

Voters versus Terrorists: Analyzing the Effect of Terrorist Events on Voter Turnout

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Abstract

Scholars and policy makers commonly assume terrorism is intended to affect a broader audience beyond the physically targeted victims. Informed by scholarship regarding the effects of heuristics and emotion on political cognition and behavior, particularly the Affective Intelligence model, we evaluate the impact of terrorism on the broader audience of the electorate as manifested by voter turnout. While conventional explanations of turnout are important, they do not reliably capture other well-known relationships, such as attitudinal responses to international political crises (e.g., the rally-around-the-flag effect). We hypothesize and then demonstrate that terrorism stimulates greater voter turnout. The cross-national analyses, which include 51 democracies and use two geographically and definitionally distinct data sets, indicate the relationship is non-trivial and robust.

* This is a pre-print, which represents the manuscript prior to editorial processing by *JPR*. The final revisions do not substantially change the findings or analyses.

On January 24, 2011, a terrorist attack at Domodedovo Airport in Moscow, Russia resulted in the deaths of dozens of citizens and injuries to many others. Doku Umarov, a terrorist leader from the Caucasus region, publicly announced that he and his organization were behind this attack. Umarov stated the motivation for this high-profile attack in Russia's capital city was to influence the upcoming Russian elections, including participation in those elections (Ferris-Rotman 2011). Knowledgeable observers typically assume that terrorist attacks are intended to affect an audience much larger than the physically targeted victims, as is intimated in Umarov's statements (e.g., Crenshaw 2000). But is this assumption by scholars, policy makers, and even terrorists supported in terms of the effects of terrorism on a broader audience?

Work on voter turnout has focused on a myriad of causal mechanisms including political culture, economics, and political institutions (Almond and Verba 1963; Jackman 1987; Jackman and Miller 1995; Pacek *et al.* 2009; Pacek and Radcliff 1995 Powell 1980, 1986). While empirical evidence for these claims remains quite convincing, studies on turnout have generally overlooked terrorism (see though Bali 2007; Lago and Montero 2006; Rose *et al.* 2007) despite the increased attention terrorism research has received lately (Young and Findley 2011). This is even more surprising since there is a wealth of evidence suggesting that violent political conflict can have a significant impact on public opinion (such as rally-around-the-flag effects [Mueller 1973; Mueller and Bryan 1995]), and since terrorism is a political tactic that has caused more than 65,000 deaths in about 28,260 attacks in 150 countries since 2001 (START 2011a).

This study addresses gaps in both the turnout and terrorism literatures by assessing the impact of terrorist attacks on voter turnout in legislative elections. We argue and then demonstrate that terrorist attacks lead to higher voter turnout rates. We begin with the common assumption that terroristic violence is intended to create a sense of fear in a broader audience

than the immediate victims who were targeted for physical harm (e.g., Crenshaw 2000; Hoffman 2006; Schmid and Jongman 2005; Silke 2011). Then, we invoke the Affective Intelligence model and findings that emotion plays a key role in both political cognition and political behavior (e.g., Brader 2005, 2006; Lambert et al. 2010; Marcus and MacKuen 1993; Marcus, Neuman, and MacKuen 2000; Pagano and Huo 2007; Sasley 2010). In particular, we view terrorist attacks as threatening and novel political events that induce anxiety in the electorate, which, in turn, leads individuals to scrutinize the political environment more closely and to ascribe greater salience to proximate political events. As a result of this increase in concern with the political environment and increased salience of upcoming elections, we expect voter turnout to increase.

In the following we present a review of the factors that affect voter turnout, the role of emotion in political behavior, and the interaction of political behavior and terrorism. Next, we describe the data, variables, and methodology used to test our hypotheses. In particular, we test the robustness of our argument using two distinct data sets, which cover different geographic areas and use different definitions of terrorism. We follow with a presentation and interpretation of the empirical results then conclude with a discussion of the implications of our study.

Explanations of Voter Turnout

Voter turnout has been widely studied. Many explanations have been offered for variations in voter turnout throughout the world. These accounts have ranged from cultural (Almond and Verba 1963), to economic (Pacek and Radcliff 1995a, b, c; Radcliff 1982), and to various political factors—such as electoral systems, regime type, federalism, and party systems (Jackman 1987; Jackman and Miller 1995; Kostadinova and Power 2007; Powell 1980, 1986). Others, meanwhile, have argued that the nature of specific elections, such as their salience or competitiveness, is meaningful (Blais and Carty 1990; Blais and Dobrzynska 1998; Gosnell

1930; Jackman 1987; Jackman and Miller 1995; Powell 1980, 1986; Tingsten 1937).

While clearly important, these works do not directly address the menace of terrorism.

Terrorism is a leading issue for many countries in the world today. Terrorism policy often holds a high-profile position in countries' domestic political agendas, making it all the more surprising that little work has examined the implications of terrorist attacks.

The Connection Between Voter Turnout and Terrorism

Numerous studies have emerged to explain why terrorist events occur. One school of thought suggests that democracies make more attractive targets than non-democracies. This association rests on the premise that political and civil liberties are more respected in democracies so terrorists are freer to operate (Eubank and Weinberg 1994). Some contend that democratic processes engender greater friction among groups, which causes disagreements that eventually lead to attacks (Chenoweth 2010). Meanwhile, others have suggested that democracies make appealing targets because their citizens and, therefore, their governments, are more responsive to competing political activities than non-democracies (Pape 2005).

