic: Terrorist organizational factors and the pursuit of CBRN weapons," *Studies in Conflict and Terrorism*, 2012, *35* (3), 229–254.

＿ **, Hyun Hee Park, R. Karl Rethemeyer, and Gary Ackerman**, "With Friends Like These: Why Terrorist Organizations Ally," *International Public Management Journal*, 2011, *19* (1), 1–30.

Azam, Jean-Paul and Alexandra Delacroix, "Aid and the delegated fight against terrorism," *Review of Development Economics*, 2006, *10* (2), 330–344.

＿ **and Véronique Thelen**, "The roles of foreign aid and education in the war on terror," *Public Choice*, 2008, *135* (3-4), 375–397.

Barrett, Richard, *The Islamic State*, Soufan Group, 2014.

Basuchoudhary, Atin and William F Shughart, "On ethnic conflict and the origins of transnational terrorism," *Defence and Peace Economics*, 2010, *21* (1), 65–87.

Benner, Katie, "Bin Laden's gone, but what about al Qaeda's finances?," may 2011.

Berman, Eli, "Sect, subsidy, and sacrifice: an economist's view of ultra-orthodox Jews," *The Quarterly Journal of Economics*, 2000, (115.3).

$\_$, *Radical, Religious and Violent* 2009.

$\_$ **and David D Laitin**, "Religion, terrorism and public goods: Testing the club model," *Journal of public Economics*, 2008, *92* (10), 1942–1967.

Blomberg, S Brock and Gregory D Hess, "The Lexus and the olive branch: Globalization, democratization and terrorism," 2005.

Borgatti, S.P., M.G. Everett, and L.C. Freeman, "Ucinet for Windows: Software for Social Network Analysis.," 2002.

Box-Steffensmeier, Janet M and Bradford S. Jones, *Event history modeling: A guide for social scientists*, New York: Cambridge University Press., 2004.

Bruno, Greg, "Inside the Kurdistan Workers Party (PKK)," *CFR. org, October*, 2007, *19.*

Byman, Daniel, *Deadly Connections: States That Sponsor Terrorism*, Cambridge: Cambridge University Press, 2005.

Cameron, A. Colin and Pravin K. Trivedi, "Count Panel Data," *The Oxford Handbook of Panel Data*, 2013.

Carter, David B, "A Blessing or a Curse? State Support for Terrorist Groups," *International Organization*, 2012, *66* (1), 129–151.

Center for Systemic Peace, "State Fragility Index and Matrix 2016," 2016.

Cohen, David S, "Remarks of Under Secretary for Terrorism and Financial Intelligence David S. Cohen," oct 2014.

Database, Global Terrorism, "National Consortium for the Study of Terrorism and Responses to Terrorism (START)," 2016.

de Mesquita, Ethan Bueno, "Conciliation, commitment and counterterrorism: A formal model," *International Organization*, 2005, *59* (1), 145–176.

Ekelund Jr, Robert B., Robert F. Hébert, and Robert D. Tollison, *The market for Christianity* 2006.

Enders, Walter and Paan Jindapon, "Network externalities and the structure of terror networks," *Journal of Conflict Resolution*, 2010, *54* (2), 262–280.

Erlanger, Steven, "Hamas Routs Ruling Faction, Casting Pall on Peace Process," *The New York Times*, Jan 2006.

Eubank, William and Leonard Weinberg, "Terrorism and democracy: Perpetrators and victims," *Terrorism and political violence*, 2001, *13* (1), 155–164.

FATF Report, "Financing of the Terrorist Organisation Islamic State in Iraq and the Levant (ISIL)," Technical Report February, Financial Action Task Force 2015.

Force, Financial Action Task, "Financing of the Terrorist Organization Islamic State in Iraq and the Levant (ISIL)," *FATF, Paris*, 2015.

Freytag, Andreas, Jens J Krüger, Daniel Meierrieks, and Friedrich Schneider, "The origins of terrorism: Cross-country estimates of socio-economic determinants of terrorism," *European Journal of Political Economy*, 2011, *27*, S5–S16.

