

Journal of Conflict Resolution

<http://jcr.sagepub.com/>

The Effect of Competition on Terrorist Group Operations

Stephen Nemeth

Journal of Conflict Resolution published online 20 January 2013

DOI: 10.1177/0022002712468717

The online version of this article can be found at:

<http://jcr.sagepub.com/content/early/2013/03/04/0022002712468717>

Published by:



<http://www.sagepublications.com>

On behalf of:

Peace Science Society (International)

Additional services and information for *Journal of Conflict Resolution* can be found at:

Email Alerts: <http://jcr.sagepub.com/cgi/alerts>

Subscriptions: <http://jcr.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

>> [OnlineFirst Version of Record](#) - Mar 7, 2013

[OnlineFirst Version of Record](#) - Jan 20, 2013

[What is This?](#)

The Effect of Competition on Terrorist Group Operations

Stephen Nemeth¹

Abstract

Scholars have long accepted the contention that competition among terrorist organizations raises the level of violence used by the competitors. This article discusses this claim and advances another—that competition among terrorist organizations creates incentives to use less violence. Using insights from the organizational ecology literature—namely that competition occurs within “species”—I create a variable that assesses intraspecies competition. I test both claims using a data set of domestic terrorism created from the Global Terrorism Database (GTD) for the years 1970 to 1997. I find support for the hypothesis that competition leads to more terrorism, validating the claims of outbidding theorists. Furthermore, ideologies have differential effects on whether outbidding occurs, with nationalist and religious terrorist groups responding to competition with more terrorism and left-wing organizations responding with less.

Keywords

terrorism, domestic politics, terrorist organizations, organizational ecology

The idea that competition among terrorist organizations results in an increase of violence has become a powerful and persuasive idea in the terrorism literature

¹ Department of Political Science, East Carolina University, Greenville, NC, USA

Corresponding Author:

Stephen Nemeth, Department of Political Science, A-124 Brewster Hall, East Carolina University, Greenville, NC 27858, USA

Email: nemeths@ecu.edu

(Crenshaw 1981, 1985; Oots 1989; Bloom 2005; Chenoweth 2010). Put simply, organizations that are competing for the attention of recruits and public support will use escalating levels of violence, or “outbidding,” as a means to demonstrate their commitment and capability relative to other organizations (Bloom 2005). The outcome of this process leaves an indelible mark on affected states; violence becomes the currency for terrorist organizations, legitimizing and encouraging more and greater levels of violence.

Intuitively, this perspective has great appeal. Organizations that can demonstrate their ability through violence benefit in both recruitment and group maintenance (Crenshaw 1985; Post, Sprinzak, and Denny 2003). Recruits are drawn to the organizations that have the most selective incentives to offer, with the opportunity to participate in violent activity forming a primary motivation (Crenshaw 1985). Group cohesion and retention is increased because violence and the number of operations performed help “build morale within the membership through the experience of cooperative operations” (Waugh 1983, 9). These groups then become capable and persistent antagonists to the state, jeopardizing civilian security and the domestic political order.

However, this argument is also one of nuance. For Bloom (2005), the type of violence characterized by outbidding only flourishes in particular situations. The use of violence is a highly calculated move; the terrorism literature is replete with accounts of groups miscalculating the amount of violence a society was willing to endure (see Ross and Gurr 1989; Cronin 2009). Organizations that use excessive violence, and that do so in the incorrect environment, undermine their message and popularity, relegating them to second-tier status, or worse, extinction.

This article seeks to understand the role of competition on terrorist operations. Like Bloom (2005), I agree that two factors—government policy and social acceptability of violence—determine whether outbidding actually occurs. In areas where both are present, competition should lead to outbidding. This contextual element differentiates Bloom’s (2005) discussion of outbidding from earlier ones (Crenshaw 1981, 1985; Oots 1989). Competitive areas that lack those factors will not demonstrate outbidding behavior. In fact, competition may actually lead to less terrorism. I test this using cross-national domestic terrorism data from the Global Terrorism Database (GTD) for the years 1970 to 1997.

Second, I test these claims using an improved operationalization of competition. Building upon the organizational ecology literature, I develop a measure of competition that is “species” specific (Lowery and Gray 1995). This means that competition is restricted to groups of a similar type; in this case, groups that share a similar ideology. This type of perspective may be quite revealing; scholars have noted that different types of terrorist organizations (mainly secular versus religious) demonstrate meaningful differences in both the level and the types of violence that are perpetrated (Enders and Sandler 2000; Piazza 2009). This may then mean that outbidding is more likely to occur among religious groups than secular ones. Measuring competition this way also lets us avoid treating two very different

concepts—the absolute number of terrorist organizations and the density of the organizational environment—the same way.

The article is comprised as follows: In the next section, I discuss the various ways that competition may affect terrorist organizations. I start by highlighting Bloom's (2005) outbidding theory and the factors that make it possible. This is followed by a discussion about how, in certain situations, competition may actually lead to less terrorism. I then focus on how ideology can affect a group's decision to either outbid or moderate its violence, a possibility not explored by Bloom (2005). The section ends with the presentation of the hypotheses. In the third section, I discuss the data and coding rules. Here I emphasize the organizational ecology literature to create a measure of competition that is intra-ideological, rather than among all groups within the same state. The fourth section presents the empirical tests of the hypothesis and a discussion of the results. The fifth section concludes.

The Facets of Competition

While outbidding has become the dominant perspective regarding terrorist competition, the possibility also exists that competition may act to reduce terrorism. This can occur if competition worsens the collective action problem. The pursuit of terrorist goals is akin to pursuing public goods. In such cases, an increase in the number of actors working toward any particular goal increases the likelihood that any one individual group will free ride off the contributions of others. This is further exacerbated for terrorist organizations if competition occurs within an unsupportive environment. Such an explanation stands in contrast to the outbidding perspective; yet neither perspective has been subject to quantitative analyses (although see Chenoweth 2010). Before either is tested, I discuss them in detail below.

Outbidding

The outbidding perspective arises from the realization that dual pressures exist within all terrorist organizations. Terrorist leaders “must cope with a constant tension between their desires to preserve the organization and the membership's desire for action” (Crenshaw 1985, 476). Groups use violence to relieve both pressures; groups will not remain relevant without the use of action and people will not join an organization that does not appear to be either active or effective. When placed against another organization, the use of violence then becomes the criteria by which groups are judged.

Early theories did not consider the environment in which the group was placed but simply posited that it was competition that affected whether outbidding occurred (Crenshaw 1985; Oots 1989). Put simply, groups facing competition from a more extreme competitor would radicalize and engage in more violence to prevent members from defecting.¹ The adoption of terrorism by the Official Irish Republican Army (OIRA) in response to the same decision by the Provisional Irish Republican

Army (PIRA) is indicative of this type of outbidding logic (Crenshaw 1985; Moloney 2010). In the Palestinian areas, this is seen with the adoption of suicide terror by secular groups after its use by fundamentalist organizations.

The defection of members provides another cause for outbidding (Crenshaw 1985). In this case, the remaining members would increase their level of activity to justify the investment they had made in joining the organization. This initial decision is not an easy one. Wolf (1978, 176) describes an existence “characterized by the lack of comfort, the absence of expendable income, and the denial of leisure activity and personal privacy.” As a result, the high personal cost endured by members makes activity their only sustenance and identity. Increased action, therefore, is a logical result of individuals seeking to ensure that their choices to engage in terrorism are justified (Kellen 1979; Crenshaw 1985).

The most recent incarnation of outbidding, provided by Bloom (2005), has its roots in the failure of the Israeli–Palestinian peace process and the subsequent increase in the use of suicide terrorism. The glorification of suicide terrorism, and the support groups received for this act, created an environment where all groups had to engage in numerous and spectacular acts of violence.² The logic of this theory is simple and persuasive—“if multiple insurgent groups are competing for public support, bombings will intensify in scope and number as they become both the litmus test of militancy and the way to mobilize greater numbers of people within their community” (Bloom 2005, 78). Such action is known to be effective; Jerrold Post and his research team (2003, 173) found that nearly 60 percent of members in secular groups and 43 percent of religious group members admitted to joining the most active terrorist organization in their community.

This theory does differ from its predecessors. For Bloom (2005), outbidding has to occur in an environment supportive of a group’s decision to engage in extreme violence. In the case of the Israeli–Palestinian crisis, outbidding was successful because the ongoing conflict with the Israelis, the collapse of the peace process, and the ineffectiveness of the Palestinian Authority created an atmosphere of hopelessness that spurred the creation of terrorist organizations and legitimated terrorism, particularly suicide terrorism. The newfound acceptability of this tactic became the mark by which all organizations were judged, setting off the cycle of outbidding. Support for suicide terrorism increased quickly in this environment, reaching upward of 85 percent in October 2001 from lows of 24 and 33 percent during the period from 1997 to 1999 (Bloom 2005, 193).

