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Horizontal Inequalities and Domestic Terrorism

A Disaggregated Study of Ethno-Nationalist Terrorism

Master's thesis

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Abbreviations

ELF: Ethno-linguistic fractionalization

EPR: Ethnic Power Relations

G-Econ: Geographically based economic data

GeoEPR: Geographically based Ethnic groups

GDP: Gross domestic product

GIS: Geographical information system

GTD: Global Terrorism Database

HI: Horizontal Inequality

LEG: Largest excluded group

LOGIT: Ordinary logistic regression

MAR: Minorities at Risk

NHI: Negative Horizontal Inequality

PHI: Positive Horizontal Inequality

START: National Consortium for the Study of Terrorism and Responses to Terrorism

UCDP: Uppsala conflict data program

VI: Vertical Inequality

ZINB: Zero-inflated negative binominal

1.   Introduction

Ten years after the start of the war in Iraq the country is still divided and haunted by ethnic violence. Iraq has not only been experiencing terrorism in relation to anti-American insurgency, but also sectarian strife among Shia and Sunni militias, and in relation to the conflict between Arabs and Kurds mainly in northern Iraq (Kalyvas & Kocher, 2007). The UN Iraq mission reports that April 2013 was the deadliest month in the country since June 2008, with 712 fatalities and 1.633 injured. The upsurge in terrorist activity is related to al-Qaeda in Iraq and other Sunni based insurgency groups which have conducted attacks on a daily basis to undermine the power of the Shia-led government and to provoke confrontation[1]. It seems evident that these problems are connected to the government's inability to solve the power sharing structures among the three major ethnic groups; Shia, Sunni and Kurds[2]. Although the death-tolls are high and the implications for national and regional security are severe, this kind of ethno-nationalist domestic terrorism does not get nearly as much attention as its "more spectacular" counterparts. The terrorist actions in Oslo 22 July 2011, the hostage situation in In Amenas January 2013 and the recent bombings in Boston are only a few examples of terrorist activity which have been given large media attention in the last couple of years. These attacks put terrorism on the agenda for politicians, commentators and policymakers, but the overwhelming focus on these events only give us one picture of the highly complex terrorist phenomenon.

After the terrorist attacks on September 11 2011 (henceforth 9/11) the research on terrorism has expanded immensely, focus on case-studies of terrorist organizations and specific countries experiencing terrorism. In later years researchers have also to a larger degree employed quantitative techniques to explain the roots of terrorism, to provide knowledge on a general basis of what motivates terrorist organizations. But even though there has been much research and large funding from states and research agencies, there seems to be a lack of agreement on the roots causes of terrorism. One of the

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[1]http://www.nydailynews.com/news/world/april-deadliest-month-iraq-june-2008-u-n-article-1.1334172?localLinksEnabled=false

[2]My definition of ethnicity throughout this thesis follows that of Cederman et al. (2010:2): "any subjectively experienced sense of commonality based on a belief in common ancestry and shared culture. Different markers may be used to indicate such shared ancestry and culture: common language, similar phenotypical features, adherence to the same faith". Thus my notion of ethnicity also includes different religious groups.

reasons for this is the complex and widely different motivations of the groups ranging from ethno-nationalist sentiments to right-wing extremism.

Keeping in mind that terrorism is a complex phenomenon, I start out by examining two aspects of the terrorist activity: namely how ethnic identity and inequality are connected to terrorism. Generally the ethnicity aspect has not gotten that much attention in large-N quantitative studies of terrorism. Although there are some evidence from case-studies indicating that unequal treatment of marginalized groups play an important role in explaining terrorism (Ergil, 2000; Van de Voorde, 2005; Bradly, 2006; Derin-Grue, 2011), except for recent studies by Piazza (2011; 2012) the status of ethnic groups has been overlooked in studies of the root causes of terrorism.

The starting point of this thesis is to fill the gap between empirical case-study evidence on terrorism, and empirical results from the study of civil war and terrorism- indicating that inequality along different dimensions is of great importance in explaining political violence. Previous quantitative studies of terrorism have only tested inequalities at the individual level, and country-level variations in individual inequality. My notion of inequality goes beyond individual economic inequality, and rather focuses on inequality between groups. This is mainly because terrorism is largely seen as a group phenomenon (with some exceptions, like Breivik in Norway). Horizontal inequality is, among others, proposed by Frances Stewart (2002; 2008; 2009), and describes inequalities in four dimensions; social, economic, political and cultural. The theory specifically points to group factors as a main motivation for political violence. This generates my general research question:

> *Countries with groups facing strong horizontal inequalities have higher probability of experiencing terrorism than more egalitarian countries.*

In this thesis I take a specific look at ethno-nationalist terrorism, and factors connected to this specific sub-type of terrorism. The analysis will be conducted at the country- and group-level. The county-level analysis tests how horizontal inequalities affect rates and probability of domestic terrorism on a general basis. Further the new disaggregated group-level approach makes me able to test the causal-mechanism between horizontal inequalities and ethno-nationalist terrorism directly. To my knowledge this is the first truly global attempt to code and locate terrorist groups and connect this to

geographically defined ethnic groups. My analysis is thus the first quantitative study of group-level mechanisms and terrorism.

