

ETHNIC GROUPS, POLITICAL EXCLUSION AND DOMESTIC TERRORISM

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This study examines whether the exclusion of ethnic groups from political power is an important contributing factor to domestic terrorism. To empirically test this question, we employ a negative binomial regression estimation on 130 countries during the period from 1981 to 2005. We find that countries in which certain ethnic populations are excluded from political power are significantly more likely to experience domestic terrorist attacks and to suffer from terrorist casualties; furthermore, ethnic group political exclusion is a more consistent and substantive predictor of domestic terrorist activity than general political repression or economic discrimination.

Keywords: Domestic terrorism; Ethnic exclusion; Economic discrimination; Political constraints

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INTRODUCTION

Empirical studies deem the political exclusion of ethnic minority groups to be a significant cause of civil war, rebellions and mass political violence (e.g. Lichbach 1987; Moore 1998; Bonneuil and Ariat 2000; Regan and Norton 2005; Wimmer, Cederman, and Min 2009).¹ However, the question of whether or not the political marginalization of ethnic groups motivates and sustains terrorist activity is largely unexplored. To the best of our knowledge, Piazza's (2012) study is the only empirical research that examines the effect of minority political discrimination on domestic terrorism, reporting no significant effect. Thus, with a special focus on domestic terrorism, we extend the existing research on minority political exclusion and terrorism, contending that political exclusion creates frustration and political grievances among ethnic groups who in turn resort to terrorist violence in an effort to address such grievances. One may wonder why such ethnic groups would resort to terrorism rather than instigate civil war; we argue these groups turn to terrorism because ethnic ties enhance their collective security and because fewer material capabilities are necessary

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¹Political exclusion is defined as '[t]he share of the excluded population [from representation in or influence over the political executive] in the total population that is ethnopolitically relevant' (Wimmer, Cederman, and Min 2009, 327).

when limiting operations to a local area. When people resent a government that has failed to recognize their tribal, racial, religious or linguistic group, it is a more common strategy to withdraw from government control through autonomy or semi-autonomy rather than to jump into an insurgency movement; the former requires fewer material capabilities and less sophistication while still allowing disgruntled people to address their grievances. Terrorism, then, is more cost-effective than civil war and thus becomes a more viable option for ethnic groups that intend to pursue their political rights through the use of force.

Furthermore, a terrorist movement which develops from a group of people with social, cultural or family ties provides a relatively stable support system. Shared ethnic ties may allow politically discriminated people to organize more easily into terrorist cells, to more readily provide emotional encouragement to their members, and more effectively prevent desertion or a breach of security. That is, ethnic groups may be better equipped to carry out successful terrorist operations as their deeply rooted social and cultural bonds provide an enhanced security and loyalty structure. As domestic terrorist organizations tend to create fewer cells and specialized teams, they are smaller in size than international terrorist organizations which often operate in several countries. The Mujahideen in Afghanistan and the Kurdistan Islamic Movement exemplify such ethnic group-based terrorist operations.

There is also a micro-foundational argument to be made linking the political exclusion of ethnic minorities to the increased probability that members from the excluded community will engage in terrorism. Terrorism is frequently defined as a form of political violence perpetrated against civilians. Research by Agnew (2010) and Goodwin (2006) indicates that members of terrorist movements hailing from segments of society experiencing repression by the government frequently opt to target other civilians who they perceive as 'complicit' with or as benefitting from government policies, particularly if complicit citizens are viewed as significantly more powerful 'others.' We use this framework to anticipate that radicalized individuals excluded from political life due to their ethnic background are, therefore, more likely to see the use of terrorist attacks against 'complicit' citizens – members of the ethnic majority – as legitimate behavior.

Note that several case studies find the political exclusion of ethnic groups to be an important precipitating factor for the formation of terrorist movements, community support for terrorism, and the maintenance of terrorist campaigns (for a summary, Laqueur 1999). For example, formal and informal barriers to influence and representation in government have been credited with starting and fueling Kurdish terrorism in Iraq, Turkey and Iran (Bradley 2006), Moro terrorism in the Philippines (Ergil 2000; Buendia 2005), the LTTE or Tamil Tiger separatist movement in Sri Lanka (Van de Voorde 2005), the Basque ETA movement in Spain (Whitaker 2001), and the resurgence of Irish Republican Army violence in 1968 (O'Hearn 1987). Survey research by Klausen (2005) finds that political – along with socioeconomic – exclusion fosters feelings of alienation among Western European Muslim minority communities and helps to drive radicalization and support for extremism. Other terrorist movements nominally motivated by different concerns frequently invoke ethnic issues centering on political marginalization and exclusion as a core driving force. For example, the Maoist Naxalite movement in India began in the late 1960s as a non-sectarian urban guerilla movement aiming to foment a communist insurrection in the State of West Bengal. However, when the Communist Party of India took power in the state legislature of West Bengal, the Naxalites shifted their struggle to the disenfranchisement of the aboriginal (Adivasi) population living in the rural areas across South and Eastern India. Today, the Naxalites are motivated by the issue of Adivasi political exclusion and abuse at the hands of politically connected landlords (Dash 2006; Gupta 2007). Moreover,

addressing the marginalization and exclusion of ethnic groups has emerged as a key counterterrorism tool by the USA and coalition forces in Iraq and Afghanistan (Petraeus 2007).

Our research seeks to advance the scientific study of terrorism by empirically evaluating the impact of ethnic group political exclusion on domestic terrorism; thus, we rely on a battery of estimation methods such as negative binomial, rare events logit, negative binomial with cubic polynomial of time, and generalized estimating equations (GEEs) on cross-national, time-series data for 130 countries during the period from 1981 to 2005. We expect exclusion to most significantly affect the local, rather than the transnational, environment for political violence. Although domestic terrorism is more pervasive than transnational terrorism and results in substantially more casualties (Jongman 1992), it has, strangely, received less scholarly focus (see, Enders and Sandler 2006; Asal and Rethemeyer 2008a, 2008b; LaFree and Ackerman 2009; Chenoweth 2010; Enders, Sandler, and Gaibullov 2011). In this study, we make use of more recently available data on domestic terrorism which does not ‘include incidents involving insurgency or guerilla warfare, internecine conflict, mass murder, and criminal acts’ (Enders, Sandler, and Gaibullov 2011, 322).² More importantly, we shed new light on the findings of previous empirical studies which have examined the effects of general/aggregate regime-type indicators of political institutions that measure the experience of the modal – majority – citizen. We believe that our analysis of excluded ethnic groups is relevant given that terrorist behavior, it is presumed, is more often adopted by actors at the political margins of societies than by average citizens (discussion on this by Li 2005; Crenshaw 1981) as political exclusion is, by definition, more frequently suffered by ethnic minorities than by the dominant ethnic group.³

We argue that the political exclusion of ethnically different people within a country increases the propagation of disgruntled individuals who, in the absence of access to executive power via orderly and nonviolent means, are more likely to support the use of domestic terrorism to address grievances.⁴ We find that the political exclusion of ethnic groups is a more significant and substantive predictor of domestic terrorism than general restriction of political participation (Li 2005) or minority economic discrimination (Piazza 2011, 2012), a finding which holds true even after accounting for a possibility of reverse causality. The following section introduces the definition of terrorism and then assesses how previous studies are related to our research topic.

LITERATURE REVIEW

We adopt the definition of terrorism employed by the Global Terrorism Database (GTD): ‘the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious or social goal through fear, coercion, or intimidation’ (for more detailed information, see www.start.umd.edu/gtd). Note that the GTD is the data

²Findley and Young’s (2012) geo-referenced terror event data, however, shows a high degree of overlap between terrorism and ongoing civil war.

³Of course, as in contemporary Syria, there are cases in which the majority is excluded and the ethnic minority rules. These cases are, however, the exception.

⁴One may suggest that the turn to terrorism is more likely if an excluded population consists of several smaller groups, whereas one large excluded group is more likely to instigate rebellion. This conception might be empirically verifiable with our statistical models only if our concept and operationalization of terrorism were the same as those of insurgency. By the same token, it is not difficult to imagine that a large excluded group would engage in domestic terrorism – as opposed to insurrection – because they do not necessarily possess a united military power capable of challenging the government. Simply put, whether an excluded population consists of one large ethnic group or many smaller ones, we expect domestic terrorism to arise in most cases where such groups are politically excluded due to their ethnic background.

source for the dependent variable for our study. Due to their short time period and smaller sample size, other domestic terrorism data-sets – such as the National Memorial Institute for the Prevention of Terrorism at <http://www.mipt.org/>, Terrorism in Western Europe: Event Data at <http://folk.uib.no/sspje/tweed.htm>, and Domestic Terrorist Victims at <http://www.march.es/dtv> – are of more limited use for the researcher.