In Sri Lanka, another of Bloom’s (2005) case studies, outbidding arose for largely the same reasons. The Tamil history with the government had been marked by political futility and violence at the hands of the majority Sinhalese. As a result, Tamil quality of life had changed little since independence. This status quo led to the acceptance of terrorism and, moreover, to the creation of a number of Tamil separatist groups, one of which was the Liberation Tigers of Tamil Eelam (LTTE). Like the Palestinian case, the resultant violence was caused by groups competing for support within an environment that accepted that type of violence.

Unlike the Palestinian case, the acceptability of terrorism began to wane in Sri Lanka. The LTTE had used violence to great effect—it struck at the Sinhalese, moderate Tamils, and competitor organizations to become the predominant organization pressing for Tamil separatism. By 2001, the long-running conflict between it and the government had sapped the will of the organization's supporters, driving it to the negotiating table. By the time of Bloom's analysis, Tamil hopefulness for peace and the end of competition between the various Tamil organizations had reduced the frequency and appeal of suicide terrorism.

This perspective has led to some quantitative work—most notably that of Chenoweth (2010). In this work, she argues that intergroup competition explains why democracies experience more terrorist activity than nondemocracies. She finds support that transnational terrorist incidents and domestic terrorist organizations are more likely to originate in competitive polities. While her analysis does provide some validation of Bloom (2005), it is not a test of *terrorist* competition per se. Instead, competition between terrorist organizations is subsumed into a larger measure of political competition. States may, in fact, have high levels of terrorist competition while having little political competition. Competition is also assumed to occur across the terrorist group system. The assumption is that resources and recruits are simply drawn to the most active group. I discuss the potential drawbacks to this approach, particularly in the context of the organizational ecology literature, in the Methods section.

Competition and Moderation

While Bloom's (2005) theory provides an excellent explanation of terrorist competition and its outcomes in areas that include both a favorable government policy and a society acceptant of violence, it is important to consider what the effect of competition may be when either of those two conditions is absent. In such situations, competition may exacerbate collective action problems. Groups may have goals that they strive for, but the lack of a supportive environment may mean that groups are content to free ride on the effort of other groups and are unwilling to expend additional resources to distinguish themselves from their competitors. As such, competition may lead to less, rather than increasingly, violence.

Terrorist organizations, at their most fundamental level, seek to attain some sort of political, religious, or social objective. This can involve the creation of a new government or state, the institution of a new social contract based on a political or religious philosophy, or the creation of new public policy (Kydd and Walter 2006). In these disparate cases, the outcomes all share the characteristics of classic public goods: that is, they are both nonrival and nonexcludable (McAllister and Schmid 2011). The presence of additional groups makes the attainment of such goals more possible, but reduces the discernible impact of any individual contribution and increases the likelihood that any one group will shirk. This presents a central dilemma to those seeking policy change—when individuals and organizations can

receive the benefits of action regardless of their participation—then no incentive exists to contribute to its attainment. These problems vex institutions and individuals in both benign and violent political interactions (Olson 1965; Lichbach 1995)

The possibility of free-riding also means that the effort necessary to achieve the goal is likely to be underprovided (Samuelson 1954). Lichbach (1995, 18–19) notes that “protests lack protestors, rebellions lack rebels, and revolutions lack revolutionaries” and further, that while “joint operations by several dissident groups may often appear to be appropriate . . . most protest incidents are the work of a single group of dissidents.” For terrorist organizations, the presence of ideologically similar organizations theoretically increases the likelihood that an outcome will be achieved while increasing the temptation that each organization can do less, or nothing at all, to achieve the result. Merlo (2006, 106) discusses this occurring with both right and left-wing terrorism in Italy, “the division into so many groups prevented them from operating efficiently and carrying out the ‘long-term war’, which they often proclaimed in their propaganda.”³

The problem of free-riding is exacerbated when the environment is unfavorable for outbidding—where government policy and the acceptability of violence do not justify increasing levels of violence. When government policy is moderate, either by avoiding indiscriminate violence in counterterror operations or by acquiescing to some of the terrorists’ goals, terrorist organizations are more likely to free ride. Individuals have little reason to join, and groups have little reason to act, when the perceived injustices are slight or when the desired outcome appears likely to occur. It is when government policy becomes violent—particularly when government attacks are indiscriminate—that the benefits to free-riding decrease, driving groups to action (Kalyvas and Kocher 2007). Pointing out and provoking harsh government action is a well-used recruitment tactic for both rebel groups and terrorist organizations (Lichbach 1995; Bueno de Mesquita 2005; Kydd and Walter 2006)

The logic of free-riding also holds when terrorism is perceived poorly. For Cronin (2009, 15), the absence of a viable rationalization for terrorism makes it “nothing more than murder” and a liability that “redounds against a group or its cause.” The benefits for free-riding are high in these cases; the organizations that do conduct operations will draw condemnation or, an active backlash from the public (Ross and Gurr 1989). The November 1997 attack by al-Gama’a al-Islamiyya (GAI) in the Egyptian city of Luxor provides a vivid example. In trying to distinguish itself amongst other Islamist groups, the GAI attacked a group of tourists, killing fifty-eight foreigners and four Egyptians. The attacks, rather than galvanizing opposition against the government, widened the split between moderates and hard-line antigovernment organizations (Cronin 2009). The resulting reaction destroyed the group’s credibility, dried up their popular support, and even halted the operations of Egypt’s other Islamist groups (Wright 2006).

The Differential Effects of Ideology on Terrorist Competition

Both of the above perspectives note the highly contextual nature that accompanies competition. In each, the presence of other groups results in either outbidding or

moderation dependent upon government policy and societal acceptance of violence. These conditions are largely subjective; groups may interpret and frame the government's actions to be extreme and society to be acceptant of violence when reality might dictate otherwise. These perceptual lenses are largely the function of a group's ideology. Drake (1998, 55) argues that ideology is crucial in understanding a group's target selection and, moreover, "provides a motive and a framework for action."

One of the primary ideological distinctions is that between secular and religious terrorist organizations. Juergensmeyer (2003) notes the defining characteristic of religious terrorism is that the combatants feel they are taking part in a conflict between good and evil. In such a struggle, the "absolutism . . . makes compromise unlikely, and those who suggest a negotiated settlement are as excoriated as the enemy" (Juergensmeyer 2003, 157). As such, religious terrorist organizations may be "less constrained by the desire to 'win the hearts and minds' of an audience" and are more likely to select extreme acts of violence (Piazza 2009, 64). This distinction may mean that, when confronted with competition, religious terrorist organizations are more likely to respond with outbidding than secular organizations.

This is contrasted with secular terrorist organizations. The political goals of these groups and the public support needed to achieve them should reduce the possibility that these groups will use outbidding. Nationalist groups, because they rely on generating popular support for their goals, should be less likely to use outbidding because extreme violence may alienate supporters and make their goals more difficult to attain (Sanchez-Cuenca and de la Calle 2009). Groups on the political left also will not use outbidding because terrorism is typically seen as a tool used to educate and mobilize supporters against the system (Laqueur 1977; Drake 1998). Finally, right-wing organizations may be inclined to engage in outbidding. This occurs because, in many instances, these groups operate with the support of the government (Della Porta 1992; Sprinzak 1995; Drake 1998; Kydd and Walter 2006). This support, independent of the population, may make them less sensitive to the potential backlash that outbidding may cause.

However, this categorization is complicated by the malleability of terrorist ideology (Abrahms 2008). In other words, political organizations can justify outbidding because the distinction between ideologically innocent and guilty is subject to interpretation rather than an unchanging absolute. The Red Brigades justified their actions, including some against supportive elements, on the basis of a cobbled-together concept of "revolutionary justice" (Manconi 1991). Abrahms (2008) notes that right-wing groups in Germany adopted the rhetoric and targeting patterns of the left to such an extent that police mistakenly suspected the actions to be that of the Communists. This flexibility thus makes cataloging secular organizations on their willingness to outbid their ideological counterparts difficult.

Nevertheless, the explanations discussed above allow us to forward two hypotheses. The first assesses the outbidding and moderation explanations for competition's effects on terrorist organizations. The second assesses the differential effects that ideology may have on terrorist competition. They are as follows:

Hypothesis 1: Groups in competitive and favorable environments will commit more terrorist acts than groups in noncompetitive and unfavorable environments.