To make this analysis possible I have coded and gathered information from the Global Terrorism Database (GTD) and combined this with information on ethnic groups from the Ethnic Power Relations Dataset (EPR). The new data provides the opportunity to look specifically at ethno-nationalist terrorism. Following this, my thesis contributes to the study of terrorism in several ways. First, the thesis provides new disaggregated data on ethno-nationalist terrorism. Second, I am making use of specific theories apt to explain the group-dynamics of ethno-nationalist terrorism (horizontal inequalities). Third, the new data-material makes it possible to test variables describing geographically based ethnic groups, and variables measuring their economic and political status directly.

The thesis is structured as follows, in Chapter 2 I am defining terrorism and describing the differences between terrorism and other types of political violence. Thereafter, because of the complex nature of terrorist phenomenon I introduce some of the main hypotheses put forward in the literature and the main findings. At the end of Chapter 2 I am pointing out methodological and conceptual challenges which I deem important, and possible ways forward.

In Chapter 3 I introduce the theoretical framework of the thesis, namely *horizontal inequalities*. Based on literature on identity formation, and mobilization theories I am connecting these structural inequalities specifically to ethno-nationalist terrorism. At the end of the chapter I put forward my hypotheses derived from my general research question and the theoretical discussion. Chapter 4 depicts the research design of this thesis, which is of a quantitative nature. The chapter includes a detailed description of my work on coding terrorist organizations, ascribing these with an ethnic identity, and possible limitations to this approach. I also describe data, the variables being used and the statistical methods applied.

Chapter 5 introduces my analysis. Here I test my hypotheses using different operationalizations of the dependent variable at both country- and group-level. Because of the nature of my dependent variables I am using two different statistical methods. At the end I summarize my main findings from the analysis. Further, Chapter 6 summarizes

and gives a conclusion. I describe the contribution of my research, as well as some of the challenges. I also present some policy recommendations and possibilities for future research.

The main finding of my thesis is that throughout different operationalizations political horizontal inequality is a strong predictor of terrorism. Additionally I find some support for economic horizontal inequality, although the results are not as robust as for the political exclusion hypothesis. Northern Ireland provides a good example of how both political and economic horizontal inequalities may have been a crucial factor in producing ethno-nationalist terrorism. But even though my analyses focus on ethno-nationalist terrorism it is reasonable to expect that these results can be generalized to other types of terrorism, such as ideological terrorism, and that the unequal treatment of groups generally leads to mobilization for different types of terrorism.

2. Definitions and literature review

This chapter discusses different definitions of terrorism and how it differentiates from other types of political violence. It includes a summary of different hypotheses and findings from the research field. At the end there is a discussion on some potential problems in the current state of the literature.

2.1 Defining terrorism

> The difference between the revolutionary and the terrorist lies in the reason for which each fights. For whoever stands by a just cause and fights for the freedom and liberation of his land from the invaders, the settlers and the colonialists, cannot possibly be called a terrorist, otherwise the American people in their struggle for liberation from the British colonialists would have been terrorists.

The quotation is from Yasser Arafat's[3] speech to the UN General Assembly in 1974, and shows the great difficulty researchers of terrorism meet when trying to define terrorism, where "One man's terrorist is another man's freedom fighter". The perception of terrorism may be different from country to country, and for different groups and individuals. The hostage situation in In Amenas (Algeria) in January 2013 has shown us that the links between the foreign policy of states, internal rivalries, ethnic boundaries and contagion is a large part of the terrorist phenomenon. The terrorist actions in Algeria show a complicated picture of how difficult it is to investigate the root causes of terrorism, as the mechanisms that produce opportunities; frustration and mobilization are manifold and deeply intertwined[4]. Although groups generally have widely different reasons for using terrorism, most scholars agree on the definition proposed by Bruce Hoffman (2006) that terrorism is:

> ...the deliberate creation and exploitation of fear through violence or the threat of violence in the pursuit of political change. All terrorist acts involve violence or the threat

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[3] Yasser Arafat leader of the PLO in Palestine. Speech from: http://www.monde-diplomatique.fr/cahier/proche-orient/arafat74-en.

[4] Both regional and transnational factors are involved, and the attack directly follows from a series of Tuareg uprisings in Mali, leading to French intervention in the country (Parks, 2013). Parks (2013) calls the phenomenon "trans-regional Jihadism", where the event was planned in Mali, launched from Libya, and executed in Algeria.

of violence. Terrorism is specifically designed to have far-reaching psychological effects beyond the immediate victim(s) or object of the terrorist attack. It is meant to instill fear within, and thereby intimidate a wider "target audience" that might include a rival ethnic group or religious group, an entire country, a national government or political party, or public opinion in general (Hoffman, 2006: 40-1).

A violent action is not regarded as a terrorist attack unless it has a political or social motive, thus a drive-by–shooting in a city street is not a terrorist action. Therefore terrorist actions are not random; they are executed and planned, and the terrorists do account for risks, gains and the costs that are affiliated with the attacks (Enders & Sandler, 2005).