While the role of ethno-political exclusion as a precipitant of terrorism has been rarely addressed in the context of longitudinal data analysis, related topics, such as the role of regime type and restriction and/or tolerance of general political participation, have been widely discussed and examined. Though empirical research has generally found that democratic regimes experience more terrorism than do dictatorships (e.g. Eubank and Weinburg 1994, 2001; Pape 2003; Piazza 2008), a frequently cited study by Li (2005) determined that some elements of democratic institutions promote terrorism, while others significantly reduce it. Li found that constraints on executive power, a hallmark of democratic rule, actually make states more likely to experience transnational terrorist attacks; however, he also found that countries with higher rates of popular political participation experience fewer terrorist incidents, suggesting that broadening democratic participation will reduce rates of terrorism (Chenoweth 2010).

Our study seeks to further evaluate Li's (2005) finding. We question the assumption that factors such as the degree to which citizens, at an aggregate level, are free from restrictions against political participation are suited to predict fringe behaviors like terrorism. Measurements such as state tolerance for political participation operationalize the political status of the modal citizen within a country, while terrorist activity is invariably instigated by atypical elites that often hail or derive their support from marginalized and excluded minority communities within society. This mismatch complicates empirical analysis and interpretation of political participation as a valid predictor of terrorism. Li (2005, 238) actually alludes to this dilemma in his study by depicting terrorist groups as 'extremely marginal groups whose grievances are too narrow to be resolved through a democratic system.'

More importantly, Li's political participation variable (through voting) may be misconstrued as a feature that leads to a decrease in transnational terrorism when it may, in fact, have only a spurious effect. Li's study conceptualizes that the higher the voting rate in democracies, the less likely transnational terrorism is to occur. However, because political nonparticipation (i.e. no voting) is pervasive within many full-fledged democracies such as the USA, but less so within some emerging democracies, the high level of political participation may not necessarily be associated with a low level of terrorist incidents (DeLuca 1995). Furthermore, as Powell (1982) properly points out, the voter turnout rate is affected by many institutional and attitudinal factors and may have little to do with whether citizens have a reasonable chance to have their interests represented through elected officials. Simply put, the actual patterns of political participation through voting are quite complex and may vary from country to country.

This study argues that political participation may not affect terrorism. Low voting rates may simply indicate the prevalence of political apathy; political exclusion, on the other hand, exacerbates terrorism because it is likely to compel ethnic groups to fight for the political rights of which they are deprived. In this context, we expect that the political status of ethnic communities – the degree to which the political system in their home country integrates them into or excludes them from political decision making – is a more likely causal trigger for domestic terrorism than the overall measure of rates of political participation.⁵

⁵Whether political exclusion is a better predictor than political participation is, in the empirical analysis section, determined by the comparison of significance of these variables rather than of their magnitudes. For example, if the former is significant and the latter is insignificant, the former is considered to be a better predictor of domestic terrorism. We discuss the relationship between political exclusion and participation further in the paper.

We, therefore, include Li's (2005) measure of democratic participation, taken from the Vanhannen Index, in the statistical models as a covariate.

Recent research by Piazza (2011) finds that countries qualified by economic discrimination against minority groups – defined using data from the Minorities at Risk (MAR) database as groups that collectively suffer from disadvantages in income, housing, employment and unequal access to government social services – experience higher levels of domestic terrorism. While we expect our research to confirm the above, we have theoretical reason to suspect that ethno-political exclusion is a distinctly strong and consistent predictor of terrorism even while considering the possibility of economic discrimination against minority groups. For example, research by Fox (1999, 2000) uses Gurr's basic theory of exclusion, grievance, group identity, and mobilization to link cultural identity-based grievances to political violence. For Fox, cultural identities (he focuses mainly on 'religious cultural communal identities') are essential to people's everyday lives. When they are threatened, or disparaged, potent group grievances are produced that are easily manipulated by extremists; this explains why conflicts over religious identity often result in higher levels of political violence. Juergensmeyer (1993) and Rapoport (1991) make similar observations about the intensity of conflicts over religious and cultural identities, and identify such conflicts as prime vehicles for terrorism. Moreover, Pape's (2003) research identifies foreign occupation, particularly by foreign powers representing different religious and cultural traditions, as an important motivator for suicide terrorism.

For our study, we regard the political exclusion of ethnic minorities to be an affront on group identity insofar as excluded groups share similar religious and cultural heritages. We then argue that when their access to state power is deprived, these groups are likely to express high levels of grievances and intensified resentment which will, then, motivate the turn toward domestic terrorism. Undoubtedly, the experience of economic discrimination will also produce collective grievances and motivate terrorism; however, for the purposes of this study we regard economic grievances as distinct from motivations of identity politics and, accordingly, control for minority economic status in our empirics.

WHY ETHNO-POLITICAL EXCLUSION LEADS TO DOMESTIC TERRORISM

There is a strong theoretical base to support the notion that countries with large ethnic populations excluded from political power would experience higher levels of domestic terrorist activity. Gurr's (1968, 1970, 1993, 1996, 2000) work on deprivation as a root precipitant of riots, rebellion, and civil war helps to provide some of the theoretical motivation for our assertion that political exclusion due to ethnicity is likely to lead the excluded to support or engage in domestic terrorism. Gurr argues that when ethnic and religious – and, in principle, socioeconomic – subgroups within society face collective political and economic deprivations, such as discrimination or lack of opportunities to participate in mainstream political or economic life, several transformations occur, which makes political violence more likely. Initially, core anti-status quo grievances are formed and enhanced among group members by the experience of exclusion. This experience of grievance prompts the group to develop an enhanced sense of collective identity as well as a strong sense of alienation from the ethnic or religious majority in society, which, in turn, only serves to further reinforce the salience of group grievances. Then, enhanced group identity, alienation, and salient group grievances are exploited by elites within the community to radicalize members and mobilize opposition – both nonviolent and violent – to the state and status quo.

Though Gurr is primarily interested in explaining the onset of episodes of mass political violence like rebellions, the thrust of his argument has been applied by other scholars to the formation of terrorist movements within aggrieved ethnic populations and the mobilization of community support for terrorism. Work by Crenshaw (1981), DeNardo (1985) and Ross (1993) maintains that regimes characterized by political exclusion of ethnic minority groups are particularly likely to experience terrorism. When ethnic communities experience political discrimination and formal and informal barriers to equality – Crenshaw (1981, 383) specifically depicts this situation as ‘ethnic minorities ... that are discriminated against by the majority population’ – they develop grievances against the state and larger society. These grievances fuel the construction of social protest movements seeking representation and political change. Fringe elements within the community will demand that direct action takes place outside of mainstream governing institutions and processes and will, in extreme cases, advocate for terrorist violence. In the face of state unresponsiveness and continued repression, they will siphon community support away from mainstream nonviolent leaders and will cultivate their capacity to commit armed attacks. Not surprisingly, the demands for inclusion or equal treatment that characterize the social protest movement will grow into stipulations for wider sociopolitical change, for greater ethno-political autonomy and/or calls for irredentism and independence. This change in demands is easily manipulated by extremists, greatly radicalizes the community, and raises the likelihood of involvement with terrorist movements.

It should be noted that Piazza’s (2012) study failed to find political discrimination against minority groups to be a consistently significant and substantive predictor of domestic terrorism when it was evaluated along with economic discrimination; we expect, however, to find a different result in this study as we operationalize political exclusion differently. We turn to the Ethnic Power Relations (EPR) Database which totals the excluded population on a nation-wide basis. This provides a different test of political exclusion as a predictor of terrorism and helps to address some of the complications of the Piazza (2012) study, such as selection issues and operationalization of a group-level variable to a national unit of analysis. Accordingly, this study expects to find ethno-political exclusion to be a significant, positive predictor of the frequency of domestic terrorist attacks.

H₁: Countries with larger numbers of people that are politically excluded due to their ethnic background will experience more domestic terrorist attacks.