More specifically, Pape (2005) argues that terrorists want to influence policymaking, which they are more likely to achieve by targeting democracies because of democracies' large and politically salient electorates that terrorists can access via the media through their attacks. Although Pape provides some evidence to support his claim (but see Abrahms 2006), he largely neglects to discuss a causal mechanism that leads to these political changes. This is an important link to make since any change in a democracy should be associated with some reaction by voters to the terrorist attacks. Yet despite all the work on terrorism (for an overview see Young and Findley 2011), few have investigated this assumption.

A number of scholars conducted case studies regarding the effect of terrorism on Spanish

politics following the 2004 Madrid bombings (Bali 2007; Rose *et al.* 2007). For example, Lago and Montero (2006) examine the effect of the attack on the subsequent elections in Spain. The attack killed 191 people, and the conservative governing party (Popular Party) was voted out of office three days later. Lago and Montero argue that the attacks did not alter voters' perceptions of the Spanish political parties competing in the election, but rather, they increased the intensity by which voters negatively viewed the policies of the then governing Popular Party and prompted previous abstainers to go to the polls. Thus, the attacks in Spain worked to increase voter awareness of dissatisfaction with the policies of the governing party while simultaneously mobilizing dissatisfied voters in the wake of the attacks. Following the single-country study approach, Berrebi and Klor (2008) have conducted a similar study within the Israeli context.

We argue that terrorist events trigger higher turnout rates and, unlike previous research, test this assertion in a cross-national context. Our approach is motivated by the assumption that terrorists attack in order to induce a wider sense of fear and not simply to harm the actual targeted victims (e.g., Crenshaw 2000; Hoffman 2006; Schmid and Jongman 2005; Silke 2011). This perspective is rooted in heuristics models that rely on group differences, threat, and inter-group conflict to account for fluctuations in participation rates (Fieldhouse and Cutts 2008; Leighley and Vedlitz 1999; Mathews and Prothro 1968). Together, these studies contend that as citizens feel increasingly threatened in their environment (e.g., racially, socially, or economically), they become more inclined to take part in the political process in order to ensure that their voices are heard. Furthermore, given the widespread media coverage of terrorist events (Hoffman 2006) and the relevance of violence to citizens' own survival, we add terrorist attacks to the list of environmental threats that are likely to increase political participation. Threatening environments have been linked with a number of important developments that have bearing on

this study. Sales (1973) reports that threatening environments produce behavioral and psychological changes in general and result in an affinity for what earlier work labeled the ‘authoritarian’ syndrome (Adorno et al. 1950). Here, individuals express greater appreciation for cultural images of toughness, ‘law-and-order’ public policies, and deeper affinity for sources of authority. By extension, McCann (1997) reaches a related conclusion as he notes that ‘strong’ presidential candidates thrive in threatening environments (as indicated by vote share won) but struggle in non-threatening elections. The common thread in many of these studies is that threatening environments (which terrorist attacks generally produce) result in behavioral changes as noted above. These events also cause a rise in feelings of anxiety that may give way to greater political interest on the part of the citizenry (Marcus et al. 2000). That is, of course, if the threat is novel. If it is, then the resulting feelings are likely to be anxiety which should trigger greater interest in one’s political context; if the threat is longer-term (or recurring) then aversion will likely supplant feelings of anxiety (Marcus et al. 2010). Elsewhere, other scholars have noted that anxiety does not always prompt individuals to become more informed on a topic, issue, campaign, etc. Nadeau et al. (1995) suggest that anxiety is *indirectly* related to political learning. Anxiety prompts greater political learning if individuals feel as though they can realistically affect the outcome or issue at hand. If optimism prevails then anxiety will result in more political learning but pessimistic outlooks appear to wash out any effects of anxiety. Still, much of the literature finds that threatening environments trigger feelings of anxiety and that in many cases these feelings produce greater awareness of the political system and engender higher levels of political learning, both of which have been linked with a greater inclination to vote. The rest of this section surveys the literature on this subject and elaborates on the specific political implications of emotions.

A number of studies have found that emotion—such as anger, anxiety, enthusiasm, and guilt—plays an important role in political cognition and political behavior. For example, Marcus et al. (2000), in arguably the most thorough and powerful statement on the role of emotion in political behavior, find that people who are anxious about political candidates are more likely to be interested in the campaign, care who wins, follow the campaign in the media, learn more about the campaign, and participate in electoral activities beyond voting.¹ Similarly, Brader (2005, 2006) finds that political ads that evoke emotional responses (i.e., fear and enthusiasm) can influence individuals' electoral participation, while Valentino et al. (2011) demonstrate that anger in particular motivates nonvoting political participation. In further research into the effects of emotion on political considerations, Pagano and Huo (2007) show that empathy, guilt, and moral outrage play important roles in individuals' policy preferences regarding post-war Iraq; Lambert et al. (2010) find that anger among the electorate motivates the rally-around-the-flag effect on presidential approval during international conflict; and Sasley (2010) demonstrates that leaders with greater affect toward a political object exhibit less flexibility in foreign policy regarding that object. Additionally, Erikson and Stoker (2011) find that perceived vulnerability stimulated by a low lottery number for the Vietnam draft provoked long-term changes in attitudes toward the war as well as effects on partisanship, ideology, and issue attitudes.