2.1.1   Ethno-nationalist terrorism

Ethnic terrorism can be defined as the deliberate violence by a sub national ethnic group to advance its cause. Such violence usually focuses on the creation of a separate state or on the elevation of the status of one communal group over others. Designed to foster identity as well as to advance standard political goals, ethnic terrorism is often directed against symbolic targets. Unlike other terrorists ethnic terrorists often have a built-in audience among their own communal group. Ethnic terrorism bears many similarities to guerrilla conflict. In fact, it is often seen by its practitioners as part of a proto-guerilla movement (Byman, 1998: 151).

Ethno-nationalist terrorism usually focuses on the creation of a state, or the enhancement of a groups' status. Therefore ethno-nationalist terrorism often includes some sort of separatist goal. For instance the Kurdish Workers' Party (PKK) has conducted terrorist campaigns since the mid-1980s, mainly in the south-eastern region of Turkey, and their goal is to establish an independent Kurdistan (Reinares, 2005;121). Byman (1998:151) expresses the difference between revolutionary and ethno-nationalist terrorism; "Any believer can join the Shining Path, but non-Tamils would find it hard to join the LTTE" [5]. Some examples of ethno-national terrorism is the Tamils Sri

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[5] The categorization of terrorist groups is somewhat problematic, but we can divide the motivations into several different categories (Masters, 2008). Different types of terrorism vary from ethno-nationalist to more ideological (e.g. revolutionary/ leftist) terrorism. On the one hand revolutionary terrorists ultimate goal is regime change trough a popular uprising, or more specifically aim to "destruct capitalism"(Sànches-Cuenca, 2009). The revolutionary terrorist organizations often used Marxist jargon to mobilize followers, and their actions seldom led to killing people. For example the Angry Brigade in Great Britain attacks "property, not people" (Sànches-Cuenca, 2009:689).

Lanka (LTTE), the Sudanese Peoples Liberation Army's (SPLA's) struggle against the Muslim majority in the north of Sudan[6], and the Palestinians also apply different terrorist tactics (Enders & Sandler, 2005:8). Further Byman (1998) emphasize that the motivations for some ethno-nationalist groups' evolve over time:

> Some groups, of coerce, evolve from one type to another. Hezballah, for example, started as a religious movement seeking to turn Lebanon into an Islamic state. In recent years, however, Hezballah has increasingly pursued communal goals. Today, Hezballah primarily seeks to advance the agenda of Lebanese Shi'a community (and to a lesser extent Shi'a worldwide) rather than a particular religious tenet. Hezballah retains its pan-Islamic ideology, but its ideological goals are subordinated to more practical concernes of the Lebanese Shi'a community (Byman, 1998: 151-152).

2.1.2 Terrorism and political violence

Another definitional challenge affects distinguishing terrorism from warfare. Enders and Sandler (2005) describe the distinction as:

> In its classic sense, war targets combatants with weapons that are highly discriminating in order to limit collateral damage on civilians. Unlike war, terrorism targets noncombatants in a relatively indiscriminate manner (Enders & Sandler, 2005: 6).

What distinguish terrorism from other forms of political violence is thus the difference between target and victim (Findley & Young, 2011:415). Other forms of political violence, such as civil war, (mainly) do not have the same disparity. But although there are clear differences between civil war and terrorism, the two are often intertwined. One example of a terrorist group operating in a setting of civil war is the Shining Path in Peru. The group was active in the 1980s and 1990s, and used extreme measures to keep coherence in the group. Their tactics were to use violence against civilians to keep the larger population on their side and then attack the state (Findley & Young, 2012:285). Bjørgo (2005) emphasize that terrorism often is a radicalization of various types of conflict, frequently between different ethnic minorities, ideological groups and the

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[6] Some ethno-nationalist terrorist groups have religious elements, but the main motivation may not lie in the religion per se. Especially in the years after 9/11 there has been a large focus on the religious aspect of terrorism, and thus specifically on the brutality of "Islamic terrorism". This has been called the fourth wave of terrorism, arguing that we now have a "new wave" which is highly religious and more lethal than previous types of terrorism. See Rapaport (2004) for more on the "new wave" of terrorism.

government. He emphasizes that the roots of these types of conflicts also (often) are the same as those for terrorism, but it is also worth noting that many conflicts do not lead to the use of terrorism (Bjørgo, 2005: 4).

The University of Uppsala provides a large amount of data on one-sided violence, inter-state war and intra-state war. The definition of an intra-state conflict from the Uppsala Conflict Data Program (henceforth UCDP)[7] is that the war is between the state at the one hand and a non-governmental organization on the other (with at least 25 dead due to battle in a year). To be regarded as a civil war there needs to be at least a thousand battle related deaths in a year. So given the event that terrorist actions do result in more than 25 casualties in a year (or a thousand), the terrorist action is coded in the UCDP dataset. To describe the difficulty with the analytical distinction of political violence and terrorism:

> In terms of the targeting of civilians the UCDP's category of "one-sided violence" often overlaps with definitions of terrorism with a lethal outcome. Any actor directly targeting and killing civilians are perpetrating one-sided violence. This includes also governments of states; a type of actor that according to many definitions of terrorism cannot be "terrorists" (UCDP, 2003).