Fund for Peace, "Fragile states index 2015," 2015.

Gaibulloev, Khusrav, James A Piazza, and Todd Sandler, "Regime types and terrorism," *International organization*, 2017, *71* (3), 491–522.

Gandel, Stephen, "Will Osama's Death Bankrupt al-Qaeda?," may 2011.

Greene, William, "Fixed effects and bias due to the incidental parameters problem in the tobit model," *Econometric Reviews*, 2004, *23* (2), 125–147.

Gunaratna, Rohan, *Inside Al-Qaeda: Global Network of Terror*, New York: Berkley Books, 2003.

Hamzeh, Ahmad Nizar, *In the path of Hizbullah*, Syracuse University Press, 2004.

Hoffman, Bruce, "The Changing Face of Al Qaeda and the Global War on Terrorism," *Studies in Conflict and Terrorism*, 2004, *27* (6), 549–560.

_ , *Inside Terrorism*, revised an ed., New York: Columbia University Press, 2006.

Horowitz, Michael C, "Nonstate Actors and the Diffusion of Innovations : The Case of Suicide Terrorism," *International Organization*, 2010, pp. 33–64.

Horowitz, Michael C., "The Rise and Spread of Suicide Bombing," *Ssrn*, 2015.

_ **and Philip B.K. Potter**, "Allying to Kill: Terrorist Intergroup Cooperation and the Consequences for Lethality," *Journal of Conflict Resolution*, 2014, *58* (2).

Huntington, Samuel P, "The clash of civilizations and the remaking of world order," 1996.

Iannaccone, Laurence R, "Sacrifice and stigma: reducing free-riding in cults, communes, and other collectives," *Journal of political economy*, 1992, *100* (2), 271–291.

_ , "Why Strict Churches Are Strong Author (s): Laurence R . Iannaccone Source : American Journal of Sociology , Vol . 99 , No . 5 (Mar ., 1994), pp . 1180-1211 Published by : The University of Chicago Press Stable URL : https://www.jstor.org/stable/278114," 1994, *99* (5), 1180–1211.

_ **and Eli Berman**, "Religious extremism: The good, the bad, and the deadly," *Public choice*, 2005, pp. 109–129.

Israel Ministry of Foreign Affairs, "The Covenant of the Islamic Resistance Movement - Hamas," August 18, 1988.

_ , "HAMAS-The Islamic Resistance Movement," January 1, 1993.

_ , "Anti-Israeli Terrorism in 2007 and its Trends in 2008: Overview," June 2008.

_ , "The Hamas terror war against Israel," 2013.

_ , "Victims of Palestinian Violence and Terrorism since September 2000," 2014.

Jewish Virtual Library, "Terrorism Against Israel: Palestinian Suicide Attacks," 2008.

Jones, Seth G. and Martin C. Libicki, "How Terrorist Groups End: Lessons for Countering al-Qaida," Technical Report, RAND Corporation, Santa Monica, California 2008.

Jones, Seth G, James Dobbins, Daniel Byman, Christopher S Chivvis, Ben Connable, Jeffrey Martini, Eric Robinson, and Nathan Chandler, *Rolling Back the Islamic State*, Santa Monica, CA: RAND Corporation, 2017.

Joseph, J, *Turkey and the European Union: internal dynamics and external challenges*, Springer, 2006.

Karmon, Ely, *Coalitions Between Terrorist Organizations: Revolutionaries, Nationalists and Islamists*, Boston: Brill Academic Pub, 2005.

Karsh, Efraim, *The Oslo Disaster*, Begin-Sadat Center for Strategic Studies, 2016.

Khoury, Jack and Noa Landau, "Israel Accuses Hezbollah of Helping Hamas Establish Military Presence in Lebanon," jun 2018.

Krieger, Tim and Daniel Meierrieks, "What causes terrorism?," *Public Choice*, 2011, *147* (1-2), 3–27.