Marcus et al. (2000) attribute such responses to the disposition and surveillance psychological systems, as embodied in their model of Affective Intelligence. The disposition system, which is active most of the time, leads people to rely on long-term dispositions such as habitual voting (or abstention) or party identification, while the surveillance system, which is activated when people become anxious, detects novelty and/or danger in the environment and

¹ Unfortunately, Marcus and his co-authors did not test the decision to vote or abstain.

drives people to pay attention, acquire more information, and re-assess the situation. In this research, we invoke the surveillance system. That is, increased anxiety, whether driven by candidate choice, economic conditions, group threat, or, of course, terroristic violence, leads citizens to scrutinize more closely the political environment and processes and, by extension, to exhibit an increased propensity to vote to protect their seemingly threatened interests (Marcus *et al.* 2000). Clearly, we view terrorist attacks as events that fuel anxiety, fear, and scrutiny, which trigger the surveillance system and drive people to become more interested in voting in an election and, therefore, to become more likely to vote in an election.

Indeed, available public opinion data suggest that terrorism is associated with increased anxiety and perceptions of threat. For instance, regarding citizens in the United States, Bloch-Elkon (2011, 380) concludes:

Personal concerns seemed to rise after major terrorist acts and when official terrorism alerts were issued. Thus, following the bombings of London's transit system (July 2005), 47% of Americans were concerned ("worried" or "somewhat worried") about the possibility that they or their families could become terrorist victims, whereas only 38% expressed these concerns before the events in London. After officials in the nation's capital warned of possible terror attacks in the United States before the presidential elections in early 2004, Americans' level of concern about their own well-being and that of their families increased from 34% in early August to 43% in early September and 47% in mid-October... Following the attempted airplane bombing on Christmas Day 2009...42% of Americans were very or somewhat worried...about their own or their family's safety, whereas 39%...expressed these concerns in mid-December, before the attempted terrorist attack.

Evidence suggests this response is not unique to the United States. A 2009 survey of citizens of the United Kingdom found that 46% of respondents concluded that “people are more frightened or anxious than they used to be” because of terrorism (Mental Health Foundation 2009). Further, a 2007 survey showed 42% of British adults were more “nervous” about air travel following a reported plot to destroy trans-Atlantic airliners (YouGov 2006).

The argument presented here suggests that perceived threat heightens the importance an electorate attributes to an election, which leads to greater turnout. This perspective is consistent with recent work that has looked at the effect of election salience on turnout. In short, a number of studies have found that some elections hold greater meaning to an electorate than others. Voters identify these elections and respond accordingly. In particular, turnout levels tend to rise in more salient elections (e.g., Jackman 1987). Furthermore, Pacek *et al.* (2009) present a similar argument with respect to elections in former Communist states. Here, they argue that the “stakes based approach,” whereby turnout is higher when perceived salience is greater, amounts to greater electoral participation. And, while they do not study terrorism, we believe the arguments offered by Pacek *et al.* (2009) and Jackman (1987) have immediate relevance in that terrorist events garner tremendous attention, generate widespread interest in previous and future attacks, and raise anxiety levels, which together should heighten electoral salience.

Having said this, it is important to specify clearly how terrorist attacks are expected to impact turnout. Specifically, we assert that the occurrence of a terrorist attack prior to an election boosts turnout compared to pre-election periods of no terrorist attacks, as a terrorist event would trigger the surveillance system. Formally stated, we expect that:

Hypothesis 1: The occurrence of a pre-election terrorist event (0, 1) is associated with greater voter turnout rates.

Though testing the existence of attacks can be useful, it is reasonable to expect that the occurrence of a more severe attack induces even greater anxiety, and, therefore, a stronger electoral response. We anticipate that the occasion of a lethal terrorist attack will provoke a greater reaction than a non-lethal attack, because a lethal attack represents a greater threat to survival and gives rise to greater anxiety than a non-lethal attack. We expect that:

Hypothesis 2: The occurrence of a lethal pre-election terrorist event (0, 1) is associated with greater voter turnout rates than the occurrence of a non-lethal terrorist event (0, 1).

What happens when more than one event occurs before an election? We hypothesize that more attacks trigger greater threat and anxiety. We expect a compounded effect: turnout levels should increase as the number of attacks and the fatalities stemming from attacks before an election increases. Formally stated, we expect:

Hypothesis 3a: The number of terrorist events is positively related to turnout rates.

Hypothesis 3b: The number of fatalities resulting from terrorist events is positively related to turnout rates.

Data and Methods

For the purpose of assessing the robustness of our results, we employ two distinct sources of terrorism data, the Global Terrorism Database (GTD; START 2011b) and Terrorism in Western Europe: Events Data (TWEED; Engene 2007). The two data sets differ in their geographic coverage and the types of terroristic events they include. GTD includes data from countries across the globe, while TWEED includes data only from Western Europe. Notably, GTD uses a very broad definition of terrorism, which includes both international and domestic

events, while TWEED focuses more narrowly on domestic events. Although the literature on international versus domestic terrorism is in its early stages, Young and Findley (2011) assert this is a worthwhile distinction to make because the two types of events could be motivated by fundamentally different processes. Employing both data sets, then, allows us to test the robustness of our argument across fundamentally different contexts and conceptions.

We have compiled terrorism data on 51 democracies in the GTD spanning more than thirty years (1975-2007). To identify democracies in the 208 countries covered by the GTD, we use a common approach whereby countries that scored at least a six on the PolityIV scale were included (PolityIV Project 2000). The states under review come from all backgrounds and regions, including: Africa, Asia, Europe, Latin America, and OECD members. Though nondemocratic and quasi-democratic states often have elections, the turnout figures reported are often unreliable, inaccurate, and/or manipulated; hence, they are excluded in the present analysis. The Appendix provides a list of the countries and election years used here.