This may make one wonder how different the division of the two types of violence really is, at least according to some definitions. The attacks in Norway on the 22 July 2011 would have been coded as one-sided violence in the UCDP had Anders Behring Breivik been part of an organized group, because the attack was directed at the government district (e.g. the state). On the other hand the attacks against the US on 9/11 are coded in two ways in the UCDP dataset:

> As an example one can look at the events of 9/11. Three planes crashed into building in the USA; two into the World Trade Center and one into the Pentagon. The two planes flying into the World Trade Center are viewed as being acts of one-sided violence, since the World Trade Center is not a military target or a representation of the government of the USA. The third plane, which crashed into the Pentagon, is, however, coded as state-based violence as the Pentagon is a military installation (UCDP, 2013).

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[7] For UCDPs definitions and datasets see: http://www.pcr.uu.se/research/ucdp/definitions/.

These examples tell us that the line between political violence and terrorism may not be that different after all (e.g. Boyle, 2012). Following this it seems plausible that the factors of terrorism and civil war/conflict may be the same, for example the theoretical framework used to explain why groups use terrorism as a tactic to reach their goals, as pointed out by Lia (2005:12):

> To study terrorism in isolation from the larger body of political-violence and civil-war studies is problematic. Terrorism and armed conflict is closely linked, and the causalities explaining variations in civil war may also help us in understanding the causes of terrorism.

2.1.3 Transnational vs. domestic terrorism

As we have seen terrorism is a complex and highly diverse phenomenon, but there is a main division between domestic and transnational terrorism[8]. The latter is terrorism which includes different nationalities, and research on the subject often divides between origin and target country (Enders & Sandler, 2005; Krieger & Meierricks, 2011). Domestic terrorism is on the other hand a homegrown phenomenon, and its effects are mostly visible in the host county. Domestic terrorism effects property, citizens, institutions and national politics (Enders & Sandler, 2005). Ethno-nationalist conflicts (e.g. Basques in Spain) are mostly connected to domestic terrorist attacks[9]. What is important to mention is that domestic attacks outnumber the transnational counterpart, and there are about eight times as many domestic terrorist events (Enders & Sandler, 2008).

Despite this being the case, domestic terrorism attract far less interest from the media and scholars. One reason why this type of terrorism has been given more limited attention from scholars is the nature of the phenomenon. Domestic terrorist events usually receive less international media coverage, because it is a mechanism to express discontent with domestic conditions (Schneider et al., 2009). This has made information

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[8] Another type of terrorism that will not be discussed further in this thesis is state terrorism. This is in cases where the state itself uses terrorist tactics against its own citizens (e.g. Stalins reign of terror). Although the tactics are sometimes the same, my definition of terrorism only includes perpetrators that are subgroups or individuals, and thus state terrorism by definition falls out of the equation (Enders & Sandler, 2005:4).

[9] Although the rebels may want to publicize their grievances or wishes to the rest of the world, and therefore engage in attacks in other countries, e.g the PLO (Enders & Sandler, 2005).

on the subject less available, but the lack of information has to a large extent vanished with the spread of internet.

2.2   Previous research on terrorism

In this section I will introduce some quantitative empirical findings from the growing literature on terrorism. This shows the vast array of different understandings and theoretical perspectives that is used to describe the phenomenon. Most studies of terrorism rely on transnational terrorism, relying on data describing origin and target country. The articles include a large amount of variables, model specifications and hypotheses, and test many sides of the phenomenon. As the nature of my research question proposes factors of the origin country to be of specific importance, the studies described here look at specific factors of the origin country of transnational terrorism. This is because it is probable that the structural factors also apply when looking more specifically at home-grown domestic terrorism[10]. Some of the newer studies do distinguish between domestic and transnational terrorism, and these will also be presented in this survey.   The review will rely on six different factors/hypotheses presented in different peer reviewed articles and book chapters investigating the root causes of terrorism. These are contagion, modernization-strain, transformation and political stability, political and institutional factors, identity and economic deprivation[11].

Contagion

The contagion hypothesis refers to terrorism as a phenomenon which is produced by spatial and temporal spillover effects from neighboring states, "the main idea is that terrorism exhibits a strong self-energizing nature with respect to both time and space" (Krieger & Meierrieks, 2011:8). Countries in a region with neighboring conflicts, civil wars or neighbors which experience high levels of terrorism, are more prone to experience terrorism in their own land (e.g. by groups cooperating by sharing knowhow over the borders) (Schneider et al., 2009). Plümper & Neumayer (2010) found in their

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[10] This is also noted by Findley& Young (2011) but it is also of great importance to emphasize that the causal-mechanisms may *not* be the same.

[11] Note that the studies may not be directly comparable as they use different timeframes and data-sources. It is also worth noting that many of the hypotheses are clearly connected, and may be overlapping. This is also noticed by Krieger & Meierrieks (2011).

analysis of international terrorism in the years 1970-2005 that countries close to unstable countries (e.g. countries in civil war or high levels of terrorism) would have increased risk of experiencing terrorism. Using Geographical information system (GIS) Berrebi & Lakdawalla (2007) found that terrorism was more likely in areas closer to international borders and in areas close to terrorist bases. They found that location is a main motivational factor for attacks. There is also reason to believe that there is a temporal dependence in terrorism, whereas countries often experience terrorism over and over again. Lai (2007) and Enders & Sandler (2005) find a positive effect between levels of terrorism and previous terrorist activity in the country.