We further reason that as the population size of politically excluded ethnic minorities increases, terrorist attacks become more severe and result in higher numbers of casualties. There are two components to such reasoning. First, we regard numbers of casualties due to terrorism to be a reliable accompanying indicator to a raw count of terrorist attacks; while the number of domestic terrorist attacks occurring in a year indicates the frequency of terrorist activity, the count of persons killed or injured in terrorist attacks indicates the scope and level of intensity of terrorist activity. Taken together, they provide a more complete picture of overall domestic terrorist activity in a country, thereby increasing our confidence in the findings of the study. Second, the literature suggests that ethno-political exclusion will have a particularly strong effect on terrorist casualties. For example, Kaufman (1996, 1998) demonstrates that violent inter-ethnic conflicts result in higher casualty rates and more frequent atrocities committed against civilians by participants. These findings are not trivial given that recent studies have noted changes between the ‘old terrorism’ of the 1970s and 1980s, which was motivated by ideology, to the ‘new terrorism,’ which is motivated by religious and ethnic identity (e.g. Frey and Luechinger 2005; Crain and Crain 2006; Frey, Luechinger, and Stutzer 2007; Asal and Rethemeyer 2008b). This new trend indicates that while the number of incidents is declining, the lethality of incidents is rising, giving way to our second hypothesis.

H₂: Countries with larger numbers of people that are politically excluded due to their ethnic background will experience higher casualties from domestic terrorism.

It is important to make one final note on the nature of the outcome variable. In this study, we examine that ethno-political exclusion is a cause of domestic, as opposed to transnational, terrorism.⁶ Both the qualitative case studies alluded to above and the theoretical framework developed by Gurr (1968, 1970, 1993, 1996, 2000), Crenshaw (1981), DeNardo (1985) and Ross (1993) depict ethno-political exclusion as a precipitant of domestic political violence and terrorism. In a similar vein, we assert that the experience of political exclusion leads to a rise in localized grievances against the state and prompts the formation and maintenance of terrorist movements that select local targets. We do acknowledge the possibility that terrorist groups motivated by political exclusion might perhaps choose to commit some transnational terrorism to better publicize their grievances and political agendas; however, this is a very rare occurrence, mostly due to the fact that it requires a much higher level of sophistication and capacity on the part of the domestic terrorist group. Nonetheless, in the effort to alleviate this possibility, we rerun our statistical models at the monadic level using transnational terrorism as the dependent variable. Our findings indicate that these models do not consistently show political exclusion to be a significant predictor.⁷

DATA

Consistent with the theoretical discussion of the previous section, the dependent variable, domestic terrorism, is measured in two different ways: (1) the total number of domestic terrorist incidents that occurred in a given country per year and (2) an annual total of the number of persons killed or wounded in terrorist attacks per country-year. We note that 56% of the terrorist incidents have zero values and 65% of the terrorist casualties have zero values. The terrorist casualty indicator has an advantage over total event counts as it captures the unequal degree of severity in each terrorist incident – in terms of deaths and injuries – as opposed to an aggregation of terrorist events of differing magnitude. To measure the activity of domestic terrorism, this study relies on the worldwide domestic terrorism data-set compiled by Enders, Sandler, and Gaibulloev (2011), researchers who systematically separated LaFree and Dugan's (2007) GTD⁸ into domestic and transnational terrorism after removing non-terrorist events such as insurgency and guerilla warfare. Enders, Sandler, and Gaibulloev underscore that 'no other article provides such a complete partitioning of domestic and transnational incidents' (Enders, Sandler, and Gaibulloev 2011, 3).

As noted above, the dependent variables count all terrorist incidents and casualties occurring within each country, rather than incidents and casualties perpetrated specifically by ethno-nationalist terrorist organizations. But, the latter might be preferable insofar as it could allow us to draw a direct inference on the political exclusion of ethnic groups, ethnic group grievances, and ethno-nationalist terrorism as opposed to, for example, the general patterns on the exclusion-terrorism connection. However, for a number of reasons, we leave this task for future research.

⁶Domestic terrorism is conventionally defined as terrorist attacks in which the perpetrator and the victim, or target, are of the same nationality and the attacks transpires within one country. Transnational terrorism is defined as attacks where the perpetrator and victim are of different nationalities and the attack is either cross-border, launched in a different country from that of the perpetrator, or launched locally against foreign targets, such as embassies, tourists, or other foreign nationals (Enders and Sandler 2006, 7).

⁷Results are available from the authors.

⁸For more detailed information on GTD, see <http://www.start.umd.edu/gtd/>.

First, this study purports to produce an analysis that is compatible with and comparable to the bulk of previous cross-national research on the root causes of terrorism; as such, the unit of analysis in this study is the country-year rather than the group-year. In recent years, studies which have empirically investigated predictors of terrorism – such as regime-type, types of democratic institutions, respect for rule of law or human rights – have all used country-year units (e.g. Li 2005; Wade and Reiter 2007; Choi 2010; Walsh and Piazza 2010). Indeed, recent work on the impact of ethnic minority group statuses on terrorism and armed conflict are also aggregated to the country-year level (e.g. Wimmer, Cederman, and Min 2009; Piazza 2011), and this practice is commonplace in the wider armed conflict literature (e.g. Fearon and Laitin 2003). In addition to producing a compatible study capable of adding to the cumulative understanding of terrorism, we also incorporate many of the indicators found to be significant in these studies as controls, all of which are measured at the country-year level.

Second, collecting group-level data on ethno-nationalist attacks is not feasible due to the fact that the perpetrator is known for only about 50% of the cases. More specifically, as Dugan (2010, 16), one of the two main compilers of GTD points out, ‘nearly half of the attacks in the GTD are unattributed to any terrorist organization.’ If one’s statistical analysis relies only on those attacks with known perpetrators, it would be subject to a selection bias that would distort the empirical results. Ultimately, the re-classification of the GTD at the group level has to be withheld until the missing information about the perpetrator has been collected and properly documented.

The two limitations we describe – the need for compatibility and the lack of perpetrator data – will be addressed in our future research; in the meanwhile, the present study focuses on providing preliminary evidence showing the positive effect of ethnic exclusion on domestic terrorism at the group-year level. The preliminary results in Appendix 1 are a replication of ethnic group Model 1 of Table II in Cederman, Wimmer, and Min’s (2010, 105) study, after having changed the dependent variable from ethnonationalist conflict to domestic terrorism.⁹

The main independent variable, ethno-political exclusion, is the percentage share of the excluded population in the total population that is ethnopolitically relevant; this variable is derived from the EPR data-set.¹⁰ When ethnic groups are capable of achieving only a nominal level of political mobilization or are subjected to intentional political discrimination due to their ethnic background, they are coded by EPR as ethnopolitically relevant. Political exclusion occurs when a particular ethnic group’s members are barred from service or representation in the executive branch of government. The executive branch includes the political executive, such as presidential and government cabinet and executive offices, as well as the top ranks of national militaries and bureaucracies (Wimmer, Cederman, and Min 2009; Cederman, Wimmer, and Min 2010). To correct the positive skew of the data, this study follows Wimmer, Cederman, and Min’s (2009) approach by using its logged transformation, which is consistent with the assumption that an increase in the proportion of the excluded population has a greater effect on the likelihood of terrorism at lower levels of exclusion than at higher levels. As shown in Appendix 2 Descriptive Statistics, the logged political exclusion variable ranges from 0 to 4.52 with a mean value of 1.82.¹¹ When the variable is

⁹Following Wimmer, Cederman, and Min’s research program on ethnic politics and civil war which began with country-year analysis (Wimmer, Cederman, and Min 2009) and then moved on to group-year analysis (Cederman, Wimmer, and Min 2010), we also wish to gradually develop a research program from country to group level. Our future research should enable us to better respond to the concern that the group-year level analysis offers a better assessment of a possible correlation between the size of the excluded population and domestic terrorism (as opposed to whether excluded groups actually engage in more terrorism).

¹⁰The data and the codebook can be found at http://dvn.iq.harvard.edu/dvn/dv/epr/faces/study/StudyPage.xhtml?globalId=hdl:1902.1/11796&tab=files&studyListingIndex=0_038423516cef4f8d7855ab866ca5.

¹¹A more complete description of the political exclusion variable can be found in Appendix 3.

converted to a level term, the minimum value is 1, the maximum value is 92, and the mean is 6 on a scale of 0–100.

Our models also include measures of democratic political participation and economic discrimination against minorities, taken from Li's (2005) and Piazza's (2011) studies, respectively, and updated for this study. Political participation is expected to reduce domestic terrorism and is operationalized using the participation component of the Vanhannen Index; economic discrimination, on the other hand, is expected to increase domestic terrorism and is a dummy variable coded as '1' for observations where minority groups suffer from some level of economic deprivation vis-à-vis the majority population. This measurement is the same as that used by Piazza (2011) and is derived from the MAR database. To remain consistent with Li (2005), we also include an indicator measuring executive constraints in all of the models that include political participation. Executive constraints are expected to increase domestic terrorism as they tend to tie the hands of executives who would otherwise implement strict counterterrorism measures. The data comes from Li's (2005) study and is updated for this study.