Hypothesis 2: Religious and Right-Wing groups will commit more terrorist acts in competitive and favorable environments than Nationalist and Left-Wing groups.

Data and Methods

In order to analyze the relationships discussed here, I use the GTD from the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland. The data set includes 81,800 acts of domestic and international terrorism occurring in 180 states spanning the years 1970 to 2007.⁴

Since the analyses regard the effects of competition on group behavior, I use the group-state/year as the unit of analysis. This distinction, rather than group-year, accounts for the behavior of the same group in different states, such as Karen National Union in Myanmar versus its branch in Thailand. The repressive environment in Myanmar is likely to exert a different effect on group behavior than the somewhat more permissive environment in Thailand. This also accounts for differing levels of competition within the same state. A state may have a competitive atmosphere regarding left-wing groups, but a relatively monopolistic environment regarding right-wing groups. Using state-level analyses masks this variation, precluding analyses of this type. This distinction and ideological competition are discussed in more detail below.

It is also important to note that competition is likely to exert different pressures on domestic and international terrorist organizations. Groups operating domestically have to rely on resources within the country—meaning that their practices are likely to be driven by their public support. This means that factors such as competition, as well as the acceptability of violence and government policy, are likely to have a direct impact on the amount of terrorism a group perpetrates. An international group, on the other hand, does not face the same pressure. Instead, the international group can circumvent factors at the target state and go back to its home base to get the needed resources. Competition, then, should have very little to do with international group behavior.⁵ In fact, Siqueira and Sandler (2006) state that groups with outside sponsors, particularly international groups, are likely to face little restraints on the type of violence they use.

I also restrict my analyses to cases of domestic terrorism. This is important not only because domestic terror is more prevalent than international terrorism (Rosendorff and Sandler 2005), but because analyses that focus solely on international terrorism or combine the two may lead to incorrect conclusions because they will be biased toward large states and certain highly capable groups (Abadie 2006).

I create a domestic terrorism coding rule by noting the attack location and the perpetrating group in the GTD. I compare these to the available group record in a number of sources: the U.S. State Department's *Patterns of Global Terrorism*

(various years), Anderson and Sloan's (2002) *Historical Dictionary of Terrorism*, Schmid and Jongman's (1988) *Political Terrorism: A New Guide to Actors, Authors, Concepts, Data Bases, Theories, and Literature*, and the START Center's Terrorist Organizational Profiles (TOPs) database.⁶ If the location of the attack in the GTD coincides with a known operating area for the terrorist organization in these data sources, the event is marked as domestic terror.⁷

The final data set contains 27,586 acts of domestic terror perpetrated by 361 terrorist organizations. This number is comprised of 307 individual groups plus 54 "franchises." These attacks are then aggregated by group-state/year to create a data set of 1,493 group-state/years with terrorist attacks. Using the start and end dates of terrorist activity from the data sources, I fill in all nonterror years (years the group was active but not engaged in terrorist attacks) with zeros. The final data set that results includes 3,947 group-state/years.

Dependent Variable

The dependent variable used in this analysis is a yearly count of the number of domestic terror attacks committed by each individual terrorist organization. Attacks are included in the data set if they are intentional, involve a use of violence or a threatened use of violence, and the actors are subnational (START 2009, 4–5). Attacks must also fulfill two of three additional criteria for inclusion: the act must be directed toward a political, economic, religious, or social goal; there must be evidence of an intent to coerce; and the action must be outside of the realm of legitimate military activities (START 2009, 4–5). Finally, to reduce bias that may result from overemphasizing capable organizations, I follow Maoz (2007) and include failed acts of terrorism.

Independent Variable

To assess the effects of group competition, I use the inverse of the Herfindahl-Hirschman Index (HHI) as my main independent variable (Herfindahl 1950; Hirschman 1945). The HHI was originally conceived as a way to assess the concentration of firms in a marketplace. Used in this capacity, it has become a central component in economic analyses—both the Justice Department and the Federal Reserve use it to evaluate the market impact of potential mergers (Hannan 1997; Rhodes 1993).

One of the advantages of this measure, as opposed to other means of determining competition, is that it provides a measure that is invariant to the number of competitors. For example, there may be several firms in a market that create a particular good, yet the market share of one may create an environment where little competition actually exists. Similarly, the presence of several terrorist groups may not indicate a truly competitive environment, especially if one is clearly more capable and

more noteworthy than the rest. The ability of the HHI to account for this potential asymmetry is widely touted as one of the strengths of the measure (Calkins 1983). For this analysis, the HHI is calculated as:

$$\frac{1}{\sum_{i=1}^N S_i^2},$$

where S_i is the market share of firm i , and N is the number of firms in the market.

To determine the number of firms in the market, I adopt the concept of “competitive exclusion” from the organizational ecology literature (Lowery and Gray 1995). This states that competition is a function of the resources that one draws from: groups will only compete with other groups that draw on the same resource (Lowery and Gray 1995). For them, this means competition among interest groups occurs within similar advocacy markets. Farm advocacy groups are distinct from business groups and, as such, are only likely to face competition from other farm groups. As a result, their analysis focuses on “species-guilds”—“sets of organizations representing related interests” (1995, 9).

I conceptualize the same for terrorist organizations: each state has a certain number of ideological “markets” in which recruits and resources are sought and competition is bounded. Communist terrorist organization should face competition from groups with similar ideological goals, not dissimilar ones. Secessionists have their needs best served from a nationalist, rather than a religious, organization. Post, Sprinzak, and Denny (2003, 173) note terrorist recruitment occurring within these lines: “individuals from strictly religious Islamic backgrounds were more likely to join Islamist groups, while those who did not have a religious background might join either a secular or religious group.”

Using this insight, I use the RAND Corporation’s *End of Terror* data set (Jones and Libicki 2008) to classify each state as having four potential ideological “markets”—nationalist, religious, left-wing, or right-wing. To determine the number of “firms” in each of these “markets,” I sum for each state-year the number of other groups that exist within each of the four ideological categories. Market share is then determined by the percentage of attacks committed per state-year by each group within each market. This best corresponds to the insight that members stay in and recruits join the most active organizations (Crenshaw 1985; Oots 1989; Post, Sprinzak, and Denny 2003).⁸

These two values, groups per ideology and the number of attacks per group, are used to calculate the HHI for each ideological category for every state-year. The use of the inverse of the HHI follows Taagepara and Shugart (1989) and allows for a more readily interpretable variable—scores near 1 indicate a condition of monopoly while higher scores indicate competitive environments.⁹ If the outbidding argument is correct, high values of this variable will be associated with more total attacks. If the moderation perspective is correct, low values will be associated with more attacks.

Figure 1 plots the average level of organizational competition for the ten states with the highest number of domestic terrorist attacks.¹⁰ Bars of one unit length indicate a condition of monopoly while longer bars indicate progressively more competitive environments. The shadings indicate terrorist ideology as determined by the RAND *End of Terror* data set (Jones and Libicki 2008).

Three states—Colombia, France, and the United Kingdom—stand out in Figure 1 as particularly competitive venues for terrorist organizations. The high score for left-wing groups in Colombia indicates an environment that gave rise to such organizations as the Revolutionary Armed Forces of Colombia (FARC), the National Liberation Army (ELN), and smaller groups like the Guevarista Revolutionary Army and the Popular Liberation Army. In France and the United Kingdom, the high level of competition occurs due to groups engaged in Basque, Corsican, and Northern Ireland separatism. For the remaining states, it is interesting to note that monopoly is the rule rather than the exception. This finding—excepting Colombia, France, and the United Kingdom—stands in contrast with Bloom’s (2005) outbidding theory.

Competition is also found to vary across regime types.¹¹ I use the *Polity2* measure from the Polity IV data set to code states as democratic or autocratic; states with scores at 6 and above are coded as democratic and those below 6 are coded as autocratic (Marshall, Gurr, and Jaggers 2009).¹² The results indicate that democracies have higher levels of competition than autocracies ($t = -9.51, p < .01$). A trichotomous classification using anocracies—regimes with *Polity2* scores ranging between -5 and 5 —also finds that democracies are the most competitive venues for terrorist organizations ($F = 52.60, p < .01$).¹³

While the underrepresentation of terrorist groups in autocracies is a problem for analysis (see Drakos and Gofas 2006), the difference in the number of groups between the regime types provides support for Eubank and Weinberg’s (1994, 1998) findings that democracies are more likely to harbor terrorist groups than autocracies. Further, this echoes Chenoweth’s (2010) research linking the emergence of terrorist organizations in democracies to high levels of intergroup competition.