TWEED includes terrorism data from 18 democracies in Western Europe spanning more than 50 years (1950-2004). The countries are Austria, Belgium, Denmark, Finland, France, (West) Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. Events taking place in Northern Ireland are included in the United Kingdom. Due to limitations from our control variables, we analyze the years 1975-2004.

Dependent Variable: Voter Turnout

We operationalize our dependent variable as the percentage of eligible registered voters who cast a ballot in a legislative election (lower chamber only). Legislative turnout is a common metric as seen in multiple works (Blais and Dobrzynska 1998; Franklin 1999; Kostadinova 2003;

see also Geys 2006). Turnout data were gathered from the International Institute for Democracy and Electoral Assistance's (IDEA) website (IDEA 2008). This study focuses on turnout in legislative elections for multiple reasons. With few exceptions, most studies have also emphasized turnout in these contests (Blais and Dobrzynska 1998; Kostadinova 2003; Kostadinova and Power 2007). More importantly, however, the number of presidential elections pales in comparison to the legislative contests. Numerous observations are lost when presidential and legislative races are tested separately; therefore, we retain our focus on legislative contests.

Primary Independent Variables: Terrorist Attacks

There are no shortages in what is considered to be a terrorist attack (e.g., Abrahms 2006; Chenoweth 2010; Pape 2005; Li 2005), so we employ two reliable data sets with distinct definitions. The GTD defines a terrorist attack as “an intentional act of violence or threat of violence by a non-state actor” in which two of the following three criteria also have to be met:

1. The violent act was aimed at attaining a political, economic, religious, or social goal;
2. The violent act included evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) other than the immediate victims; and
3. The violent act was outside the precepts of International Humanitarian Law (Global Terrorism Database, n.d.).

TWEED, on the other hand, defines a terrorist attack as “an act [by a non-state agent] that has inflicted personal injury, or attacks against material targets (property) if the act is of a nature that could have led to personal injury or in another way would have a noticeable impact on an audience, while at the same time the act was committed to direct demands of or raise attention from others than those immediately inflicted with personal or material injury” (Engene 2006, 5). TWEED focuses exclusively on Western European domestic terrorism. The data set excludes

acts by agents “from countries outside the region and [when] the act is directed against targets in other countries than the country the agents originate from” (Engene 2006, 5), but includes events that involve more than one country in the region.

We account for the number of terrorist attacks, both non-lethal and lethal, that occur in a country in the 365 days preceding the country’s specified legislative election. This time period was chosen to comport with conventional psychological barriers regarding time frames (Huttenlocher, Hedges, and Bradburn 1990). Although some studies find that the aftermath of terrorist events are ephemeral, most works have found that these effects can last one year or more (for an overview see Sinclair and Antonius 2012). Psychological research has found that major attacks (e.g., 9/11, London Subway bombing, Madrid Train bombing, etc.) alter individuals’ ability to process information and evaluate everyday choices in their lives yet these changes, often times, take months to manifest themselves; therefore, using shorter time horizons is likely to be unable to capture these effects (2012). Furthermore, using shorter time frames (e.g., a 30 day time period is one common example) may prove beneficial though surprisingly few terrorist attacks were committed in the month prior to an election—at least for the democracies reviewed here—thus complicating data analysis. Table I details differences between the two sources of data. The GTD coding and the IDEA voter turnout data yield 365 election-years for 51 countries that include 11,555 fatalities from 8,481 terrorist attacks from 1975-2007. The typical election-year included 31.7 fatalities from terrorism and 23.2 terrorist attacks. The TWEED coding and the IDEA voter turnout data yield 144 election-years for 18 countries that include 418 fatalities from 1,152 terrorist attacks from 1975-2004. The typical election-year included 2.9 fatalities from terrorism and 8.0 terrorist attacks. The bivariate correlation between the number of attacks reported in each data set is moderate ($r = .48$, $p <$

.001), while the correlation between the number of fatalities is somewhat weaker ($r = .38$, $p < .001$). These moderate correlations are expected given the data sets' different geographic coverage and types of terroristic events they include and are desired given the need to test the robustness of findings. Lastly, we find that there were zero events in approximately 33 % of our cases and in these situations voter turnout averages around 75% (Global Terrorism Database, n.d.). When at least one terrorist event has occurred turnout averages around 76%. Conversely, using the TWEED dataset we find that there were zero events in approximately 60% of our cases, and turnout rates were, on average, 80% in situations where no terrorist event had occurred in the previous 365 days. When one or more terrorist event had occurred, average turnout was roughly 78%.

<Table I About Here>

Controls

We include several common economic, political, and social control variables in the turnout literature: GDP per capita, compulsory voting, concurrent executive-legislative elections, legislative party fractionalization, mean district magnitude, presidential systems, and total population (Aguilar and Pacek 2000; Almond and Verba 1963; Blais and Dobrzynska 1998; Fornos *et al.* 2004; Franklin 1999; Gray and Caul 2000; Jackman 1987; Jackman and Miller 1995; Kostadinova 2003; Kostadinova and Power 2007; Kuenzi and Lambright 2007; Pacek and Radcliff 1995; Powell 1986; Remmer 1991).

The economic control, GDP per capita, is lagged one year and based on constant 2000 U.S. Dollars. It comes from the World Bank's WDI (2007) database. Several of the controls for political institutions come from and are updates of Beck *et al.*'s (2004) Database of Political Institutions (DPI). These measures include mean district magnitude of the lower legislative

chamber, legislative party fractionalization, and presidential systems (coded one for a presidential system and zero otherwise). Other controls come from the New Electoral Systems Dataset (Johnson and Wallack 2008) or are derived from data reported on the IDEA website. Concurrent executive-legislative elections (coded one for concurrent and zero otherwise) and compulsory voting (coded one for a compulsory law, either enforced or unenforced, and zero otherwise) are derived from IDEA data. Further, each model includes a measure of lagged turnout to capture the habitual effects of voting (Geys 2006; Plutzer 2002).