Krueger, Alan B, *What makes a terrorist?: Economics and the roots of terrorism: Lionel Robbins Lectures*, Princeton University Press, 2007.

Krueger, Alan B., *What Makes a Terrorist: Economics and the Roots of Terrorism*, Princeton University Press, 2008.

Krueger, Alan B and David D Laitin, "Kto kogo?: A cross-country study of the origins and targets of terrorism," *Terrorism, economic development, and political openness*, 2008, pp. 148–173.

___ **and Jitka Maleckova**, "Education, poverty, political violence and terrorism: is there a causal connection?," Technical Report, National Bureau of Economic Research 2002.

Kuperwasser, Yossi, "Palestinian Payments to Incarcerated Terrorists and Martyrs' Families Rise in 2017," jul 2017.

Kurrild-Klitgaard, Peter, Mogens K Justesen, and Robert Klemmensen, "The political economy of freedom, democracy and transnational terrorism," *Public Choice*, 2006, *128* (1-2), 289–315.

Kushner, Harvey W., *Encyclopedia of Terrorism*, Thousand Oaks, California: Sage Publications, 2003.

Kydd, Andrew and Barbara F Walter, "Sabotaging the peace: The politics of extremist violence," *International Organization*, 2002, *56* (2), 263–296.

LaFree, Gary, Laura Dugan, Min Xie, and Piyusha Singh, "Spatial and temporal patterns of terrorist attacks by ETA 1970 to 2007," *Journal of Quantitative Criminology*, 2012, *28* (1), 7–29.

Lai, Brian, ""Draining the Swamp": An Empirical Examination of the Production of International Terrorism, 1968-1998," *Conflict Management and Peace Science*, 2007, *24* (4), 297–310.

Laub, Zachary, "The Islamic State," aug 2016.

Letamendia, Francisco, *Historia del nacionalismo vasco y de ETA*, R & B Ediciones, 1994.

Martin, Gus, *Understanding terrorism: Challenges, perspectives, and issues*, SAGE publications, 2017.

Memorial Institute for the Prevention of Terrorism (MIPT), "Terrorist Organization Profiles (TOPS)," 2008.

Ministerio del Interior, Gobierno de España, "Victims of ETA," 2010.

Moghaddam, Assaf, "Motives for Martyrdom of Suicide Attacks," *Critique*, 2009, *33* (3), 46–78.

Morales, Kendrick, Prosper Raynold, and Jing Li, "The empirical relationship between commitment enhancement devices and terrorism," *Applied Economics*, 2018, *50* (50), 5366–5380.

National Christian Leadership Conference for Israel, ""Stats Show Anti-Terrorism Fence Highly Effective"," 2008.

National Consortium for the Study of Terrorism and Responses to Terrorism (START), "Global Terrorism Database (Data file)," 2018.

Nozick, Robert, *Anarchy, state, and utopia*, Basic books, 2013.

Palestine and Anglo-American Committee of Inquiry on Jewish Problems in Palestine, *A survey of Palestine*, Vol. 1, government printer, 1946.

Pape, Robert Anthony, *Dying to win: The strategic logic of suicide terrorism*, Random House Incorporated, 2006.

Pedahzur, Ami, *Suicide terrorism*, Polity, 2005.

__ , **Leonard Weinberg, and Arie Perliger**, *Political parties and terrorist groups*, Routledge, 2008.

Perliger, Arie and Leonard Weinberg, "Jewish self-defence and terrorist groups prior to the establishment of the state of Israel: Roots and traditions," *Totalitarian Movements and Political Religions*, 2003, *4* (3), 91–118.

Pew Research Center, "Rising Restrictions on Religion," 2011.

Phillips, Brian J., "Terrorist group cooperation and longevity," *International Studies Quarterly*, 2014, *58* (2), 336–347.

__ , "Terrorist Group Rivalries and Alliances: Testing Competing Explanations," *Studies in Conflict and Terrorism*, 2018, (January), 1–23.