Because outbidding theory is contextual—depending on the “domestic politics of the minority group and the state counter-terror strategies and responses to insurgent violence” (Bloom 2005, 79)—I include a variable assessing the “environment” that each state provides a terrorist organization. This variable is drawn from Mullins and Young (2012), who argue that states and societies that legitimize and rationalize the use of violence may be more likely to be a victim of terrorism. This occurs as a result of a spillover process—groups model and adopt the state’s use of violence to its own interactions.

This measure is drawn from four distinct indicators—two that capture state violence against its people, a third that measures citizen violence, and a final measure of state involvement in war. The first measures whether or not a state has used capital punishment in a given year while the second captures the state’s use of extrajudicial killings

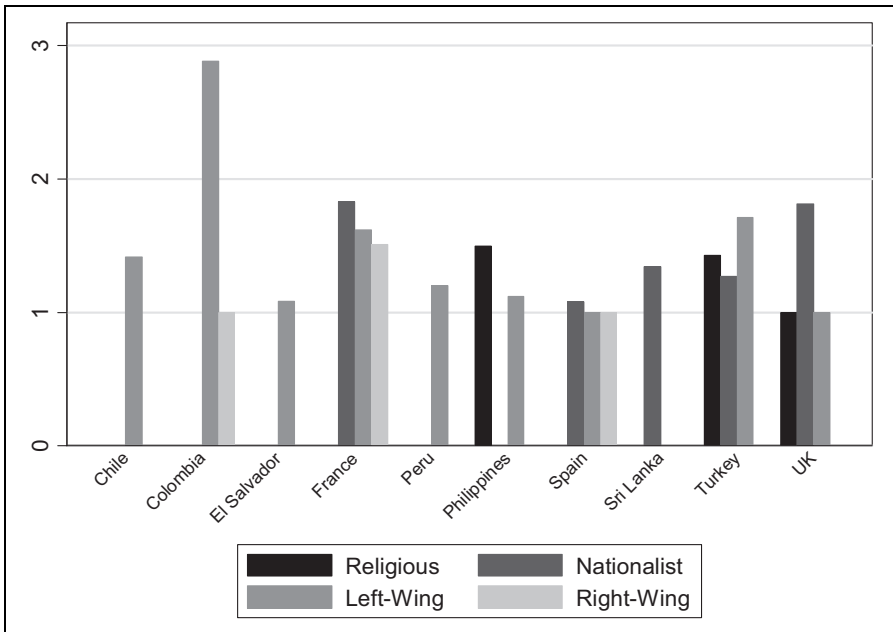


Figure 1. Average Level of Competition for Top Ten Target States of Domestic Terrorism (1970–1997)

through the Political Terror Scale (Gibney and Dalton 1996). The third component assesses citizen violence using the number of homicides per 100,000 as drawn from the World Health Organization. The final element measures state participation in an interstate or intrastate war as measured by the Correlates of War project (Sarkees and Wayman 2010). These components were found to load on a single factor. This factor, called the acceptability of violence, is used to conduct the analyses. The temporal range of this variable reduces the subsequent analyses to the 1970 to 1997 time period.

To best assess this relationship, I create an interaction term between competition score and this variable. If outbidding is correct, I expect a positive relationship between the interaction term and the dependent variable. This would indicate, like Bloom (2005), that competition and societal tolerance for violence increase the incidence of group violence. To best assess these, I follow Brambor, Clark, and Golder's (2006) suggestion to visually analyze interaction terms. I do this using Boehmke's (2006) *Grinter* data utility.¹⁴

Control Variables

I consider a number of control variables that may have an impact on group activity. I first consider the state's ability to exert control over its population and territory. A

weak central authority creates gaps in state control that allows groups to divert resources from organizational security to the conduct of international terror (Takeyh and Gvosdev 2002; Lai 2007). For domestic terrorist organizations, a weak central government should allow groups to operate without fear of state repression and to dedicate more of their resources to attacks within the state.

I assess state control using a measure of a state's relative political capacity (RPC) (Arbetman and Johnson 2008). This variable was originally used by Organski and Kugler (1980) to measure the ability of states to wage war independent of the absolute size of their resource base. At the domestic level, similar measures of resource extraction have been associated with a decrease in internal violence (Benson and Kugler 1998). This variable is roughly calculated as the ratio of the total value of actual state extractions relative to the potential value of all state extractions (Arbetman and Johnson 2008).¹⁵ I anticipate that increased state control will be associated with fewer attacks.

A second control variable is the state's regime type. The impact of regime type has been thoroughly debated in previous research, resulting in three schools of thought. The first argues that the liberal characteristics of democracies, such as respect for civil liberties, freedom of the press, and rights of due process reduce operational costs for terrorist groups, allowing them to recruit new members, and to plan attacks with minimal interference from the government (Crenshaw 1981; Hamilton and Hamilton 1983; Schmid 1992). A second argues that democracies face reduced risks from terrorism because there are many ways, such as voting, demonstrations, or the formation of political parties to effect change without the need for violence (Eubank and Weinberg 1994; Eyerman 1998). Finally, the third argues that the components of democracy have differential effects on terrorism; characteristics like political efficacy and electoral participation help reduce terrorism while constraints of executive power increase the probability of terrorism (Li 2005). For this, I again use the *Polity2* variable (Marshall, Gurr, and Jagers 2009).¹⁶ I divide this score into three categories—democracy, autocracy, and anocracy—and exclude autocracy as the baseline category.

I also use a number of additional control variables. Civil war should have a positive effect on the number of domestic terror attacks. Governments engaged in civil wars should be less able to maintain control over their territory, reducing their ability to combat terrorism, and allowing groups to devote more resources toward terrorist violence. Civil war can also sway unaligned moderates to support terrorist organizations, thus increasing their vitality and longevity (Kalyvas 2004). Data for this comes from the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al. 2001).¹⁷

Larger populations are also likely to have an effect on terrorist group operations. Large populations provide organizations with a larger base to recruit from, a broader pool of resources, and a more difficult environment for a state to monitor. All of these characteristics should contribute to more active organizations. The values for the population variable are taken from Gleditsch (2002). This variable is logged to reflect the decreasing benefit to terrorist groups given larger populations.

Finally, I account for economic development. While economic discontent has been linked to a variety of political outcomes, research on the role of economics on terrorism has found little support for a direct effect (Krueger and Maleckova 2003; Abadie 2006; Piazza 2006). Rather, support and recruitment for terrorism seem to occur more often among the educated and employed than the poor (Krueger and Maleckova 2003). At the same time, wealthier states that are able to provide adequate social welfare policies are less likely to have popular support for terrorism and to experience terrorism on their soil (Burgoon 2006). This is unclear at the level of the group; organizations in low-wealth countries may produce less terrorism because it is difficult to assemble enough recruits who meet a group's qualifications. At the same time however, the production of terrorism at the highest levels of state wealth may be low as qualified recruits exist but support for terrorism is low. Data for this variable come from Gleditsch (2002).

Because the hypotheses relate to terrorist group activity, as measured by number of attacks, I use an event count model. Poisson models are not appropriate in this case as they assume that the data are independent and homogenous. Instead, it is likely that group activity not independent as organizations that have gained experience with violence are more likely to use it in the future (Jackson et al. 2005). Thus, given that the number of total attacks is both dependent and overdispersed, I employ a negative binomial model (Long 1997; Cameron and Trivedi 1998). I lagged the independent variables to account for endogeneity. Finally, I also include robust standard errors clustered by group to address any potential problems with heteroscedasticity and serial correlation (Greene 2002). Table 1 provides the descriptive statistics for the variables used in this analysis.

Results

Table 2 presents the results from our tests of competition and terrorist activity. The results indicate that competition has a negative and statistically significant effect on the number of terrorist attacks that occur on a yearly basis. This initial finding suggests that, unlike outbidding, terrorist organizations respond to competition by moderating their violence. This may occur because the presence of ideologically similar organizations increases the likelihood that an organizationally desirable outcome will be achieved, thus increasing the appeal of free-riding off of the contribution of other, like-minded, organizations. This result contrasts with earlier explanations of outbidding that simply posit that competition itself is enough to trigger escalatory behavior (Crenshaw 1981, 1985; Oots 1989). The first differences confirm this; a one standard deviation (*SD*) increase in competition (akin to adding one additional group) results in approximately seven fewer attacks.¹⁸

The first model also includes an interaction term incorporating both group competition and a state's acceptance of violence. This allows us to directly test Bloom's (2005) contention that outbidding is a function of both group competition

Table 1. Descriptive Statistics

Variables	Observations	Mean	Standard Deviation	Min	Max
Domestic terrorist attacks	3,786	7.29	32.94	0	509
Competition	3,586	1.74	1.13	1	9
Acceptability of violence	3,384	.575	1.09	-1.12	3.18
Competition × Acceptability	3,384	1.12	2.41	-5.22	14.71
Anocracy	3,468	.199	.399	0	1
Democracy	3,468	.568	.495	0	1
GDP per capita	3,523	5199.75	5479.51	136.76	28484.4
RPC	3,456	1.00	.527	.020	3.52
Civil war	3,586	.514	.500	0	1
Logged total population	3,523	10.32	1.58	5.97	13.75

Note: GDP = gross domestic product; RPC = relative political capacity.