Finally, total population, which is lagged one year, comes from the World Bank's WDI (2007) database. Table II reports summary statistics of the dependent and independent variables.

< Table II About Here >

Methodology

The IDEA voter turnout measure, our dependent variable, is structured in this study as panel data, which provide multiple observations on each country over time. The use of panel data for political research has a number of advantages over conventional cross-sectional or time-series data (Hsiao 2003). As is common in the analyses of panel data, our data sets are unbalanced, which indicates there are unequal observations across countries. Relationships in panel data may be estimated using panel regression, which includes fixed-, random-, and between-effects models (Stock and Watson 2003). In order to select the correct model, Hausman tests were conducted on all models reported in this study. All tests were statistically significant ($p < .001$; GTD: $\chi^2_{\min} = 267.21$, TWEED: $\chi^2_{\min} = 53.73$); therefore, the relationships in this study are estimated using fixed-effects models. Further, besides capturing the effects of habitual voting, the lagged dependent variable controls for autocorrelation, which is an appropriate control as indicated by statistically significant Wooldridge tests for each model.

Findings

Does terrorism impact voter turnout? According to the following findings, the answer is clearly “yes.” Our discussion of the findings will begin with Hypothesis 1 and proceed sequentially to Hypothesis 4. In each model, the controls primarily perform as expected. In particular, voter turnout tends to be meaningfully associated with legislative fractionalization (in most models), concurrent elections, presidential systems, and national wealth.

Hypothesis 1 states that the occurrence of a terrorist event before an election will be associated with greater voter turnout. For Model 1, our primary variable of interest, the occurrence of a terrorist attack or not, is coded one if there was an attack or attacks within the 365 days before the election and zero otherwise. The results presented in Table III support this assertion. The findings from both the GTD data, which represent international and domestic terrorist events in democracies across the globe, and the TWEED data, which represent only domestic terrorist events in democracies in Western Europe, suggest that the occurrence of an attack or attacks is associated with a 2.0% increase ($p = .02$) and 2.1% increase ($p \leq .01$) in voter turnout, respectively, compared to an election in which there is no terrorist event in the preceding year.

< **Table III About Here** >

Following our argument that the occurrence of a more severe attack or attacks provokes a greater reaction, Hypothesis 2 states that the occurrence of a lethal terrorist event before an election is associated with an even greater increase in voter turnout than the occurrence of a non-lethal terrorist event. Model 2 includes two primary variables of interest, both of which are indicator variables. The first variable indicates the occurrence or not of a non-lethal terrorist event, which is coded one if such an event occurred in the 365 days preceding an election and

zero otherwise. The second variable indicates the occurrence or not of a lethal terrorist event in the 365 days preceding the election, which is coded one if such an event occurred in the 365 days preceding an election and zero otherwise. The comparison group is the election years in which no terrorist events occur. Again, the results generally support our expectation—with one exception—that increased terroristic threat is associated with increased turnout (Hypothesis two). More specifically, Table III shows that while the occurrence of a non-lethal event in the GTD countries increases turnout by 1.4% ($p = .08$) relative to an election in which there is no terrorist event in the preceding year, the occurrence of a lethal event increases turnout by 2.9% ($p < .01$). Further, the magnitude of effect of a lethal event is substantively twice that of a non-lethal event and marginally statistically distinguishable from that of a non-lethal event (Wald test: $p < .06$). Not only that, but the occurrence of a non-lethal attack in GTD countries falls just short of statistical significance though the remaining indicators for Hypothesis two were statistically significant. Moreover, the TWEED results suggest that a non-lethal event is associated with a 2.0% increase in turnout ($p = .04$), while a lethal event is associated with a 2.2% increase ($p = .04$). In this case, though, the difference in magnitude of effect, while increasing as expected, is not statistically distinguishable from zero ($p = .44$).

Models one and two provide support for the argument that, by most accounts, terroristic violence preceding an election is generally associated with greater turnout. The next models shift to more refined measures of terrorism, in which we estimate the effect on turnout of an individual event. Following Hypotheses 3a and 3b, we expect turnout to increase as the number of terroristic attacks and fatalities increases. For Models 3a and 3b, our primary variables of interest are the logged number of terrorist events that occur within the 365 days before the election (Model 3a) and the logged number of fatalities from terrorism that occur within the 365

days before the election (Model 3b).² The results presented in Table IV generally support both hypotheses. More specifically, a 1% increase in terrorist events in the GTD countries is associated with a 0.3% increase in turnout ($p < .01$), which translates substantively, with all other independent variables held at their appropriate mean or mode, into a 4.5% increase in voter turnout when moving from the minimum number of events (zero) to the maximum number of events (551 or log transformed 6.3) and a 3% increase when moving from one standard deviation below to one standard deviation above the mean number of events. Similarly, a 1% increase in terrorist events in Western Europe is associated with a 0.3% increase in turnout ($p < .01$), which translates substantively, with all other independent variables held at their appropriate measure of central tendency, into a 3.0% increase in turnout when moving from the minimum number of events (zero) to the maximum number (157 or log transformed 5.1) and a 2.2 %age-point increase when moving from one standard deviation below to one standard deviation above the mean number of events.