Phillips, David L, *From bullets to ballots: violent Muslim movements in transition*, Routledge, 2017.

Piazza, James A., "A supply-side view of suicide terrorism: A cross-national study," *Journal of Politics*, 2008, *70* (1), 28–39.

Piazza, James A, "Incubators of terror: Do failed and failing states promote transnational terrorism?," *International Studies Quarterly*, 2008, *52* (3), 469–488.

Piven, Ben, "Who, what and where is ISIL? Explaining the Islamic State," sep 2014.

Plümper, Thomas and Eric Neumayer, "The friend of my enemy is my enemy: International alliances and international terrorism," *European Journal of Political Research*, 2010, *49* (1), 75–96.

Rabil, Robert G, "Hezbollah, The Islamic Association and Lebanon's Confessional System," *The Levantine Review*, 2012, *1* (1), 49–67.

Radu, Michael and Vladimir Tismaneanu, *Latin American Revolutionaries: Groups, Goals, Methods*, New York: Pergamon-Brassey's International Defense Publishers, 1990.

Ranstorp, Magnus, "The strategy and tactics of Hizballah's current 'Lebanonization process'," *Mediterranean Politics*, 1998, *3* (1), 103–134.

Ray, Alex, "The Role of Ideology in Terrorist Alliance Networks," *Doctoral dissertation*, 2018.

— , "An Empirical Analysis of the Club Good Model of Terrorism," *Doctoral dissertation*, 2019.

Raynold, Prosper, "Fellowship, social network externalities, and management of religious risk," *Rationality and Society*, 2013, *25* (2), 229–260.

— , "An Economic Theory of Violent Religious Extremism An Economic Theory of Violent Religious Extremism Prosper Raynold Associate Professor of Economics Department of Economics," 2018, (June).

Rees, Matt, "How Hamas-Hezbollah Rivalry Is Terrorizing Israel," apr 2001.

Reuters, "Basque separatist group ETA says it has 'completely dissolved'," 2018.

Rollins, John, "Al Qaeda and Affiliates: Historical Perspective, Global Presence, and Implications for U.S. Policy," jan 2011.

Sageman, Marc, *Understanding terror networks*, University of Pennsylvania Press, 2004.

Salehyan, Idean, Kristian Skrede Gleditsch, and David E. Cunningham, "Explaining External Support for Insurgent Groups," *International Organization*, 2011, *65* (4), 709–744.

Sánchez-Cuenca, Ignacio, "The persistence of nationalist terrorism: the case of ETA," *Violent non-state actors in contemporary world politics. Columbia University Press, New York*, 2009.

Shitrit, Lihi Ben, *Righteous transgressions: women's activism on the Israeli and Palestinian religious right*, Vol. 61, Princeton University Press, 2015.

START, "Kurdistan Workers' Party (PKK)," 2015.

Tezcür, Güneş Murat, "Prospects for Resolution of the Kurdish Question: A Realist Perspective.," *Insight Turkey*, 2013, *15* (2).

The Institute for the Study of Violent Groups (ISVG), "Violent Extremism Knowledge Base," 2013.

The National Counterterrorism Center (NCTC), "Terrorist Groups," 2013.

— , "Terrorist Profiles," 2013.

TOI, "Israel says Hamas working with Hezbollah to train 'thousands' in Lebanon," jun 2018.

Transparency International, *Transparency International corruption perceptions index*, Transparency International, 1995.

Unzueta, Patxo, *Los nietos de la ira: nacionalismo y violencia en el País Vasco*, El País, 1988.

U.S. Department of State, "Country Reports on Terrorism 2004," 2005.

van Um, Eric, *Evaluating the Political Rationality of Terrorist Groups*, Springer, 2015.

Vice President's Task Force on Combating Terrorism, "Terrorist Group Profiles," Technical Report, Superintendent of Documents, U.S. Government Printing Office, Washington DC 1988.

Zimmerman, Katherine, "The al Qaeda Network," Technical Report September, American Enterprise Institute 2013.