Modernization

Modernization and the strains connected to globalization are hypothesized to have an impact on the occurrence of terrorism. With a rational-actor perspective Li & Shaub (2004) look at globalization and factors connected to economic integration. Their analysis shows that economic development gives less incidents of terrorism in the origin country (through e.g. attacks on embassies) (Li & Shaub, 2004:232). Lai (2007) looks at origin countries and concur with what is found in regards to economic climate. Good economic conditions make it less advantageous to use terrorism. This is measured with GDP growth, and countries with higher GDP growth seem to have less terrorism. Looking at a short time-span (1997-2004), Bravo & Dias (2006) find that countries in Eurasia with lower economic growth, non-democracies, with low literacy levels and less dependence on trade experience higher levels of terrorism.[12] Following in the same rational actor perspective Freytag et al. (2011) investigate domestic terrorism in 110 countries from 1971-2007. From their analysis they conclude that improvements in countries economic conditions can help increase the opportunity costs of terrorism, and thus give less terrorist incidents (Freytag et al., 2011; 14). The proxies for "strain" factors are highly debatable, as growth in GDP may not be directly connected to "modernization" as such[13].

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[12] Bravos & Dias (2006) do not explicitly look at domestic or transnational terrorism but rather data on total terrorist attacks for the period, the same goes for Burgoon (2006).

[13] Another hypothesis is the global political and economic order. This relates to international factors also plays part in the creation of terrorism (Krieger & Meierrieks, 2011). High economic integration and trade openness has been found to be negatively correlated to production of terrorism (c.f. Kurrild & Klitgard, 2006). Not surprisingly, being part of an *international* war seems to produce more terrorism (Lai, 2007).

Political transformation and stability

For scholars investigating this hypothesis, political transformation and stability of a society is the main drivers for groups turning to terrorist tactics. State failure is an important factor, and countries which are in a transitional period are more prone to experiencing high levels of terrorism, either being produced there (transnational terrorism) or being vulnerable for attacks on their own land (domestic incidents). Transitions in political systems create a political vacuum that increases the incentives of individuals in joining terrorist organizations, rather than conventional channels for political participation (Schneider et al., 2009; Krieger & Meierrieks, 2011). Examples of such an increase in terrorism in a transnational period can be found in Spain, where the transition from an autocratic to a democratic regime was followed by a growth in terrorism (Abadie, 2004). Abadie (2004) finds that political freedom is the most salient variable, and that intermediate levels of political freedom is significantly correlated with terrorism. The results seem to indicate that there exists a converted u-curve in regards to terrorism, where transitional periods are accompanied with an increase in terrorist activity. Findley & Young (2011) also concur with this in their cross-country analysis of domestic terrorism. Countries in transitional periods (semi-democracies) experience higher levels of domestic terrorism than their democratic and autocratic counterparts. Their sensitivity analysis also reveals that this is evident when studying transnational terrorism as well (Young & Findley, 2011).

Specifically looking at civil war and terrorism (as discussed in Section 2.1.2), Lai (2007) finds that countries which experience civil war (and thus instability) is more likely to produce higher levels of terrorism. Further using geo-referenced data, Findley and Young (2012) are able to look closely at the link between the two phenomena. Their results show that "most incidents of terrorism take place in the geographic regions where civil war is occurring and during the ongoing war" (Findley & Young, 2012:286). This gives evidence to the fact that terrorism may be one of the rebel group tactics in a civil war (or a civil conflict).

Political and institutional factors

Rather than looking at the transformation and stability of the political system (seen in the previous section), the political and institutional factors hypothesis is related to the inherent factors of democracy (e.g. democratic peace). The political "access" school proposes that higher levels of democracy results in less terrorism, because democracy has some inherent "conflict reducing mechanisms". These mechanisms help people address their grievances through conventional channels of participation. On the other hand, the "strategic" school of the democracy-terrorism nexus proposes that terrorism encourages terrorism through civil liberties, and thus that democracies are enabling terrorism (Drakos & Gofas, 2006a).

When looking at the origin country of transnational terrorism democracy is found to be a negative predictor (Eyerman, 1998; Krugler & Lantin, 2006; Krueger & Maleckova, 2003; Kurrild-Klitgaard, 2006; Shaun & Phillips, 2009), thus giving more support to the access school of democracy[14]. Li (2005) finds that political participation has a negative effect on the levels of terrorism, while executive constraints are related to higher levels of terrorism. The results suggest that different parts of the democratic system promote terrorism. Piazza (2011) uses the same differentiation between political participation and executive constraints in his analysis of domestic terrorism; he finds that both are negative predictors of domestic terrorism. The results provide more evidence for the belief that the causal mechanisms are different for domestic and transnational terrorism[15].

Another factor relating to institutional and political factors is welfare policies. Burgoon (2006) finds that countries with more generous welfare systems are likely to experience fewer terrorist attacks. He proposes that even the least developed countries will be better off with more social policies, and health services (Burgoon, 2006:179-80). Following in Burgoon's footsteps Kriegler & Meierrieks (2010) look at different sides of fifteen Western European welfare states from 1980 to 2003. Based on different social

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[14] When looking at target country for international terrorism, democracy seems to be a strong predictor (Blomberg & Hess, 2008; Li & Shaub, 2004; Li, 2005; Lai, 2007). This may have a natural explanation in regards to the "foreign policy" of democratic states, and thus more in common with the global order hypothesis.