< Table IV About Here >

Similarly, a 1% increase in fatalities resulting from terrorist events in the GTD countries is associated with a 0.2% increase in turnout ($p = .01$), which translates substantively, with all other independent variables held at their appropriate mean or mode, into a 3.4% increase when moving from the minimum number of fatalities (zero) to the maximum number (1072 or log transformed 7.0) and a 2.3% increase when moving from one standard deviation below to one standard deviation above the mean number of fatalities. Again, the TWEED results are consistent

² Prior to estimation, we add .001 to each measure to capture observations with the value of zero (i.e., no events or fatalities), which otherwise would be discarded as undefined, then log the measures to address positive skew. The transformed values are followed by the untransformed values, which appear in parentheses: GTD Events: skewness = -0.5 (5.0), kurtosis = 1.6 (33.8); TWEED Events: skewness = 0.6 (4.0), kurtosis = 1.5 (21.9); GTD Fatalities: skewness = 0.6 (5.7), kurtosis = 1.8 (37.4); TWEED Fatalities: skewness = 0.9 (4.4), kurtosis = 2.0 (24.2).

with the GTD results and supportive of the hypotheses. That is, a 1-% increase in fatalities is associated a 0.2% increase in turnout ($p < .05$), which translates substantively, with all other independent variables held at their appropriate measure of central tendency, into a 2.2% increase when moving from the minimum number of fatalities (zero) to the maximum number (57 or log transformed 4.0) and a 1.6 % increase when moving from one standard deviation below to one standard deviation above the mean number of fatalities.

The first models support the presence of a basic, positive linear relationship between terrorism and turnout. They are consistent with the assertion that terrorism is associated with greater turnout because terrorist attacks are threatening and novel political events that induce anxiety in the electorate, which, in turn, leads individuals to scrutinize the political environment more closely, to ascribe greater salience to proximate political events, and then to be more likely to turn out to vote.%

Discussion and Conclusion

Much of the terrorism literature has focused on whether or not attacks are “successful” in achieving the perpetrators’ goals. Much of this discussion has emphasized policy change as a way to measure success (Abrahms 2006; Pape 2005) and while useful, this approach misses an important first step: political participation. After all, if terrorists target democracies at a higher rate because they are confident that they will be more likely to produce policy change through the electoral process, then we should first identify whether or not discernible changes in participation are in fact visible. This has been the goal of the present study.

After analyzing voter turnout in legislative elections for over 50 democracies and more than 350 legislative elections in two different data sets that focus on distinct types of terrorism and different geographic areas of coverage, we see that there are in fact important electoral

consequences from terrorist attacks. We find these effects in both the GTD data, which include international and domestic terrorism worldwide, and the TWEED data, which include only domestic terrorism in Western Europe. The effect of terrorism on turnout is statistically and substantively positive in seven of eight models. Overall, though, the empirical results are consistent with our theoretical argument. Terrorist attacks are threatening and novel political events that lead to anxiety in the electorate, which, in turn, induces individuals to examine the political environment more closely and to attribute greater salience to proximate political events. As a result of this increase in concern and the increased salience of upcoming elections, individuals are more likely to turn out to vote.

This research is a first step that leads to many questions about the relationship between terrorism and political behavior. For example, specific to this theoretical approach, is there a recency effect such that more temporally proximate events have a greater impact than more temporally distant events? Presumably, more recent events are related to higher levels of anxiety, which suggests that they should have a greater effect on political behavior. We have tested for this though the results were inconclusive and deviate from the findings uncovered in earlier work (e.g., Berrebi and Klor 2008). More broadly, are there heterogeneous effects for federal and executive elections? Though little research addresses federal elections, it seems theoretically reasonable that provincial or regional electorates would manifest similar turnout responses to terrorist attacks. Further, what is the impact on executive elections? Although presidential elections are often high-profile and, therefore, attractive events for terrorists, research suggests that turnout in presidential contests is influenced by the constitutional authority of executives as some executive positions are more salient than others.

The voter turnout literature has largely ignored the increasingly prominent issue of

terrorism, and the terrorism literature has largely ignored the ever-important issue of voter turnout. This research is an early attempt to fill these gaps. If, as some research suggests, terrorists target democracies because they hope to produce political changes, then the electorate's appearance at the polls is an early indicator as to whether or not the attackers' strategy is effective. Researchers and policy makers commonly assume that terrorists intend to affect a much broader audience than just the immediate victims of their attacks. Clearly, this study does not affirm the notion that terrorist attacks produce their intended result; it does show, however, that voter turnout is impacted by terrorist events in a theoretically explicable manner.

‘Data replication: The dataset, codebook, and do-files for the empirical analysis in this article can be found at <http://www.prio.no/jpr/datasets>.’

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Appendix: Country Election-years		
Country	N*	Election-Years*
Argentina	11	1983, 1985, 1987, 1989, 1991, 1993, 1995, 1999, 2001, 2005, 2007
Australia	13	1975, 1977, 1980, 1983, 1984, 1987, 1990, 1993, 1996, 1998, 2001, 2004, 2007
Austria	10 (9)	1975, 1979, 1983, 1986, 1990, 1994, 1995, 1999, 2002 , 2006
Belgium	10 (9)	1977, 1978, 1981, 1985, 1987, 1991, 1995, 1999, 2003 , 2007
Bolivia	5	1989, 1993, 1997, 2002, 2005
Botswana	6	1979, 1984, 1989, 1994, 1999, 2004
Brazil	5	1990, 1994, 1998, 2002, 2006
Bulgaria	4	1994, 1997, 2001, 2005
Canada	9	1979, 1980, 1984, 1988, 1993, 1997, 2000, 2004, 2006
Chile	5	1989, 1993, 1997, 2001, 2005
Colombia	9	1978, 1982, 1986, 1990, 1991, 1994, 1998, 2002, 2006
Costa Rica	8	1978, 1982, 1986, 1990, 1994, 1998, 2002, 2006