Appendix 4 provides a correlation matrix of five independent variables of interest (i.e. political exclusion, political rights, political participation, executive constraints, and economic discrimination). It turns out that the highest correlation is only 0.30 between political exclusion and economic discrimination. It is also worth noting that the relationship between political exclusion and political participation is negative and strikingly weak (-0.09); this indicates that these two variables are conceptually and empirically distinct, as noted earlier. The correlation between exclusion and political rights is only -0.25 , providing no evidence that the two measures capture the same concept.

To avoid omitted variable bias, eight more control variables are included: political rights,¹² ethnic fractionalization, state failure, a measure of human rights protections, independent judiciary, economic development, population, and a lagged term for the dependent variable. These eight variables are chosen based on previous studies which have shown they hold some impact on terrorist activity.¹³ Previous studies assert that democratic institutions allow more terrorist activity due to the commitment to individual freedoms;¹⁴ Abadie (2006), for example, finds evidence that political rights are positively associated with terrorist risk ratings (Eubank and Weinberg 1994, 2001). In accordance with these findings, we expect that the promotion of political rights will increase the risk of domestic terrorism. The political rights variable is recorded as '7' for the highest level of civil liberties and as '1' for the lowest. Data is collected from the Freedom House's Political Rights Index.¹⁵ It should be noted that when the political rights control is included for estimation, political participation and executive constraints are excluded due to multicollinearity concerns; the correlation between political rights and participation, for example, is 0.80.

¹²When democracy is included instead of political rights, the results are similar to those reported in this study: it is a positive predictor of domestic terrorism. The democracy variable is taken from the Polity data-set and ranges from 10 (full democracy) to -10 (full autocracy) (Marshall and Jaggers 2007).

¹³The discussion of the eight control variables is presented with the understanding that they are likely to affect international as well as domestic terrorism for similar reasons. For example, Savun and Phillips (2009, 879) make a note that 'if democracies are prone to transnational terrorism by design, as most existing theoretical arguments suggest, then democracies should be vulnerable to domestic terrorism as well.' Young and Findley (2011, 422) also point out that 'Li's arguments [on the relationship between democracy and transnational terrorism] may be accurate when we apply his reasoning to domestic terrorism as opposed to the transnational form.' More importantly, a recent paper by Kis-Katos et al. (2011) shows that domestic and transnational terrorism share similar causal roots.

¹⁴Other studies, however, show that democracy is inversely proportional to terrorism since it provides peaceful channels of conflict resolution (e.g. Schmid 1992; Eyerman 1998; Choi and James 2005; Li 2005; Choi 2010).

¹⁵It should be noted that, unlike the EPR data-set, the Freedom House's assessment of political rights is not based on political exclusion of 'ethnic groups.'

Kurrild-Klitgaard, Justesen, and Klemmensen (2006) find that while linguistic fractionalization does drive terrorism, ethnic fractionalization does not (Blomberg and Hess 2008; Drakos and Gofas 2006; Sambanis 2008). However, most studies find that a measure of ethnic fractionalization may induce more terrorist attacks (Tavares 2004; Piazza 2006, 2008). Given that there is some evidence for the idea that ethnic diversity encourages terrorist attacks, this study includes it as a control and hypothesizes a positive relationship between ethnic fractionalization and domestic terrorism. Fearon and Laitin's (2003) ethnic fractionalization data is used for estimation.

Failed states in which the central government is too weak to exercise legal authority over much of its territory are bound to attract domestic terrorists as they afford good opportunities for terrorist groups to form, recruit, plan, and launch attacks (Rotberg 2002). Several recent studies provide empirical evidence on the linkage between failed states and terrorism (e.g. LaFree, Dugan, and Fahey 2007; Piazza 2008); we therefore include a control for state failure, using the same indicator Piazza (2008) derived from the Political Instability Task Force (PITF) (2007). The failed state variable ranges from 0 to 17 and is created by combining the severity of ethnic wars (0–4), revolutionary wars (0–4), adverse regime changes (1–4), and genocides and politicides (0–5). It is worth noting that the severity levels measured in the PITF data are not likely affected by domestic terrorist activity (i.e. the possibility of reverse causality) because the former are based on the number of deaths occurring and the size of the geographic territory affected by the particular failure. Nonetheless, as a check for robustness we did rerun the models while excluding the state failure covariate, producing the same core results.

Walsh and Piazza's (2010) study produced robust findings, showing that countries with higher levels of human rights protections experienced less terrorism. This finding has been reproduced in several subsequent studies (e.g. Piazza and Walsh 2010). Our models, therefore, include the measure of respect for physical integrity rights – the right not to be abused or harmed – used by Walsh and Piazza (2010). Our expectation is that it will be a negative predictor of terrorism because promotion of physical integrity rights will reduce the level of abuse and thus produce fewer grievances.

Choi (2010) demonstrates that when an independent judiciary with fair-minded judges and police officers is present in a rule of law society, the risk of terrorism is small. Similarly, Findley and Young (2011) posit that independent judiciaries make government commitments seem more credible, thereby dis-incentivizing the use of terrorism; their results, then, provide support for the credible commitment logic. Consistent with these findings, we expect that the presence (or absence) of an independent judiciary is likely to decrease (or increase) the frequency of terrorist incidents. Data is garnered from Henisz's (2000) POLCON database.

Several recent empirical studies also consider the effects of poverty and economic development on terrorism (e.g. Li 2005; Wade and Reiter 2007; Freytag et al. 2011; Choi *forthcoming*; Choi and Luo 2013; Choi 2014). When a large percentage of a given country's population lives below the poverty line, terrorist groups may find it easier to recruit the disgruntled. People whose basic needs, such as clean water, nutrition, health care, education, clothing and shelter, are not fulfilled find fault with those who discriminate against their social welfare – namely, the government and the rich. For this reason, the economic development variable is included as a control for its effect on terrorism. It is measured by the logged real GDP per capita, adjusted for purchasing power parity.¹⁶ Data for this variable is

¹⁶Other possible poverty measures such as the Gini coefficient are not used because missing observation issues loom large and data is not annual.

obtained from Gleditsch (2002) and is updated with base data from the new 6.3 version of the Penn World Tables (Heston, Summers, and Aten, August 2009).

Countries with large populations often find it difficult to provide adequate levels of security measures, resulting in greater vulnerability to terrorist plots and attacks (Eyerman 1998). In fact, Savun and Phillips (2009) find evidence that highly populated countries experience more domestic terrorist incidents. With this in mind, the population variable, measured by the logged total population, is projected to increase the rate of terrorism due to the relative difficulty of successfully policing a larger population. Data for this variable is taken from the US Census Bureau (2008).

When countries experience domestic terrorism in a given year, they are at a greater risk of experiencing terrorism in the following year; thus, this study controls for the history of domestic terrorism within countries by adding a lagged dependent variable on the right-hand side of the equation and by employing Li's (2005) moving average of past terrorist events. Because these two measures do not lead to a substantive change in the main empirical finding of this study, we report only the estimates of the former. However, it should be noted that although the lagged dependent variable has the potential to 'soak up' the explanatory power of theoretically interesting independent variables (Achen 2000), previous research demonstrates it is theoretically appropriate that countries with past incidents of domestic terrorism are likely to be more vulnerable to terrorism in the present or in the future (Savun and Phillips 2009; Young and Findlely 2011).

In order to test the aforementioned hypotheses, we collect a cross-national, time-series data on 130 countries during the period from 1981 to 2005. The study period is based on the fact that one of the control variables (physical integrity rights) is available only after 1981 (Cingranelli and Richards 2010; Walsh and Piazza 2010)¹⁷ and that the ethno-political exclusion data ends in 2005 (Wimmer, Cederman, and Min 2009). Our unit of analysis is the country-year. As the dependent variable is operationalized as the total number of terrorist events per year, this study employs a standard estimation method for count data, i.e. negative binomial maximum-likelihood regression with Huber-White robust standard errors, clustered by country. This estimation method is chosen over Poisson regression because the variance of the dependent variables is much larger than the mean (Greene 2003; Long and Freese 2006; Hilbe 2007). To further verify the results of these estimates, we use rare events logit, negative binomial regression with cubic polynomial of time, and GEEs. All predictors, barring economic discrimination and ethnic fractionalization, which are time-invariant, are lagged one year behind the outcome variable, ensuring that the predictors are better associated with the outcome variable.