[15] It is important to notice that the effect of democracy may stem from biased data material, where the openness of media in democracies makes the rates higher, while autocracies do not have the same press freedom, and thus fewer attacks are being reported (Drakos & Gofas, 2006a).

policy indicators, such as unemployment benefits, labor-market programs and health services, they find welfare policies to be a negative predictor of homegrown terrorism. The same pattern is not present when looking at transnational terrorism, and thus welfare policies only seem to have impact on domestic terrorism. Krieger & Meierrieks (2010:930) suggest that; "our analysis thus sides with other contributions that emphasize the importance of raising the opportunity costs of terrorists instead of relying on hard-line counter-terrorism strategies".

Yet another aspect of the institutional conditions is education. Brockhoff et al. (2012) focus on the impact of education on terrorism, and they find that education may actually promote terrorism in countries where the socio-economic conditions are not stable. They also find that education must be combined with efforts to better the issues in relation to poverty, inequality, discrimination and economic growth. They emphasize that "education can only be expected to have a beneficial (terrorism-reducing) effect when country-specific conditions are favorable" (Brockhoff et al., 2012:29).

Identity factors

As mentioned earlier (in Section 2.1.1), different identities can potentially be an important factor for terrorism. It is a highly relevant hypothesis which proposes that ethnic or religious identity is especially important when we wish to explain why terrorism occurs. This hypothesis can on the one hand, be viewed as a factor on its own, where terrorism is more likely between different identities or across *civilizational lines* (cf. Huntington, 1993). On the other hand, it can be interpreted more as a necessary precondition for mobilization for terrorism. Usually studies of terrorism only include identity indicators or ethnic factors as control variables in the statistical analysis[16].

Looking at the origin country of terrorism, Piazza (2006) finds that ethnically-and religiously diverse societies have a higher likelihood of terrorism and that these factors are more salient than variables measuring economic factors. While Piazza's analysis seems to give support to the ethnicity-terrorism argument, others have not found this connection. Kurrild-Klitgaard et al. (2006) can only find a weak positive link between ethno-linguistic fractionalization and terrorism. Krueger & Laitin (2008) do not seem to

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[16] Engene (2007) uses the TWEED dataset (measuring domestic terrorism in Western Europe).He finds that about 80 per cent of the events are connected to ethno-nationalist terrorism.

find any significant positive relationship between ethno-linguistic fractionalization at all, and goes far in dismissing the hypothesis. But in agreement with Piazza's (2006) results, Basuchoudhary & Shughart (2010) look at the origin state where the transnational terrorism stems from. They find that transnational terrorism is more likely to originate in states which are more ethnically tense, and the ethnicity aspect also holds when controlling for institutional factors. As mentioned, these studies have in large part used ethnic indicators as control variables, and the different variables may also have its weaknesses[17].

Trying to overcome the gap in the literature, Piazza (2011) is one of the first who looks at the factors producing domestic terrorism in regard to poverty and discriminated minority groups. He is using variables gathered from the *Minorities at Risk* project (MAR) and he conducts a cross-national analysis of domestic terrorism, with emphasis on differences between ethnic groups (and discrimination). Piazza suggests that the study offers two main conclusions. First, that discrimination is a crucial factor in explaining domestic terrorism, and that countries which "permit their minority communities to be afflicted by economic discrimination make themselves more vulnerable to domestic terrorism" (Piazza, 2011:350). Second, he concludes that while aggregate levels of poverty do affect domestic terrorism, this has a smaller effect than a minority group`s economic status (Piazza, 2011:350). This seems to suggest that the link between ethnicity and terrorism is especially strong, and that the economic and political status of the different ethnic groups may explain more of the cross-country variation in terrorism.

Building on his previous work Piazza (2012) expands the analysis to both domestic and transnational terrorism. The analysis also includes variables which measure minority discrimination along different dimensions, such as, political, economic, religious and linguistic. Then, looking more closely at the different factors in the minorities' positions[18], he finds that countries with economically discriminated minority groups have higher levels of terrorism; this includes both counts of domestic and transnational terrorism. He finds that ethno-political grievance, or in this regard political discrimination, matter less than the minority economic discrimination variable.

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[17] I will return to the problems with the ethnicity variables in section 2.3.1.
[18] All analyses are done using variables from the MAR-dataset.

Economic deprivation

> We fight against poverty, because hope is an answer to terror[19].

The notion that terrorism stems from economic underdevelopment and poverty is a popular belief among many policy makers and commentators. Although there are many arguments of how and why socio-economic conditions are connected to terrorism, the "Rooted-in-poverty" (relative deprivation) hypothesis is the most controversial.