Czech Republic	3	1998, 2002, 2006
Denmark	13 (11)	<i>1975, 1977, 1979, 1981, 1984, 1987, 1988, 1990, 1994, 1998, 2001, 2005, 2007</i>
Dominican Republic	5	1990, 1994, 1998, 2002, 2006
Ecuador	9	1984, 1986, 1988, 1990, 1994, 1996, 1998, 2002, 2006
El Salvador	6	1991, 1994, 1997, 2000, 2003, 2006
Estonia	4	1995, 1999, 2003, 2007
Finland	9 (8)	<i>1975, 1979, 1983, 1987, 1991, 1995, 1999, 2003, 2007</i>
France	8 (6)	<i>1978, 1981, 1986, 1988, 1997, 2002, 2007</i>
Germany (FRG)	9 (8)	<i>1976, 1980, 1983, 1987, 1990, 1994, 1998, 2002, 2005</i>
Greece	9 (8)	<i>1977, 1981, 1985, 1989, 1993, 1996, 2000, 2004, 2007</i>
Honduras	4	1993, 1997, 2001, 2005
Hungary	4	1994, 1998, 2002, 2006
Iceland	9 (8)	<i>1978, 1979, 1983, 1987, 1991, 1995, 1999, 2003, 2007</i>
India	9	1977, 1980, 1984, 1989, 1991, 1996, 1998, 1999, 2004
Ireland	9 (8)	<i>1977, 1981, 1982, 1987, 1989, 1992, 1997, 2002, 2007</i>
Israel	9	1977, 1981, 1984, 1988, 1992, 1996, 1999, 2003, 2006
Italy	8 (7)	<i>1976, 1979, 1983, 1987, 1992, 1994, 1996, 2006</i>
Japan	11	1976, 1979, 1980, 1983, 1986, 1990, 1993, 1996, 2000, 2003, 2005
Latvia	4	1995, 1998, 2002, 2006
Lithuania	3	1996, 2000, 2004
Luxembourg	6 (6)	<i>1979, 1984, 1989, 1994, 1999, 2004</i>
Mexico	3	2000, 2003, 2006
Moldova	3	1998, 2001, 2005
Namibia	3	1994, 1999, 2004
Netherlands	10 (9)	<i>1977, 1981, 1982, 1986, 1989, 1994, 1998, 2002, 2003, 2006</i>
New Zealand	11	1975, 1978, 1981, 1984, 1987, 1990, 1993, 1996, 1999, 2002, 2005
Norway	8 (7)	<i>1977, 1981, 1985, 1989, 1993, 1997, 2001, 2005</i>
Panama	2	1999, 2004
Paraguay	2	1998, 2003

Philippines	6	1992, 1995, 1998, 2001, 2004, 2007
Poland	6	1991, 1993, 1997, 2001, 2005, 2007
Portugal	10 (9)	<i>1979, 1980, 1983, 1985, 1987, 1991, 1995, 1999, 2002</i> , 2005
Romania	3	1996, 2000, 2004
Slovakia	3	1998, 2002, 2006
Spain	8 (8)	<i>1979, 1982, 1986, 1989, 1993, 1996, 2000, 2004</i>
Sweden	10 (9)	<i>1976, 1979, 1982, 1985, 1988, 1991, 1994, 1998, 2002</i> , 2006
Switzerland	9 (8)	<i>1975, 1979, 1983, 1987, 1991, 1995, 1999, 2003</i> , 2007
United Kingdom	7 (6)	<i>1979, 1983, 1987, 1992, 1997, 2001</i> , 2005
United States	16	1976, 1978, 1980, 1982, 1984, 1986, 1988, 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006
TOTAL	365 (<i>144</i>)	
* Bolded, italicized years indicate election years in TWEED data.		

Table I. Comparisons of GTD and TWEED Data

	GTD	TWEED
Definition of Terrorism Used	Transnational and Domestic	Domestic
Election years (N)	365	144
Countries	51	18
Years	1975-2007	1975-2004
Total Events (N)	8,481	1,152
Total Fatalities (N)	11,555	418
Attacks per election year, mean **	23.2 (62.1)	8.0 (21.2)
Fatalities per election year, mean **	31.7 (132.2)	2.9 (8.5)
Voter Turnout, mean **	73.3% (14.3)	79.1% (11.8)

Note: Where appropriate, standard deviation appears in parentheses.

** Difference of means (GTD-TWEED) $p < .01$, two-tailed.

Table II. Summary Statistics of Dependent and Independent Variables

Variable	GTD				TWEED			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Turnout (DV)	73.3	14.3	28.4	95.8	79.3	11.6	42.3	95.1
Event(s)	0.7	0.5	0	1	0.4	0.5	0	1
Non-lethal Event(s)	0.3	0.4	0	1	0.1	0.3	0	1
Lethal Event(s)	0.4	0.5	0	1	0.3	0.5	0	1
Events (ln)	-0.8	4.5	-6.9	6.3	-3.4	4.5	-6.9	5.1
<i>Untransformed*</i>	23.2	62.1	0	551	8.0	21.2	0	157
Fatalities (ln)	-3.2	4.6	-6.9	7.0	-4.3	4.0	-6.9	4.0
<i>Untransformed*</i>	31.7	132.2	0	1072	2.9	8.5	0	57
Turnout (lagged)	74.6	14.2	28.4	97.0	80.4	11.1	42.3	95.1
District Magnitude	14.4	28.7	0.7	150	14.2	26.3	1	150
Concurrent Elections	0.2	0.4	0	1	0.0	0.2	0	1
Leg. Fractionalization	0.7	0.2	0	0.9	0.7	0.2	0	0.9
Presidential System	0.3	0.5	0	1	0.0	0.1	0	1
Compulsory Voting	0.3	0.5	0	1	0.4	0.5	0	1
GDP pc (USD, lagged)	13865.6	10522.5	218.9	48602.0	19145.0	7408.8	5826.8	48602.0
Population (M, lagged)	54.3	141.0	0.2	1100.0	19.3	23.2	0.2	82.0