Table 2. The Effect of Competition on Domestic Terrorist Attacks

	All groups	First Differences
Competition	-.693*** (.161)	-7.21
Acceptability of violence	.422 (.312)	
Competition × Acceptability	.010 (.101)	
Anocracy	.174 (.409)	
Democracy	1.59*** (.419)	10.89
GDP per capita	.000** (.000)	6.79
RPC	-.427 (.267)	
Civil War	.692** (.336)	6.93
Logged total population	-.362*** (.124)	-6.00
Constant	5.05 (1.46)	
N	3,031	
Log likelihood	-5817.65	
Wald χ^2	106.66***	

Note: GDP = gross domestic product; RPC = relative political capacity.

Robust standard errors clustered on group in parentheses.

*Significant at .10. **Significant at 0.05. ***Significant at 0.01 (two tailed).

All independent variables lagged at $t - 1$. First differences calculated as change in one SD for continuous variables and unit change for dichotomous variables.

and the presence of a favorable domestic environment. The results indicate that the interaction is positive but not statistically significant.

When analyzed visually, as shown in Figure 2, we find support, albeit weak, for Bloom's (2005) outbidding theory. The left axis mirrors our previous result—that the overall effect of competition on the number of terrorist attacks is negative. However, when measured in conjunction with a societal tolerance for violence, competition breeds behavior consistent with Bloom's (2005) discussion of outbidding—

leading to the modest positive slope in the figure. This effect is significant throughout all values of the violence variable, as both the upper and lower bounds of the confidence interval exclude zero. When viewed in the context of free-riding, this suggests that while groups can coast off of the contribution of others, those costs increase as society becomes more tolerant of violence. This mounting pressure then leads groups to engage in increasing levels of violence in order to maintain both their relevance and their organization (Bloom 2005).

The controls generally perform as expected. The effect of democracy is positive and strongly significant, leading to more than ten additional attacks. This may indicate that domestic terror is strongly influenced by the democratic process—issues of representation or legislation may provoke groups to violence. At the same time, this may also reflect the deep divisions in reporting terrorist acts between democracies and autocracies (Drakos and Gofas 2006). Gross domestic product (GDP) per capita is also shown to be positive and significant. The first differences indicate an increase of almost seven additional attacks. This suggests that groups will be more active in areas where they can get the best recruits.

I find no support for RPC. This indicates that, at least for analyses using all terrorist organizations, state capacity does not decrease the incidence of terrorism. This contrasts with the findings of Piazza (2008). Civil war is significant and in the anticipated direction. This result indicates that, like Kalyvas (2004), we can see domestic terrorism as a tactic used by combatants within civil war. This may also occur because civil conflict allows terrorist groups room to operate with less threat of government repression. In either case, the results indicate that conditions of civil war will cause groups to engage in six more attacks relative to nonvictimized states.

Contrary to our expectations, larger populations are associated with groups committing *less* terrorist acts. The first differences reveal a decrease of six attacks. This result is puzzling; populations accord larger bases for recruitment, greater target selection, a larger audience to intimidate, and greater monitoring difficulties for the government; thus we would expect *more* attacks. One potential explanation for the result is that it may be an artifact of the way the data are gathered—data aggregated by state-year include a wide variety of actors other than groups who may engage in terrorism, thus inflating the number of acts. When data are aggregated by groups, as is this analysis, organizational concerns about group preservation may instead render population a constraining or irrelevant variable. This can also be an artifact of group ideology—the effect of population size may be contingent on the type of group acting in the country.

While Table 2 suggests that outbidding occurs in competitive environments, this finding is somewhat incomplete. Group ideology, as suggested by the second hypothesis, may modify the effect of competition, leading to more terrorism in some cases and less in others. The design of Table 2, pooling the four ideological competition scores for each state-year, masks any potential ideological difference, necessitating separate analyses. Table 3 uses the same variables as the first model but restricts computation to within each ideological category. This allows a more direct

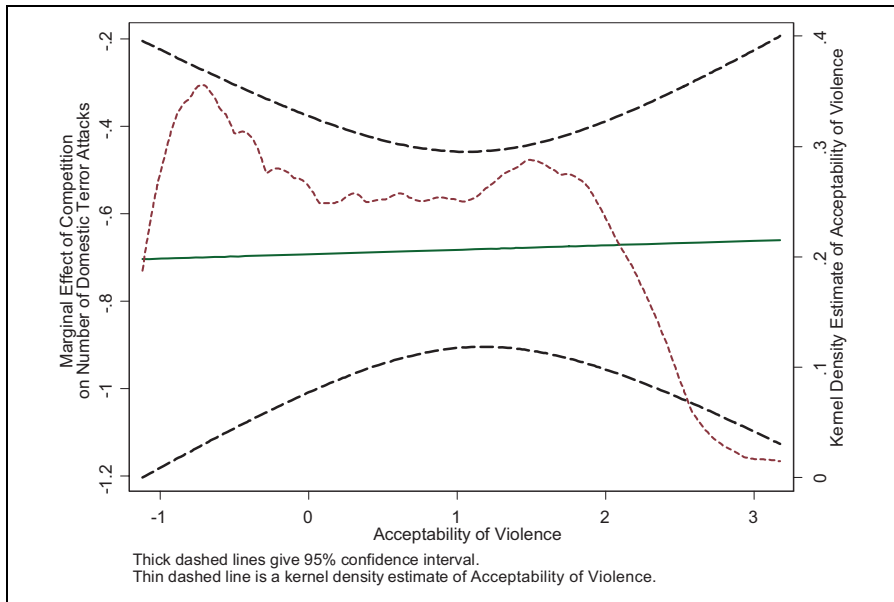


Figure 2. Effect of Competition Conditioned on Acceptability of Violence

test of the effects of intraspecies competition. In addition, each of these new models provides a better fit to the data; all four have an Akaike Information Criterion (AIC) lower than the original model (Akaike 1973).¹⁹

At first, the results seem indistinguishable from the original model—three of the four models indicate that competition leads to fewer attacks. This again suggests that groups, when controlling for a society’s acceptance of violence, will decrease their use of violence. One potential explanation for this behavior, as suggested above, may be free-riding. The substantive effects differ between the models but generally reinforce the findings of the first. In particular, a one *SD* increase in competition for religious groups reduces the number of attacks by nearly two. The same increase among nationalist organizations reduces the number of attacks by almost four—a 70 percent decrease in the mean number of attacks. Increases in one *SD* of competition for left-wing groups reduce the number of attacks by a little more than two from its mean of 14.18.

The differences between Tables 2 and 3 become evident when the conditional effects are analyzed visually, seen in Figure 3. For religious and nationalist terrorist organizations, the marginal effect of competition on domestic terror attacks increases as the acceptability of violence increases. In the case of religious organizations, this result is significant only when the value of the acceptability of violence variable is between -0.6 and 1 . For these organizations, the common response to competition is outbidding. For religious terror organizations, this finding is

Table 3. The Effect of Competition on Domestic Terrorist Attacks by Ideology

	Religious	First Differences	Nationalist	First Differences	Left-wing	First Differences	Right-wing	First Differences
Competition	-1.35** (.665)	-1.72	-.733*** (.162)	-3.95	-.406* (.245)	-2.49	-.321 (.341)	
Acceptability of violence	-1.78** (.746)	-1.97	-.253 (.326)		.769** (.356)	16.96	1.20** (.595)	4.26
Competition × Acceptability	.754* (.408)	14.43	.094 (.092)		-.084 (.146)		-.429 (.401)	
Anocracy	.165 (.759)		2.44*** (.426)	78.81	-.711 (.437)		-2.98*** (.556)	-.970
Democracy	-.395 (.855)		2.44*** (.351)	6.17	1.11** (.556)	6.28	.096 (.566)	
GDP per capita	-.000 (.000)		.000** (.000)	3.89	.000 (.000)		.000 (.000)	
RPC	-.340 (.875)		-.484 (.357)		-.797** (.371)	-2.54	.486** (.231)	.302
Civil war	2.20*** (.665)	2.34	.716** (.307)	3.46	.474 (.463)		.949* (.561)	2.03
Logged total population	-.068 (.363)		.290* (.157)	4.70	-.631*** (.215)	-5.52	-.391** (.196)	-.340
Constant	2.69 (4.16)		-2.67 (1.94)		8.48 (2.25)		3.73 (1.93)	
N	397		1,343		1,122		169	
Log likelihood	-454.69		-2324.50		-2595.76		-209.31	
Wald χ^2	22.55***		149.28***		82.08***		487.89***	

Note: GDP = gross domestic product; RPC = relative political capacity.