RESULTS

This section discusses the statistical significance of estimated coefficients and introduces analyses of their substantive effects. Table I presents the results of the main negative

¹⁷When the Political Terror Scale (PTS), another data source for human rights, is instead used, the study period can be extended to 1976 (Wood and Gibney 2010). However, the results are not discussed here because they are virtually identical to those reported in the next section. The similarity is attributed to the fact that the PTS relies on the same source materials as the physical integrity rights of the CIRI index. In order to cover a longer time period, we have conducted statistical analysis after excluding the physical integrity rights variable. Because this analysis does not change the significance of political exclusion in any meaningful way, the results are not reported. This finding is also an indication that selection bias is unlikely to be an issue, as it is not subject to the data availability of control variables.

TABLE I The effect of political exclusion on domestic terrorism, 1981–2005

Variable	Negative binomial regression									
	Terrorist incidents					Terrorist casualties				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Political exclusion	0.189*** (0.059)	0.195*** (0.063)	0.185** (0.065)	0.172** (0.066)	0.103** (0.038)	0.272*** (0.073)	0.260*** (0.082)	0.297*** (0.082)	0.267*** (0.084)	0.138* (0.063)
Political participation (Vanhanen)		-0.108 (0.089)		-0.100 (0.089)	0.016 (0.064)		-0.080 (0.108)		-0.058 (0.114)	-0.025 (0.055)
Executive constraint (polity)		0.299*** (0.081)		0.212** (0.073)	0.119* (0.060)		0.266*** (0.063)		0.187** (0.081)	0.182** (0.064)
Economic discrimination			0.352* (0.173)	0.394* (0.177)	0.048 (0.124)			0.334 (0.246)	0.314 (0.260)	0.263* (0.125)
Political rights	0.261*** (0.050)		0.207*** (0.055)			0.241*** (0.058)		0.168** (0.065)		
Ethnic fractionalization	-0.956** (0.356)	-0.866** (0.370)	-0.967** (0.390)	-0.843* (0.378)	0.307 (0.248)	-1.141** (0.465)	-0.796* (0.478)	-1.264** (0.525)	-0.967* (0.505)	0.184 (0.218)
State failure	0.224*** (0.051)	0.215*** (0.060)	0.247** (0.085)	0.239** (0.093)	0.166*** (0.023)	0.412*** (0.105)	0.452*** (0.121)	0.448*** (0.133)	0.477*** (0.147)	0.138*** (0.022)
Physical integrity rights	-0.210*** (0.035)	-0.196*** (0.040)	-0.168*** (0.037)	-0.157*** (0.039)	-0.103*** (0.023)	-0.327*** (0.046)	-0.319*** (0.049)	-0.260*** (0.053)	-0.249*** (0.053)	-0.221*** (0.026)
Independent judiciary	-0.431** (0.175)	-0.504** (0.177)	-0.352* (0.163)	-0.398** (0.155)	0.010 (0.103)	-0.334 (0.235)	-0.298 (0.243)	-0.265 (0.266)	-0.210 (0.286)	0.067 (0.121)
Economic development	0.073 (0.106)	0.158 (0.111)	-0.046 (0.113)	0.059 (0.114)	0.472*** (0.079)	-0.130 (0.122)	-0.047 (0.131)	-0.130 (0.154)	-0.202 (0.165)	0.169* (0.075)
Population	0.475*** (0.073)	0.487*** (0.076)	0.511*** (0.073)	0.490*** (0.072)	0.151*** (0.045)	0.849*** (0.093)	0.831*** (0.093)	0.897*** (0.103)	0.872*** (0.102)	0.106** (0.041)
Lagged terrorism	0.024*** (0.005)	0.023*** (0.005)	0.020*** (0.005)	0.020*** (0.005)	0.003*** (0.000)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002** (0.001)	0.000*** (0.000)

Constant	-4.457*** (0.951)	-4.950*** (1.048)	-3.996*** (1.009)	-4.269*** (1.055)	-7.257*** (0.767)	-4.606*** (1.131)	-4.985*** (1.176)	-4.175** (1.386)	-4.325** (1.472)	-4.931*** (0.667)
Wald Chi ²	362.57	417.86	419.54	428.05	939.61	410.93	424.31	337.28	342.91	631.04
Prob > Chi ²	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Log Pseudolikelihood	-5730.67	-5437.57	-3940.85	-3851.94	-2858.18	-6487.29	-6142.49	-4551.37	-4434.93	-3402.26
Dispersion = 1	3.41	3.33	3.15	3.16	n/a	8.34	8.16	8.05	8.03	n/a
Country and year fixed-effects	no	no	no	no	yes	no	no	no	no	yes
Observations	2794	2620	1921	1865	1781	2794	2620	1921	1865	1699

Note: Robust standard errors are in parentheses.

* $p < .05$

** $p < .01$

*** $p < .001$, one-tailed tests.

binomial regression models of this study; a one-tailed test at the 0.05, 0.01, and 0.001 levels is utilized because the hypotheses are directional.

Models 1 through 5 display results where the dependent variable is domestic terrorist incidents per country-year. In Model 1, political exclusion is included as a predictor along with all of the controls including Political rights. In Model 2, the Political rights covariate is dropped from the model and in its place are the two democratic institutions variables found by Li (2005) to be significant: Political participation (Vanhanen) and Executive constraints (Polity).¹⁸ In Model 3, Piazza's (2011) Economic discrimination is added and Political participation (Vanhanen) and Executive constraints (Polity) are dropped while Political rights is controlled. Model 4 combines both of Li's (2005) democratic institutions variables with economic discrimination in the same model but drops the Political rights measure.¹⁹ The arrangement in Models 1 through 4 allows for an examination of the effects of a full battery of covariates against the significance of political exclusion, and also presents a variety of different permutations of democracy-related variables. Model 5 replicates Model 4 after adding country and year fixed-effects. Models 6 through 10, in which the dependent variable is domestic terrorist casualties, use the same format.

Across all models – 1 through 10 – political exclusion proves to be a strongly significant positive predictor of domestic terrorism. In Models 1 through 5, political exclusion predicts incidents of domestic terrorism at either the .01 or .001 level. In Models 6 through 10, political exclusion emerges as a significant and positive predictor of terrorist casualties.²⁰ These findings remain robust regardless of an alternative set of covariates and model specifications, once more indicating that as a country politically excludes more of its citizens on the basis of ethnicity, it is more likely to experience domestic terrorism; consequently, its citizens suffer from higher casualties due to the increase in terrorist activity. The overall results of Table I yield support for Hypotheses 1 and 2.

While Table I reports executive constraints to be consistently positive and significant, it shows that political participation, across all models, lacks significance. In Models 1 through 10, regardless of the specification or of the inclusion or exclusion of covariates, political participation is not significant, although its coefficient is negative, as expected. This is in contrast to Li's (2005) finding that countries with higher levels of overall political participation experience fewer terrorist attacks.²¹ The 'null' finding on political participation supports our theoretical expectation. Given that political exclusion is a measure better grounded in the theory of ethnic group grievance and mobilization for political violence and better suited to predict the behavior of fringe, non-modal disgruntled political actors, it is a stronger and more consistent predictor of terrorist attacks and casualties than is the degree of overall political participation in society.

¹⁸This study also replicates Model 2 after dropping Political participation (Vanhanen) in order to assuage the concern that Political exclusion and Political participation (Vanhanen) may capture a similar political phenomenon; however, the exclusion of the political participation variable does not change the main results that can be obtained upon request.

¹⁹We have conducted two sets of diagnostic tests for multicollinearity: variance inflation factors and R^2 statistics (see Belsley, Kuh, and Welsch 1980; Gujarati 2003). As shown in Appendix 5, no severe multicollinearity is found among the predictors.

²⁰Another way to test the severity of terrorist attacks in terms of casualties is to use casualties per terrorist attack. The rationale for this measure is that if a country, *ceteris paribus*, experiences more attacks, there may be more casualties. The results are consistent with Models 6–10 in Table I: political exclusion is positively associated with domestic terrorist casualties. It should be noted that the estimation was performed after a majority of observations were dropped due to the division of casualties by terrorist attack, each of which contained many zero values. For this reason, the estimated coefficients and standard errors are not reported.

²¹It should be noted that Li's finding was based solely on transnational terrorism.