Rather than focusing on the economic growth factors connected to modernization, the economic deprivation hypothesis proposes that poverty and inequality lead to terrorism, because there is a discrepancy between what people get and what they feel like they deserve (e.g. Gurr, 1970). This deprivation is in the quantitative literature largely connected to individual circumstances, and to poverty. Case-studies have provided evidence that there is a positive relationship between discriminated groups, poverty/inequality and terrorism (Ergil, 2000; Van de Voorde, 2005; Bradly, 2006; Derin-Grue, 2011). Although the case-based knowledge shows a positive relationship between relative economic deprivation and terrorism, the large-N studies of terrorism are not as confirmative.

In one of the first time-series analyses of terrorism, Thompson (1989) looks at relative deprivation theory explicitly and hypothesizes this as a motivating factor for terrorism in Northern-Ireland in the period 1922 to 1985. The analysis do not provide evidence of a positive connection between terrorism and relative deprivation, using levels of unemployment as a proxy for deprivation, although Northern Ireland experienced high levels of unemployment in the period. Newer cross-country analyses have found some evidence that poverty to some extent increases the levels of terrorism. Bloomberg and Hess (2008) and Lai (2007) find that higher levels of GDP per capita reduce the likelihood of terrorism, and that this in turn provides evidence of the "rooted-in poverty" hypothesis. Caruso and Schneider (2011) finds for Western Europe that larger economic opportunities (using GDP per capita) lower the likelihood of terrorism. Abadie (2004) do not find the same results in regard to poverty, and emphasizes that the effect of poverty disappears when controlling for other political and social characteristics.

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[19] George W Bush (2002) speech at the United Nation financing for development confrence in Monterry, Mexico. http://www.pbs.org/newshour/updates/march02/bush_3-22.html

Piazza (2006) sets out to investigate poverty, socio-economic factors and terrorism. The variables that had most effect were the population size, ethno-religious diversity, state repression and the structure of the political system. Piazza concludes that the social divisions are more salient than variables connected to poverty (and economic factors) and thus gives no support for the deprivation hypothesis (that poverty breeds terrorism).

The above mentioned studies show that it is hard to establish a direct connection between economic factors, poverty and terrorism. In a fairly new paper Enders & Hoover (2012) investigates the connection between terrorism and poverty, and they find a strong nonlinear relationship using data on both transnational and domestic terrorism. They also find that countries with high levels of economic inequality will have high levels of terrorism. Their analysis shows that there is a threshold of about 1000 dollars when looking at domestic terrorism. As a country reaches this threshold, domestic terrorism seems to decline. But if the development is followed by higher levels of economic inequality, this could lead to higher levels of domestic terrorism (Enders & Hoover, 2012:11-12). This study supports the notion of an economic deprivation effect that follows inequality in a country. It is also important to notice that Enders & Hoover uses the GINI-coefficient, measuring the distribution of wealth between individuals in a country.

Rather than focusing on aggregated factors, the individual level makes it possible to test the individual motivations for engaging in terrorism directly. Krueger & Maleckova (2003) and Krueger (2007) dispute the argument that poverty is directly connected to terrorism. They emphasize the indirect effect of economy and poverty as a cause of terrorism. Economic deprivation at the individual level may not be connected to terrorism; although they emphasize that there might be a connection at the national level.

> One reason is that we tend to see the world trough materialistic Western eyes, viewing economic circumstances as powerful motivations for belief and action. In addition assuming that those who attack us do so because they are desperate or because they hate our way of life provides a reassuringly simple answer to a disturbingly complex question (Krueger, 2007: 50).

In the case that a country is economically impoverished, this may lead a minority of relatively well off people to use terrorism as a means to improve the conditions of their countrymen (Krueger and Malekova, 2003:30), Krueger (2007) describes the phenomenon as: "the Robin-Hood paradox" (Krueger, 2007:47). The polls used in Krueger's (2007) study are from the West Bank and the Gaza Stip. He finds that having secondary school or higher education, and living standards above the poverty-line is positively connected to participation in Hezbollah.

Further investigation of the mechanisms making individuals use terrorism in the Palestinian population shows to a large extent the same results. Examining data on the Hamas and Palestinian Islamic Jihad (PJI) with comparable data from the Palestinian population show that both high living standards and education seem to be positively associated with membership in terrorism organizations (Berrebi, 2007). The recruitment of highly educated individuals can stem from the fact that these individuals in some way "cannot succeed in the non-terrorism marketplace (e.g. because of their heritage or social standing)" (Berrebi, 2007:8). Berrebi concludes that the link between terrorism and education may stem from some sort of indoctrination factor in the educational system (based on information from Palestinian textbooks).

Krueger (2008) looks at individuals' involvement in Islamic terrorist groups in the US. He uses background information from 67 individuals involved in Islamic terrorist groups versus the background of other Muslims residing in the US. Following his argumentation it seems to be the case that the terrorists are younger and more educated than the general population of Muslim Americans. This is highly different from the profile of other criminals, where a lack of possibilities is the factor that leads people to become criminals. One possibility of explaining this discrepancy is that highly educated and young people have more extreme views or are more willing to act on them, and thus are "motivated by a desire to pursue a political agenda" (Krueger, 2008:10).

2.3 Potential problems with the literature

> Ultimately, terrorism research is not in a healthy state. It exists on a diet of fast-food research: quick, cheap, ready-to-hand and nutritionally dubious. The result of a reluctance to move away from the limited methodologies and levels of analysis of the past is that while the field may appear to be relatively active and energetic, growth in key areas remains stunted and halting (Silke, 2001:12).