Robust standard errors clustered on group in parentheses.

*Significant at .10. **Significant at .05. ***Significant at .01 (two tailed).

All independent variables lagged at $t - 1$. First differences calculated as change in one SD for continuous variables and unit change for dichotomous variables.

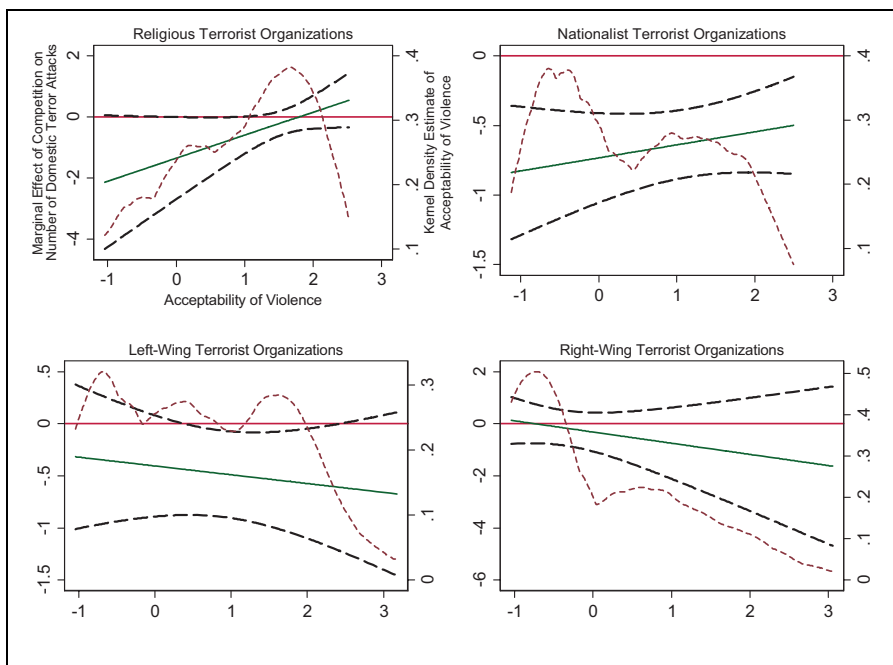


Figure 3. Effect of Competition Conditioned on Acceptability of Violence by Ideology

consistent with our hypothesis. This also suggests that religious organizations are not concerned with public judgment but that of the hereafter. Juergensmeyer (2003, 221) notes that for religious organizations, “there is no need . . . to contend with society’s laws and limitations when one is obeying a higher power.”

The nationalist group result, on the other hand, is contrary to our hypothesis. Outbidding may occur with these groups because the goal—control of a new state or breakaway region—is indivisible. Nationalist groups may outbid one another because each wishes only to control the entirety of the final outcome, not a fraction of it (Brubaker and Laitin 1998). Second, outbidding may also occur in nationalist struggles where the opponent is clearly ethnically different than the protagonists (see Asal and Rethemeyer 2008). This aids efforts to delineate an “other” and to justify increasing levels of violence against the adversary.

The results also suggest that left-wing groups do not appear to engage in outbidding. Instead, in those areas where the interaction is significant—where the upper and lower confidence intervals exclude zero—competition leads to moderation. This result is consistent with the second hypothesis. Unlike their religious counterparts, whose operations are not constrained by societal norms and rules, left-wing groups face such limitations. For left-wing organizations, the populace is not a clearly defined “other”—they represent a pool of potential

converts that can be won over and used to advance an agenda (Asal and Rethemeyer 2008). As such, the violence that is used by these organizations must be measured and appropriate. Because the confidence intervals include zero for all values of the acceptability of violence variable, the interaction for right-wing organizations is not significant. As a result, I make no claims about the relationship.

The control variables continue to indicate distinct differences between the four ideological categories. The state's acceptability of violence has a differential effect across the ideologies; religious groups are less likely to perpetrate attacks in more violence-acceptant states while both left and right-wing groups are more likely. The first differences indicate a two attack decrease in group operations for religious groups while leading to an increase of almost seventeen and four attacks for left-wing and right-wing organizations, respectively. For anocracies, nationalist groups will engage in seventy-eight more attacks than the autocratic baseline, while a right-wing group will partake in approximately one less attack.

The results for democracy indicate no effect for religious organizations, while nationalist and left-wing groups demonstrate increased levels of activity (both engaging in approximately six additional attacks over the autocratic baseline). Per capita GDP only has an effect for nationalist groups; four additional attacks occur for a *SD* change in the variable. Nationalist terrorist organizations such as Movement for the Emancipation of the Niger Delta (MEND) and Free Aceh Movement (GAM) have used arguments based on the wealth of the central government to justify their secessionism (Ross 2004).

RPC decreases the number of left-wing attacks by 2.5 per *SD* increase, while increasing the number of right-wing attacks by almost a third. Given that this measures a government's ability, a positive relationship here may denote the inclination of some governments to use right-wing groups as a coercive element of their policy (Mason and Krane 1989; Sprinzak 1995; Kydd and Walter 2006). The civil war variable is positive and significant for religious and nationalist groups, leading to approximately two and three additional attacks. This may indicate that these groups have larger goals, such as regime change, than groups of other ideologies and that a condition of warfare may be a good environment to pursue these goals (Kalyvas 2004). Finally, a *SD* change in the population variable increases the number of attacks by nationalist organizations by almost five, although outside of traditional significance levels, while reducing left-wing and right-wing attacks by five and a third, respectively.

Conclusion

While theories of outbidding have been central to explanations of terrorist actions for many years, few attempts have been made to subject them to empirical testing. This analysis, focusing on group level data, finds a nuanced relationship between competition and terrorist violence. Like Bloom (2005), I find that competition's effects depend on the state's acceptance of violence. Unlike typical outbidding

expectations, however, the results suggest that competition drags down, rather than increases, the number of terrorist attacks that occur. When this is analyzed visually, we see a weak form of outbidding. Specifically, we see that a greater acceptance of violence has a modest positive effect—or more accurately, a diminishing negative effect—on the relationship between competition and the number of terrorist attacks that occur.

Further, the effect varies once group ideology is taken into account. Left-wing organizations respond to competition and state tolerance of violence by reducing their violence—precisely responding to societal and political concerns. For religious and nationalist groups, in contrast, the slope is positive, meaning that competition leads to more attacks as a state becomes more tolerant of violence. Once again, this suggests a weak form of outbidding. The positive finding for religious organizations echoes previous scholarship that notes the particular ferocity of terrorism motivated by spiritual concerns. For nationalist organizations, this finding was unexpected; concerns about the control of the final outcome or the possibility of “othering” stand as two potential explanations for this finding.

In addition, this analysis utilized the organizational ecology literature to better operationalize the concept of competition. Previous discussions of outbidding and competition treated competition as occurring across ideologies—resources and recruits simply flow to the most active organization. Interviews and assessments of terrorist operatives have shown that this is not the case, recruits and resources are specific about their destination (Post, Sprinzak, and Denny 2003). As such, terrorist organizations can be theorized to operate via the “competitive exclusion” principle—competition only occurs between organizations of a similar type. This then allows us to create measures that take intra-“niche” competition into account.

This research also finally points to the value of considering the group as the unit of analysis. Work by Asal and Rethemeyer (2008) demonstrates this utility, showing that some organizational attributes have important impacts on organizational lethality while others do not. Here, this choice shows various levels of competition, and thus very disparate levels of violence, can exist within a state. Using larger units of analysis, like the state, threatens to obscure this valuable heterogeneity. By focusing on the group and utilizing concepts from different fields, we may begin to provide more clarity to this complex and menacing phenomena.

Acknowledgments

The author would like to thank Brian Lai, the members of the Kansas State Political Science Paper Workshop, and the two anonymous reviewers for their suggestions during the development of this study.

Author's Note

An electronic version of this article along with replication materials can be found on the author's website and on the *Journal of Conflict Resolution*'s website: <http://jcr.sagepub.com/>. A previous

version of this study was presented at the 2010 annual meeting of the American Political Science Association.

Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

Notes

1. This can also occur as a response to competition within the organization. Moderates may radicalize to prevent radical members from defecting to form a competing organization.
2. See Brym and Araj (2008) for a reexamination of Bloom's (2005) data and a critique of the outbidding hypothesis.
3. It is estimated that in 1979, Italy had approximately 217 left-wing and 52 right-wing terrorist organizations (Merlo 2006).
4. During the transfer of the files from their original owner to START, the files for 1993 were lost. Analyses using these data are all missing this time period.
5. The presence of international groups operating within a domestic "market" can potentially operate in two ways. If the group is recruiting, its presence would increase both competition and violence. If the international group is not recruiting and brings its own recruits, then the activity of that international group may have an unintended positive benefit by mobilizing domestic recruits which would then join available domestic organizations. Of course, this would only happen if the environment was suitable for outbidding. In unsuitable environments, the actions of the international group may exacerbate incentives for domestic groups to free ride.
6. TOPs are located at <http://www.start.umd.edu/start/data/tops/>.
7. A figure detailing the process of distinguishing international from domestic terror is available in the online supplement.
8. For years in which the ideological markets have no terrorist activity, I assume that each organization has an identical share equal to $1/N$.
9. This measure is called the *effective number of political parties* and provides an indication of "the number of hypothetical equal-sized parties that would have the same effect on fractionalization of the party system as have the actual parties of varying sizes" (Taagepara and Shugart 1989, 79).
10. Scores for all the states ($N = 82$) in the analysis are available upon request.
11. Figures showing the average level of competition over the analyzed time period using both the dichotomous and the trichotomous classifications of regime type are available in the online supplement.
12. I use the *Polity2* measure from the data set, this variable provides a twenty point scale created by subtracting the Autocracy score from the Democracy score while accounting

for the effects of transitions, interregnums, and interruptions. “Transitions” (–88) are interpolated across the span of the transition. “Interregnums” (–77) are given a neutral score of 0 and “interruptions” (–66) are coded as missing (Marshall, Gurr, and Jagers 2009).

13. There exists considerable debate on the definition of anocracy (see Regan and Bell 2009). Anocracies are basically regimes that have some attributes consistent with democracies and other attributes from autocracies. In essence, anocracies have:

The institutional capacity for some broader participation in the governing process, they have some institutional ability to facilitate candidate recruitment beyond the selection by a small cadre of anointed leaders, and they exhibit some political behaviors consistent with a budding civil society. Their autocratic and democratic counterparts display either considerably less or considerably more institutional capabilities, respectively (Regan and Bell 2009, 748).

14. *Grinter* works by plotting the marginal effect of the primary independent variable on the conditional variable while holding the other variables constant.
15. For a more detailed discussion of the construction of the variable, refer to Arbetman and Johnson (2008).
16. Substitution with the original *Polity* variable does not appreciably change the results.
17. This data set defines armed conflict as, “a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths” (UCDP/PRIO Armed Conflict Dataset 2009, 1). Four types of conflict are coded in the data: extrasystemic, interstate, internal conflict, and internationalized internal conflict. For the purposes of this study, I restricted the analysis to the last two forms of conflict.
18. First differences were calculated using CLARIFY 2.1 (Tomz, Wittenberg, and King 2003).
19. The AIC for the original model was 11,657.31. The AICs for the religious, nationalist, left-wing, and right-wing models were 931.38, 4,670.99, 5,213.52, and 440.62, respectively. These were calculated using the *estat ic* function in STATA.

References

- Abadie, Alberto. 2006. “Poverty, Political Freedom, and the Roots of Terrorism.” *American Economic Review* 96 (2): 50–56.
- Abrahms, Max. 2008. “What Terrorists Really Want.” *International Security* 32 (4): 78–105.
- Akaike, Hirotugu. 1973. “Information Theory and an Extension of the Likelihood Ratio Principle.” In *Second International Symposium of Information Theory* (Minnesota Studies in the Philosophy of Science), edited by B. N. Petrov and F. Csaki, 267–81. Budapest, Hungary: Akademiai Kiado.
- Anderson, Sean, and Stephen Sloan. 2002. *Historical Dictionary of Terrorism*. 2nd ed. Lanham, MD: Scarecrow Press.

- Arbetman, Marina, and Kristin Johnson. 2008. "Relative Political Capacity: Empirical and Theoretical Underpinnings." Paper presented at the 49th Annual Convention of the International Studies Association, San Francisco, CA, March 26–29.
- Asal, Victor, and R. Karl Rethemeyer. 2008. "The Nature of the Beast: Organizational Structure and the Lethality of Terrorist Attacks." *Journal of Politics* 70 (2): 437–49.
- Benson, Michelle, and Jacek Kugler. 1998. "Power Parity, Democracy, and the Severity of Internal Violence." *Journal of Conflict Resolution* 42 (2): 196–209.
- Bloom, Mia. 2005. *Dying to Kill: The Allure of Suicide Terror*. New York: Columbia University Press.
- Boehmke, Frederick. 2006. "Grinter: A Stata Utility for Graphing the Marginal Effect of an Interacted Variable in Regression Models." Retrieved from <http://myweb.uiowa.edu/fboehmke/methods.html>. Accessed January 10, 2010.
- Brambor, Thomas, William Clark, and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14 (1): 63–82.
- Brubaker, Rogers, and David Laitin. 1998. "Ethnic and Nationalist Violence." *Annual Review of Sociology* 24:423–52.
- Brym, Robert, and Bader Araj. 2008. "Palestinian Suicide Bombing Revisited: A Critique of the Outbidding Thesis." *Political Science Quarterly* 123 (3): 485–500.
- Bueno de Mesquita, Ethan. 2005. "The Quality of Terror." *American Journal of Political Science* 49 (3): 515–30.
- Burgoon, Brian. 2006. "On Welfare and Terror: Social Welfare Policies and Political-Economic Roots of Terrorism." *Journal of Conflict Resolution* 50 (2): 176–203.
- Calkins, Stephen. 1983. "The New Merger Guidelines and the Herfindahl-Hirschman Index." *California Law Review* 71 (2): 402–29.
- Cameron, Colin, and Pravin Trivedi. 1998. *Regression Analysis of Count Data*. Oxford, UK: Oxford University Press.
- Chenoweth, Erica. 2010. "Democratic Competition and Terrorist Activity." *Journal of Politics* 72 (1): 16–30.
- Crenshaw, Martha. 1981. "The Causes of Terrorism." *Comparative Politics* 13 (4): 379–99.
- Crenshaw, Martha. 1985. "An Organizational Approach to the Analysis of Political Terrorism." *Orbis* 29 (3): 465–89.
- Cronin, Audrey Kurth. 2009. *How Terrorism Ends: Understanding the Decline and Demise of Terrorist Campaigns*. Princeton, NJ: Princeton University Press.
- Della Porta, Donatella. 1992. "Institutional Responses to Terrorism: The Italian Case." *Terrorism and Political Violence* 4 (4): 151–70.
- Drakos, Konstantinos, and Andreas Gofas. 2006. "The Devil You Know but Are Afraid to Face: Underreporting Bias and Its Distorting Effects on the Study of Terrorism." *Journal of Conflict Resolution* 50 (5): 714–35.
- Enders, Walter, and Todd Sandler. 2000. "Is Transnational Terrorism Becoming More Threatening?: A Time-Series Investigation." *Journal of Conflict Resolution* 44 (3): 307–32.
- Eubank, William, and Leonard Weinberg. 1994. "Does Democracy Encourage Terrorism?" *Terrorism and Political Violence* 6 (4): 417–43.