The results produced for economic discrimination, however, are more ambiguous. It is a significant positive predictor of domestic terrorist attacks in Models 3 and 4, but not a significant predictor of domestic terrorist casualties in Models 8 and 9. These findings offer some support for our expectation that political exclusion is important apart from its being a function of economic discrimination against minorities; we note that political exclusion is a strong and distinct predictor of terrorism, remaining robust after the inclusion of indicators of minority economic status or economic forms of minority discrimination and exclusion. This assessment is based on the fact that political exclusion is consistently significant and in the expected direction across models, while economic discrimination fails to achieve significance with respect to casualties.²² Furthermore, we examined interaction effects for political and economic discrimination. In these models, the coefficient of political exclusion indicates its considerable influence on terrorism when both minority economic discrimination and the interaction term are set at zero. Because political exclusion is significant and in the hypothesized direction while minority economic discrimination and the interaction term are not significantly different from zero, it is clear that ethnic group political exclusion exerts a distinct and significant effect on domestic terrorism.²³

Many of the controls also prove to be significant in our models. State failure is consistently significant at the .01 or .001 level in the models, while protection of human rights (Physical integrity rights) is a significant negative predictor of both terrorist attacks and casualties at the highest levels across model specifications. The results show that more populous countries experience more terrorism across all models, while previous terrorist attacks or terrorist casualties – the lagged dependent variable – is consistently a significant and positive predictor in all models. Ethnic fractionalization, an indicator expected to be a significant and positive predictor of terrorism, is instead (for the most part) a consistently negative predictor of terrorist attacks and casualties. This would suggest that countries with high levels of ethnic diversity experience less terrorism and suffer fewer terrorist casualties. While the independent judiciary variable is shown to predict lower levels of terrorist attacks, it is not a significant predictor of terrorist casualties. Economic development, it appears, is not a significant predictor at all; this is consistent with findings by Piazza (2006) that poverty and poor economic development are not linked to terrorism, at least not in any straightforward manner.

This study also argues that political exclusion is a more substantive contributor to domestic terrorism than either aggregate political participation or economic discrimination suffered by minorities. For comparison purposes, we estimate the substantive effects of the main independent variables on domestic terrorism incidents and casualties, ultimately finding support for our argument. To calculate a baseline probability of a domestic terrorist incident against which to make comparisons, we set the continuous variables at their means and the dichotomized variables at '0.' We then adjust the variables of interest one at a time in order to see the percentage change in the predicted probability of terrorism. Table II reports the substantive effects of the relationships between political exclusion, political participation, executive constraints, economic discrimination and terrorist attacks and casualties shown in Table I. The substantive effects are consistent with the statistical effects. For example, when

²²While Piazza's (2011, 2012) studies report the significance of economic discrimination, it should be noted that he looks at international terrorism and total terrorism in addition to domestic terrorism. As shown in Appendix 6 that replicate Model 3 in which economic discrimination is pitted against political exclusion, we also find a similar significant effect of the variable in case of terrorist incidents but not in case of terrorist casualties. This finding is not surprising because the dependent variable in Piazza's studies is terrorist incidents and not terrorist casualties while our study tests both measures.

²³Results are available from the authors.

TABLE II The substantive effects of variables of interest

Variable	Negative binomial regression	
	Terrorist incidents In Model 4	Terrorist casualties In Model 9
<i>Political exclusion</i>		
50 percentile	37%	63%
75 percentile	80%	149%
99 percentile	116%	231%
<i>Political participation (Vanhanen)</i>		
50 percentile	-5%	-3%
75 percentile	-22%	-13%
99 percentile	-22%	-13%
<i>Executive constraint (Polity)</i>		
50 percentile	24%	21%
75 percentile	63%	54%
99 percentile	89%	75%
<i>Economic discrimination</i>		
From 0 to 1	48%	37%

Note: Of the variables, political participation (Vanhanen) failed to achieve significance in both models.

a country's score on political exclusion changes from '25 percentile' to '50 percentile,' the percentage change in the likelihood of domestic terrorist incidents increases by 37%, from '50 percentile' to '75 percentile' by 80%, and from '75 percentile' to '99 percentile' by 116% (see the shaded rows in the first column). It appears that political participation exerts a dampening effect on domestic terrorism in Table II; however, it is important to note that the variable was not statistically significant in Table I, thereby its substantive effect is of little interest. On the other hand, executive constraints and economic discrimination do appear to produce positive substantive effects on the level of domestic terrorist activity; when the outcome variable is terrorist casualties instead of the number of terrorist incidents, a similar pattern appears across models. All in all, our findings suggest the substantive effect of political exclusion on domestic terrorism is more meaningful than those of the other causal factors.

ROBUSTNESS TESTS

To test the robustness of the results in the study, we apply several alternative estimation methods and specifications. Table III evaluates the robustness of the results reported in Models 4 and 9 of Table I by employing three different statistical estimators: rare events logit, negative binomial with cubic polynomial of time, and GEEs.²⁴

In order to address potential problems associated with excessive zero observations in the terrorism data, we employ a rare events logistical modeling technique, an estimation tool which truncates the dependent variable (Tomz, King, and Zeng 1999; King and Zeng 2001; Choi 2010). To run this logit technique, the event count-dependent variable is converted

²⁴We also employ zero-inflated negative binomial regression (Greene 2003; Long and Freese 2006; Hilbe 2007). We find that the political exclusion variable is significant in the expected direction with respect to terrorist incidents; however, when the dependent variable is casualties, the estimation fails to converge, producing no coefficients or standard errors.

TABLE III The effect of political exclusion on domestic terrorism, 1981–2005: robustness tests

Variable	Rare events logit		Cubic polynomial of T [†]		GEEs	
	Terrorism	Casualty	Terrorism	Casualty	Terrorism	Casualty
	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16
Political exclusion	0.083*	0.101*	0.136**	0.306***	0.202*	0.283**
	(0.043)	(0.044)	(0.052)	(0.079)	(0.098)	(0.094)
Political participation (Vanhanen)	-0.119*	-0.066	-0.043	-0.072	-0.140	-0.050
	(0.056)	(0.058)	(0.066)	(0.113)	(0.103)	(0.124)
Executive constraint (Polity)	0.117	0.127	0.100	0.052	0.331***	0.250*
	(0.077)	(0.082)	(0.064)	(0.089)	(0.089)	(0.111)
Economic discrimination	0.309**	0.305**	0.254*	0.282	0.389*	0.371
	(0.120)	(0.128)	(0.140)	(0.276)	(0.217)	(0.280)
Ethnic fractionalization	-0.000	-0.176	-0.736**	-0.412	-1.027*	-1.146*
	(0.242)	(0.246)	(0.297)	(0.455)	(0.463)	(0.612)
State failure	0.352***	0.376***	0.239**	0.358**	0.369***	0.564***
	(0.088)	(0.089)	(0.087)	(0.132)	(0.066)	(0.084)
Physical integrity rights	-0.112**	-0.173***	-0.105**	-0.190**	-0.113**	-0.251***
	(0.039)	(0.041)	(0.038)	(0.064)	(0.045)	(0.064)
Independent judiciary	-0.107	-0.048	-0.227*	-0.082	-0.487**	-0.185
	(0.144)	(0.147)	(0.128)	(0.308)	(0.163)	(0.257)
Economic development	0.231***	0.058	0.047	-0.016	-0.045	-0.252
	(0.073)	(0.075)	(0.084)	(0.166)	(0.120)	(0.172)
Population	0.280***	0.313***	0.361***	0.672***	0.633***	0.885***
	(0.053)	(0.054)	(0.062)	(0.103)	(0.083)	(0.117)
Lagged terrorism	1.602***	1.305***	0.015***	0.002**	0.005*	0.001**
	(0.117)	(0.125)	(0.003)	(0.001)	(0.002)	(0.000)
Constant	-5.517***	-4.514***	-1.483*	-3.272*	-5.010***	-4.249*
	(0.704)	(0.708)	(0.839)	(1.634)	(1.559)	(2.095)
Wald Chi ²			919.54	480.80	618.30	648.10
Prob > Chi ²			0.001	0.001	0.001	0.001
Log Pseudolikelihood			-3704.58	-4390.20		
Dispersion = 1			2.42	7.34		
Observations	1865	1865	1865	1865	1630	1630

Note: Robust standard errors are in parentheses.

[†]Cubic polynomial of time are omitted to save space.

* $p < .05$.