* The untransformed values do not appear in the models; they are provided for informational purposes.

Table III. Any Terroristic Violence Preceding an Election (Models 1 and 2)

Variable	Model 1					Model 2						
	GTD			TWEED			GTD			TWEED		
	Coef	(SE)	p*	Coef	(SE)	p*	Coef	(SE)	p*	Coef	(SE)	p*
Event(s) (0, 1)	1.97	(0.96)	.04	2.13	(0.80)	<.01						
Non-lethal Event(s) (0, 1)							1.44	(1.02)	.16	2.03	(1.04)	.05
Lethal Event(s) (0, 1)							2.93	(1.14)	.01	2.20	(0.96)	.02
Turnout (lagged)	0.05	(0.05)	.37	0.30	(0.09)	.001	0.04	(0.05)	.45	0.30	(0.09)	.001
District Magnitude	0.00	(0.03)	.89	0.02	(0.02)	.24	0.01	(0.03)	.76	0.02	(0.02)	.24
Concurrent Elections (0, 1)	2.20	(1.29)	.09	-2.50	(1.45)	.09	2.31	(1.29)	.07	-2.48	(1.45)	.09
Leg. Fractionalization	-4.32	(2.77)	.12	-3.85	(2.33)	.09	-4.09	(2.77)	.76	-3.97	(2.34)	.09
Presidential System (0, 1)	7.01	(3.15)	.03	14.83	(2.81)	<.001	6.57	(3.16)	.04	14.86	(2.83)	<.001
Compulsory Voting (0, 1)	5.14	(3.72)	.17	1.50	(2.62)	.57	4.78	(3.72)	.20	1.47	(2.65)	.58
GDP pc (USD lagged)	-0.00	(0.00)	<.001	-0.00	(0.00)	<.01	-0.00	(0.00)	<.001	-0.00	(0.00)	<.01
Population (lagged)	-0.00	(0.00)	.68	-0.00	(0.00)	.17	-0.00	(0.00)	.60	-0.00	(0.00)	.18
Constant	74.33	(5.01)	<.001	71.34	(12.08)	<.001	74.40	(5.00)	<.001	71.24	(12.16)	<.001
N	365			144			365			144		
F	7.52 <.001			17.92 <.001			7.03 <.001			15.99 <.001		
P	0.88			0.95			0.88			0.95		

Note: The dependent variable is voter turnout as indicated by the %age of eligible registered voters who cast a ballot in a legislative election (lower chamber only).

* two-tailed test.

Table IV. Events and Fatalities (logged) Preceding an Election (Models 3a and 3b)

Variable	Model 3a				Model 3b			
	GTD		TWEED		GTD		TWEED	
	Coef (SE)	p*	Coef (SE)	p*	Coef (SE)	p*	Coef (SE)	p*
Events (ln)	0.34 (0.11)	<.01	0.25 (0.10)	.02				
Fatalities (ln)					0.24 (0.11)	.03	0.20 (0.12)	<.10
Turnout (lagged)	0.04 (0.05)	.49	0.30 (0.09)	.001	0.05 (0.05)	.36	0.33 (0.09)	<.001
District Magnitude	0.00 (0.03)	.92	0.02 (0.02)	.27	0.01 (0.03)	.64	0.02 (0.02)	.26
Concurrent Elections (0, 1)	2.22 (1.28)	.08	-2.42 (1.45)	.10	2.31 (1.29)	.07	-2.57 (1.47)	.08
Leg. Fractionalization	-4.40 (2.75)	.11	-4.22 (2.34)	.08	-3.60 (2.76)	.19	-4.00 (2.39)	<.10
Presidential System (0, 1)	6.82 (3.13)	.03	14.73 (2.82)	<.001	6.65 (3.16)	.04	13.96 (2.83)	<.001
Compulsory Voting (0, 1)	4.73 (3.69)	.20	1.38 (2.65)	.60	4.44 (3.72)	.23	1.67 (2.68)	.54
GDP pc (UDS lagged)	-0.00 (0.00)	<.001	-0.00 (0.00)	<.01	-0.00 (0.00)	<.001	-0.00 (0.00)	<.01
Population (lagged)	-0.00 (0.00)	.58	-0.00 (0.00)	.18	-0.00 (0.00)	.48	-0.00 (0.00)	.25
Constant	76.86 (5.04)	<.001	72.88 (12.17)	<.001	76.12 (5.07)	<.001	69.60 (12.30)	<.001
N	365		144		365		144	
F	8.14 <.001		17.66 <.001		7.62 <.001		16.86 <.001	
P	0.89		0.95		0.88		0.94	

Note: The dependent variable is voter turnout as indicated by the %age of eligible registered voters who cast a ballot in a legislative election (lower chamber only).

* two-tailed test.