- Eubank, William, and Leonard Weinberg. 1998. "Terrorism and Democracy: What Recent Events Disclose." *Terrorism and Political Violence* 10 (1): 108–18.
- Eyerman, Joe. 1998. "Terrorism and Democratic States: Soft Targets or Accessible Systems." *International Interactions* 24 (2): 151–70.
- Gibney, Mark, and Matthew Dalton. 1996. "The Political Terror Scale." *Policy Studies and Developing Nations* 4:73–84.
- Gleditsch, Kristian. 2002. "Expanded Trade and GDP Data." *Journal of Conflict Resolution* 46 (5): 12–24.
- Gleditsch, Nils Petter, Peter Wallenstein, Mikael Eriksson Margareta Sollenberg, and Håvard Strand. 2001. "Armed Conflict, 1946-2001: A New Dataset." *Journal of Peace Research* 39 (5): 615–37.
- Greene, William. 2002. *Econometric Analysis*. 5th ed. Upper Saddle River, NJ: Prentice Hall.
- Hamilton, Lawrence, and James Hamilton. 1983. "Dynamics of Terrorism." *International Studies Quarterly* 27 (1): 39–54.
- Hannan, Timothy. 1997. "Market Share Inequality, the Number of Competitors and the HHI: An Examination of Bank Pricing." *Review of Industrial Organization* 12 (1): 23–35.
- Herfindahl, Orris. 1950. *Concentration in the Steel Industry*. PhD Diss., Columbia University.
- Hirschman, Albert. 1945. *National Power and the Structure of Foreign Trade*. Berkeley: University of California Press.
- Jackson, Brian, John Baker, Kim Cragin, John Parachini, Horacio Trujillo, and Peter Chalk. 2005. *Aptitude for Destruction: Organizational Learning in Terrorist Groups and its Implications for Combating Terrorism*. Santa Monica, LA: RAND Corporation.
- Jones, Seth, and Martin Libicki. 2008. *How Terrorist Groups End: Lessons for Countering al Qaeda*. Santa Monica, LA: RAND Corporation.
- Juergensmeyer, Mark. 2003. *Terror in the Mind of God*. Berkeley: University of California Press.
- Kalyvas, Stathis. 2004. "The Paradox of Terrorism in Civil War." *Journal of Ethics* 8 (1): 97–138.
- Kalyvas, Stathis and Adam Kocher. 2007. "How 'Free' is Free Riding in Civil Wars?: Violence, Insurgency, and the Collective Action Problem." *World Politics* 59(2): 177–216.
- Kellen, Konrad. 1979. *Terrorists-What are they Like? How Some Terrorists Describe Their World and Actions*. Santa Monica, LA: RAND Corporation.
- Krueger, Alan, and Jitka Maleckova. 2003. "Education, Poverty, and Terrorism: Is There a Causal Connection?" *Journal of Economic Perspectives* 17 (4): 119–44.
- Kydd, Andrew, and Barbara Walter. 2006. "The Strategies of Terrorism." *International Security* 31 (1): 49–80.
- Lai, Brian. 2007. "'Draining the Swamp': An Empirical Examination of the Production of International Terrorism, 1968-1998." *Conflict Management and Peace Science* 24 (4): 297–310.
- Laqueur, Walter. 1977. *A History of Terrorism*. New York: Little, Brown & Co.
- Li, Quan. 2005. "Does Democracy Promote or Reduce Transnational Terrorism Incidents?" *Journal of Conflict Resolution* 49 (2): 278–97.
- Lichbach, Mark Irving. 1995. *The Rebel's Dilemma*. Ann Arbor: University of Michigan Press.

- Long, J. Scott. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage.
- Lowery, David, and Virginia Gray. 1995. "The Population Ecology of Gucci Gulch, or the Natural Regulation of Interest Group Numbers in the American States." *American Journal of Political Science* 39 (1): 1–29.
- Manconi, Luigi. 1991. "The Political Ideology of the Red Brigades." In *The Red Brigades and Left-Wing Terrorism in Italy*, edited by R. Catanzaro, 115–43. London, UK: Pinter.
- Maoz, Zeev. 2007. "Evaluating Israel's Strategy of Low-Intensity Warfare, 1949-2006." *Security Studies* 16 (3): 319–49.
- Marshall, Monty, Ted Gurr, and Keith Jagers. 2009. *Polity IV Project: Political Regime Characteristics and Transitions, 1800-2009*. <http://www.systemicpeace.org/polity/polity4.htm>. Accessed November 23, 2010.
- McAllister, Bradley, and Alex Schmid. 2011. "Theories of Terrorism." In *The Routledge Handbook of Terrorism Research*, edited by A. Schmid, 201–71. New York: Routledge.
- Merlo, Germana Tappero. 2006. "Italy." In *Counterterrorism Strategies: Successes and Failures of Six Nations*, edited by Alexander Yonah, 99–114. Dulles, VA: Potomac Books.
- Moloney, Ed. 2010. *Voices from the Grave: Two Men's War in Ireland*. New York: PublicAffairs.
- Mullins, Christopher, and Joseph Young. 2012. "Cultures of Violence and Acts of Terror: Applying a Legitimation-Habituation Model to Terrorism." *Crime & Delinquency* 58 (1): 28–56.
- National Consortium for the Study of Terrorism and Responses to Terrorism (START). (2009). Global Terrorism Database [Data file]. <http://www.start.umd.edu/gtd> (Accessed March 15, 2009)
- Olson, Mancur. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.
- Oots, Kent Layne. 1989. "Organizational Perspectives on the Formation and Disintegration of Terrorist Groups." *Studies in Conflict and Terrorism* 12 (3): 139–52.
- Organski, A. F. K., and Jacek Kugler. 1980. *The War Ledger*. Chicago: University of Chicago Press.
- Piazza, James. 2006. "Rooted in Poverty? Terrorism, Poor Economic Development, and Social Cleavages." *Terrorism and Political Violence* 18 (1): 159–77.
- Piazza, James. 2008. "Incubators of Terror: Do Failed and Failing States Promote Transnational Terrorism?" *International Studies Quarterly* 52 (3): 469–88.
- Piazza, James. 2009. "Is Islamist Terrorism More Dangerous? An Empirical Study of Group Ideology, Organization, and Goal Structure." *Terrorism and Political Violence* 21 (1): 62–88.
- Post, Jerrold, Ehud Sprinzak, and Laurita Denny. 2003. "The Terrorists in Their Own Words: Interviews with 35 Incarcerated Middle Eastern Terrorists." *Terrorism and Political Violence* 15 (1): 171–84.
- Regan, Pat, and Sam Bell. 2010. "Changing Lanes or Stuck in the Middle: Why Are Anocracies More Prone to Civil Wars?" *Political Research Quarterly* 63 (4): 747–59.
- Rhodes, Stephen. 1993. "The Herfindahl-Hirschman Index." *Federal Reserve Bulletin* 79: 188–89.

- Rosendorff, B. Peter, and Todd Sandler. 2005. "The Political Economy of Transnational Terrorism." *Journal of Conflict Resolution* 49 (2): 171–82.
- Ross, Jeffrey, and Ted Robert Gurr. 1989. "Why Terrorism Subsides: A Comparative Study of Canada and the United States." *Comparative Politics* 21 (4): 405–26.
- Ross, Michael. 2004. "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases." *International Organization* 58 (1): 35–67.
- Samuelson, Paul. 1954. "The Pure Theory of Public Expenditure." *Review of Economics and Statistics* 36 (4): 387–89.
- Sanchez-Cuenca, Ignacio, and Luis de la Calle. 2009. "Domestic Terrorism: The Hidden Side of Political Violence." *Annual Review of Political Science* 12:31–49
- Sarkees, Meredith Reid, and Frank Wayman. 2010. *Resort to War: 1816–2007*. Washington, DC: CQ Press.
- Schmid, Alex. 1992. "Terrorism and Democracy." *Terrorism and Political Violence* 4 (4): 14–25.
- Schmid, Alex, and Albert Jongman. 1988. *Political Terrorism: A New Guide to Actors, Authors, Concepts, Data Bases, Theories, and Literature*. Amsterdam, Netherlands: North Holland.
- Siqueira, Kevin, and Todd Sandler. 2006. "Terrorists versus the Government: Strategic Interaction, Support, and Sponsorship." *Journal of Conflict Resolution* 50 (6): 878–98.
- Taagepara, Rein, and Matthew Shugart. 1989. *Seats and Votes*. New Haven, CT: Yale University Press.
- Takeyh, Ray, and Nikolas Gvosdev. 2002. "Do Terrorist Networks Need a Home?" *The Washington Quarterly* 25 (3): 97–108.
- Tomz, Michael, Jason Wittenberg, and Gary King. 2003. *Clarify: Software for Interpreting and Presenting Statistical Results*. Version 2.1. Cambridge: Harvard University. Retrieved from <http://gking.harvard.edu>
- U.S. Department of State. *Office of the Coordinator for Counterterrorism. Various Years. Patterns of Global Terrorism*. Washington, DC: U.S. Department of State
- Waugh, William. 1983. "The Values in Violence: Organizational and Political Objectives of Terrorist Groups." *Conflict Quarterly* 3 (4): 5–19.
- Wolf, John. 1978. "Organization and Management Practices of Urban Terrorist Groups." *Terrorism: An International Journal* 1 (2): 169–86.
- Wright, Lawrence. 2006. *The Looming Tower: al-Qaeda and the Road to 9/11*. New York: Vintage.