** $p < .01$.

*** $p < .001$, one-tailed tests.

into a dichotomous measure, coded as '1' if any terrorist incidents or casualties are recorded in an observation and as '0' otherwise. To deal with the issue of time dependence between terrorist events, we employ Beck, Katz, and Tucker's (1998) logit splines and Carter and Signorino's (2010) cubic polynomial of time. Because these two models are designed to address temporal dependence in statistical data, they should serve as appropriate estimation techniques for our terrorism data. Models 11 and 12 in Table III report the results of rare events logit, while Models 13 and 14 show those of negative binomial regression with cubic polynomial of time.²⁵ Not surprisingly, the political exclusion variable is significant across

²⁵The estimated results obtained from logit splines do not substantively deviate from those of cubic polynomial of time; thus, the results are not reported here.

TABLE IV Two-step analysis of political exclusion and domestic terrorism, 1981–2005

Variable	Terrorist incidents Model 17	Terrorist casualties Model 18
<i>1st step: political exclusion</i>		<i>Generalized linear models</i>
Terrorism	0.000 (0.000)	0.000* (0.000)
Veto players	0.019 (0.042)	0.021 (0.042)
Political rights	0.003 (0.004)	0.002 (0.004)
Ethnic fractionalization	0.014 (0.029)	0.014 (0.029)
State failure	-0.005* (0.002)	-0.005** (0.002)
Physical integrity rights	-0.001 (0.004)	0.000 (0.004)
Independent judiciary	0.006 (0.018)	0.007 (0.018)
Economic development	0.036*** (0.008)	0.035*** (0.008)
Population	0.027*** (0.003)	0.026*** (0.003)
Lagged political exclusion	0.481*** (0.005)	0.481*** (0.005)
Constant	-1.099*** (0.093)	-1.092*** (0.093)
Observations	2494	2494
<i>2nd step: domestic terrorism</i>		<i>Negative binomial regression models</i>
Political exclusion	0.143* (0.075)	0.209** (0.079)
Political rights	0.300*** (0.049)	0.248*** (0.053)
Ethnic fractionalization	-1.019** (0.375)	-1.305** (0.439)
State failure	0.254*** (0.055)	0.434*** (0.097)
Physical integrity rights	-0.261*** (0.037)	-0.434*** (0.054)
Independent judiciary	-0.392* (0.175)	-0.179 (0.213)
Economic development	0.082 (0.115)	0.001 (0.123)
Population	0.455*** (0.077)	0.812*** (0.092)
Lagged domestic terrorism	0.022*** (0.005)	0.002** (0.001)
Constant	-4.162*** (1.015)	-4.899*** (1.120)
Wald Chi ²	353.70	424.91

(Continued)

TABLE IV (Continued)

Variable	Terrorist incidents	Terrorist casualties
	Model 17	Model 18
Prob > Chi ²	0.001	0.001
Log pseudolikelihood	-5219.63	-5826.24
Dispersion = 1	3.25	7.62
Observations	2494	2494

Note: Robust standard errors are in parentheses.

* $p < .05$.

** $p < .01$.

*** $p < .001$, one-tailed tests.

these models and the essential findings are reproduced. Models 15 and 16 employ GEEs in order to account for first-order correlation. Again, the political exclusion variable is statistically significant with a positive sign. These results suggest that our core finding – the political exclusion of ethnic groups is a significant and substantive predictor of domestic terrorism and terrorist casualties – is robust and not dependent on a particular estimation technique.

It might very well be the case that when a terrorist group commits violent attacks in the name of a particular ethnic community (e.g. the Kurds in Turkey), the state then starts to politically exclude this community from power in the central government (e.g. dismissing all Kurdish ministers, dissolving Kurdish parties, etc.). In order to attend to this possibility, we also look into potential reverse causality in our analysis. Since there is no standard software package that can simultaneously estimate a count variable (i.e. terrorism) and a continuous variable (i.e. political exclusion), we build a two-step model after consulting Russett, Oneal, and Davis (1998), Choi and James (2004), and Baum (2008). Step one evaluates the impact of 10 factors on political exclusion, namely, domestic terrorism, veto players, and the same predictors that appear in the previous tables (i.e. political rights, ethnic fractionalization, state failure, physical integrity rights, etc.).²⁶ Generalized linear models in this step produce predicted values for political exclusion that will be used in the second step. Negative binomial regression models at the second step incorporate the predicted values for political exclusion, which were produced by the first step, and in addition the same eight predictors that were employed in the previous tables.

Table IV reports the results of the two-step model regarding the political exclusion–terrorism connection.²⁷ The top part reports the political exclusion equation's estimated coefficients and standard errors from step one, while the bottom part displays the terrorism equation estimates from step two. While Model 17 shows the results of political exclusion with respect to domestic terrorist incidents, Model 18 displays the results for domestic terrorist casualties. It turns out that even after endogeneity bias is taken into consideration, the adverse effect of political exclusion remains, regardless of the different operationalization of the dependent variable (see the shaded row in the second step). Simply put, political exclusion emerges as a cause of domestic terrorism.

²⁶Of the four predictors, the effect of veto players requires some explanation. When more legislative veto players promote ethnic diversity based on their constituents, political exclusion should be less likely to occur (Tsebelis 2002). This study uses Henisz's (2000) data collection on veto players.

²⁷A test of overidentifying restrictions shows that we do not have more instruments than endogenous regressors. When the strength of the instrument variable is tested, we find that it is sufficiently strong because the F-statistic is 12.09.

CONCLUSION

While quantitative research in academic and policy circles has examined transnational terrorism and civil and interstate wars, research on the causes of domestic terrorism is severely lacking. Indeed, a serious limitation to the development of the empirical terrorism literature thus far has been the lack of domestic terrorism data and the absence of an empirical probe into the connection between political grievances and domestic terrorism. This has slowed the accumulation of scientific knowledge regarding the relationships between domestic-level political phenomena (e.g. the degree of inclusiveness of the political system of a country) and political violence. Given its destructive impact on the daily functioning of human life and on national economies, a deeper probe of domestic terrorism is necessary. This study is one of the first quantitative studies to conceptualize and measure political exclusion as a root cause of domestic terrorism, and as such, it will hopefully serve as a stepping stone toward increased research interest in the neglected area of domestic terrorism and its motivations.

This study has demonstrated that, irrespective of the measure of terrorism and estimation method, ethno-political exclusion fuels domestic terrorism. When people are excluded from state power due to their ethnic background, they are more likely to resort to domestic terrorism in an effort to solve issues and avenge grievances. Moreover, this study finds that the size of the politically excluded ethnic population is a more consistent predictor of patterns of domestic terrorism than the general level of political participation in a country or the degree of economic discrimination suffered by ethnic minorities; this assertion finds support for the fact that the former predictor maintains statistical significance and substantive effect in Tables I through IV, while the latter two do not.

These findings may also have significant implications for post-9/11 US counterterrorism policy. In 2005, US President George W. Bush announced the creation of a Millennium Challenge Account which pledged to provide bilateral development aid to, among other objectives, help countries fight terrorism by addressing its political and economic root causes. In exchange for aid, recipient countries are required to engage in political reforms, adopt free-market economic policies, and to alleviate corruption (Millennium Challenge Corporation 2011). Progress on these fronts is measured using scores on 17 indicators, which together determine a country's eligibility to receive MCA aid; at present, none of the indicators measure a country's political inclusiveness toward ethnic minority groups.²⁸ The results of this study suggest that ethnic group political exclusion is a key element in the generation of domestic terrorism and, therefore, policies aimed at fostering inclusiveness could be a useful counterterrorism tool.

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²⁸The Millennium Challenge indicators are: The Freedom House Civil Liberties (1) and Political rights (2) measures; the Voice and Accountability (3), Government Effectiveness (4), Rule of Law (5) and Control of Corruption (6) measures from the World Bank Institute; the Immunization Rate (7) and Public expenditure on Health (8) measures from the WHO; UNESCO's Girls Primary Education Complete Rate (9) and Public expenditure on Primary Education (10) measures; the CIESIN/Yale Natural Resource Management measure (11); the Inflation Rate (12) from the IMF; the Heritage Foundation's Trade Policy measure (13); the Land Rights and Access index from IFAD/IFC (14); the Regulatory Quality measure from the World Bank Institute (15); the Fiscal Policy score from the IMF (16); and the Business Start-Up measure from the IFC (17) (see Millennium Challenge Corporation (2011)).

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APPENDIX 1. THE EFFECT OF POLITICAL EXCLUSION ON DOMESTIC TERRORISM, 1981–2005: GROUP YEAR

Variable	Negative binomial regression	
	Terrorist incidents Model 1	Terrorist casualties Model 2
Excluded	0.344* (0.195)	0.486** (0.196)
Downgraded	-0.323 (0.266)	0.989** (0.401)
Log (group size)	0.074* (0.045)	0.213*** (0.061)
Past terrorism	0.023*** (0.006)	0.003*** (0.001)
Log (GDP per Capita), Lagged	0.174* (0.096)	0.343** (0.131)
Log (Population), Lagged	0.235* (0.115)	0.473** (0.151)
Constant	-2.321* (1.050)	-4.511*** (1.217)
Observations	9617	9617

Note: Robust standard errors are in parentheses. Peace years correction is omitted to save space. * $p < .05$, ** $p < .01$, *** $p < .001$, one-tailed tests.

APPENDIX 2. DESCRIPTIVE STATISTICS

Variable	Obs	Mean	Std. Dev.	Minimum	Maximum
Terrorist incidents	2794	11.50	42.15	0	524
Terrorist casualties	2794	52.32	205.73	0	4048
Political exclusion	2794	1.82	1.60	0	4.52
Political rights	2794	4.31	2.17	1	7
Ethnic fractionalization	2794	0.41	0.29	0.004	0.93
State failure	2794	0.58	1.54	0	13.50
Physical integrity rights	2794	4.76	2.31	0	8
Independent judiciary	2794	0.39	0.49	0	1
Economic development	2794	8.53	1.14	5.73	11.16
Populaton	2794	9.35	1.37	6.45	14.08
Lagged terrorist incidents	2794	11.68	42.80	0	524
Lagged terrorist casualties	2794	51.64	203.56	0	4048

APPENDIX 3²⁹

The political exclusion variable comes from the EPR data-set compiled by Andreas Wimmer, Lars-Erik Cederman, and Brian Min. The compilers identified all politically relevant ethnic groups and recorded the degree of access to executive-level power by their representatives in 155 countries from 1946 to 2005. In order to identify which ethnic categories were most salient to the national politics of a country, the compilers recruited a large panel of country and regional experts. The codings were collected via an online survey relying on the input of nearly 100 area specialists and scholars from across the globe.

The compilers followed the Weberian tradition of defining ethnicity that is referred to as a subjectively experienced sense of commonality based on a belief in common ancestry and shared culture. Accordingly, the definition includes ethnolinguistic, ethnomatic (or 'racial'), and ethnoreligious groups. Ethnic categories become politically relevant as soon as there is a minimal degree of political mobilization or intentional political discrimination along ethnic lines. Because politically relevant categories and access to political power may change over time, the compilers asked coders to divide the 1946–2005 period and to provide separate codings for each subperiod. This was also necessary when the list of politically relevant categories changed from one year to the next. Next, the compilers categorized all politically relevant ethnic groups according to the degree of access to executive-level power by those who claimed to represent them. Some held full control of the executive branch with no meaningful participation by members of any other group, some shared power with members of other groups, and some were excluded altogether from decision-making authority. Within each of these three categories, coders differentiated between further subtypes, including absolute power, power sharing regimes, and political exclusion from central power.

Since the focus of our study is the last category, the coding procedures on the first two categories are not explained here. When political leaders who claim to represent a particular ethnic category are excluded from participation in central government, the compilers distinguish between those with local autonomy and those who are powerless or discriminated against. Classifications of autonomy and discrimination are defined as follows: (1) *Regional autonomy*: Elite members of the group have no central power but have some influence at the subnational level (i.e. the provincial or district level, depending on the vertical organization of the state). Georgians under Soviet rule are an example. (2) *Powerless*: Elite representatives hold no political power at the national or regional levels without being explicitly discriminated against. (3) *Discriminated*: Group members are subjected to active, intentional, and targeted discrimination with the intent of excluding them from both regional and national power. An example is Guatemaltecan Indians until the end of the civil war. It should be noted that the compilers do not include in the discriminated category ethnic groups suffering from *indirect* discrimination because they are disadvantaged in the economic sphere or the educational sector and thus are unlikely to successfully compete in the political arena.

APPENDIX 4. A CORRELATION MATRIX OF FIVE INDEPENDENT VARIABLES

	Political exclusion	Political rights	Political participation	Executive constraint	Economic discrimination
Political exclusion	1.0000				
Political rights	-0.2500	1.0000			
Political participation	-0.0904	0.0910	1.0000		
Executive constraint	-0.2421	0.7975	0.0328	1.0000	
Economic discrimination	0.3028	-0.0236	-0.0649	-0.0089	1.0000

²⁹Appendix 3 is an abridged version of Wimmer, Cederman, and Min's Cording Rules found at http://dvn.iq.harvard.edu/dvn/dv/epr/faces/study/StudyPage.xhtml?globalId=hdl:1902.1/11796&tab=files&studyListingIndex=0_1aba6adf0754418d90ae7739ce3c. We provide the abridged version in order to better familiarize readers with the political exclusion data.

APPENDIX 5. MULTICOLLINEARITY DIAGNOSTICS¹

	VIFs	R^2
Political exclusion	1.30	0.23
Political participation (Vanhanen)	1.02	0.02
Executive constraint (Polity)	2.13	0.53
Economic discrimination	1.27	0.21
Ethnic fractionalization	1.39	0.28
State failure	1.45	0.31
Physical integrity rights	2.37	0.58
Independent judiciary	1.66	0.40
Economic development	2.08	0.52
Population	1.38	0.27
Lagged terrorist incidents	1.26	0.21
Mean variance inflation factors	1.57	

¹A general rule of thumb: A serious multicollinearity problem is suspected if the mean of all the variance inflation factors is considerably larger than 10, or if R^2 is greater than 0.80.

APPENDIX 6. POLITICAL EXCLUSION, ECONOMIC DISCRIMINATION, AND TERRORISM, 1981–2005

Variable	Negative binomial regression							
	Terrorist incidents				Terrorist casualties			
	International terrorism		Total terrorism		International terrorism		Total terrorism	
Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	
Political exclusion	0.092* (0.049)		0.153** (0.056)		0.524*** (0.139)		0.326*** (0.091)	
Economic discrimination	0.487*** (0.162)	0.551*** (0.159)	0.394** (0.160)	0.509*** (0.167)	0.192 (0.356)	0.336 (0.400)	0.132 (0.258)	0.298 (0.257)
Political rights	0.145*** (0.043)	0.125** (0.043)	0.190*** (0.048)	0.171*** (0.050)	0.118 (0.110)	-0.074 (0.108)	0.097 (0.076)	0.004 (0.079)
Ethnic fractionalization	-0.804*** (0.300)	-0.702*** (0.290)	-0.931*** (0.342)	-0.714* (0.324)	-0.751 (0.610)	0.106 (0.659)	-0.758 (0.482)	-0.226 (0.500)
State failure	0.206*** (0.057)	0.218*** (0.056)	0.241** (0.080)	0.272*** (0.081)	0.203* (0.099)	0.239** (0.099)	0.343*** (0.117)	0.375*** (0.120)
Physical integrity rights	-0.116*** (0.033)	-0.120*** (0.032)	-0.145*** (0.034)	-0.155*** (0.036)	-0.196* (0.089)	-0.304*** (0.079)	-0.248*** (0.061)	-0.319*** (0.060)
Independent judiciary	-0.170 (0.134)	-0.171 (0.135)	-0.276* (0.145)	-0.284* (0.153)	0.856* (0.434)	1.330** (0.468)	0.303 (0.293)	0.556* (0.337)
Economic development	0.030 (0.086)	0.041 (0.086)	-0.028 (0.098)	0.001 (0.104)	-0.082 (0.201)	0.159 (0.232)	-0.218 (0.161)	-0.042 (0.172)
Population	0.292*** (0.061)	0.297*** (0.060)	0.476*** (0.067)	0.485*** (0.069)	1.174*** (0.173)	1.039*** (0.166)	0.914*** (0.097)	0.917*** (0.108)
Lagged terrorism	0.090*** (0.018)	0.090*** (0.018)	0.017*** (0.004)	0.017*** (0.004)	-0.000 (0.001)	0.000 (0.003)	0.002** (0.001)	0.002** (0.001)
Constant	-3.609*** (0.886)	-3.554*** (0.870)	-3.528*** (0.920)	-3.599*** (0.939)	-10.104*** (1.889)	-9.048*** (1.966)	-4.367*** (1.272)	-4.895*** (1.275)
Observations	1921	1921	1921	1921	1921	1921	1921	1921

Note: Robust standard errors are in parentheses.

* $p < .05$.

** $p < .01$.

*** $p < .001$, one-tailed tests.