Silke provided a gloomy picture of terrorism research back in 2001, and although the research on terrorism has evolved a lot since the article was published, there still seems to be some continuing problems in the research field (see e.g. Gunning, 2007; Young & Findley, 2011 and Boyle, 2012). After the review of the literature, it seems to be that Silke is still right in some aspects of his critique of the field. To me one major shortcoming is the lack of distinguishing between transnational and domestic terrorism and the problem with assuming that the two follow the same causal logic. As most of the studies are explaining the "roots" of terrorism, and often investigate both origin and target countries, the analyses become less efficient. Operating with many hypotheses and theories, and a whole range of control variables do seem to make it harder to conclude. These problems seem evident, but new and better data material has made the possibilities of overcoming these challenges possible. Based on the conflicting results from the analyses described in the previous section and my research question, I am focusing on shortcomings connected to inequality (deprivation factors) and identity. First, I will introduce what I deem to be the most important methodological shortcomings and then I will focus on more conceptual limitations.

2.3.1 Indicators of economic inequality and ethnicity

> Economic inequality is concomitant with social cleavages between classes, religions, generations, and the sexes; between educational and occupational strata; and between linguistic, ethnic, and communal groups (Lichbach1989:432).

The studies testing the deprivation hypothesis in order to explain terrorism do not seem to find strong supportive results. My first critique is connected to the different operationalizations of poverty and inequality, the second critique is connected to the measures used to describe the connection between ethnicity and terrorism.

First, the research has all together not given any strong evidence of poverty being a positive indicator on the levels of terrorism. But, as we have seen, poverty is often measured by GDP per capita. Using GDP per capita as a proxy for poverty is potentially flawed, as this does not capture any distributional factors of economic resources in the country (Krieger & Meierrieks, 2011; Enders & Hoover, 2012). Thus using the GINI coefficient seems to be a significant improvement when explaining the causal logic between economically impoverished individuals and terrorism.

The GINI variable shows how the income distribution in a country differs from an equal distribution (Buhaug et al., 2013:9). Basically the critique of using the GINI as measure of inequality is that the variable may not show the whole picture. Countries that do not have a high GINI coefficient may experience high levels of inequality at the local-level (Østby, 2011:22). The fact is that this measure does not capture the complexity of the relationship between social disparities that may produce incentives for groups to use terrorism. Not only is the GINI coefficient flawed in that it has a lot of missing values, it is also said to be flawed with bias. It seems to be systematic missing values for countries with civil war or which experience conflict (Østby, 2011). As we have seen earlier in this chapter, terrorism is often connected to civil conflict or war, and thus the GINI coefficient may give biased results.

Another problem with using the GINI coefficient is that it probably cannot capture differences in economic factors at the local-level. Cramer (2003:406-7) points to the problem:

> Similarly in Rwanda there is nothing to be gained by artificially abstracting economic inequality, in the form of a poorly measured GINI coefficient, from the country's history, from the combination of population pressure on land and a history of poor policy choices, from the vagaries of international commodity markets, from the agency of individuals and groups, and from international interest and the timing of international demands for democratization.

The focus on aggregated economic differences between individuals may therefore camouflage the real inequality, and countries that have low scores on the GINI coefficient might have a high degree of inequality on the local (sub-national) level of analysis.

The second critique is related to measurements of ethnicity. The conflicting results in connection to ethnicity and terrorism may stem from using problematic variables which do not capture the complex relationship between the ethnic groups in a country. The most common variable used in the studies mentioned in section 2.2 use the *Ethno-Linguistic Fractionalization index* (ELF)[20]. This variable shows us the probability of drawing two individuals with different ethnicity from a population. The critique and debate of the usage of ELF is highlighted in the study of civil war, as it is only reasonable to look at the relationship between the ethnic groups and the state if we want to say anything about the likelihood of civil war/conflict (Cederman & Giraldin, 2007).

> Such tests of ethnicity misstate the theory in at least two crucial ways. First, they tend to assume that violence is primarily a reflection of individual, as opposed to group-level dynamics. Second, conventional econometric models also implicitly assume that conflict patterns are entirely symmetric (Cederman & Giraldin, 2007:182).

As the ELF variable is not apt to explaining the relationship between ethnic groups or between an ethnic group and the state, it seems unlikely that the variable can tell in which way ethnicity and terrorism are connected. The problem with using such a measure is that terrorism (in most part) is an organized activity, and therefore drawing two individuals at random will not give us information on the groups which use terrorism.

Attempting to overcome the problems connected to the use of ELF, Piazza (2011; 2012) uses more suitable variables from the *Minorities at Risk dataset* (MAR). Using variables from MAR is a substantial improvement from using variables such as ELF. MAR "monitors and analyzes the status of minorities in all countries with a current population of at least 500,000 at the group level. The minorities "at risk" are defined as an ethnic group that: "Collectively suffers, or benefits from, systematic discrimatory treatment vis-à-vis other groups in a society; and or collectively mobilizes in defense or promotion of its self-defined interests" (MAR 2009:1).

The results from Piazza's (2011; 2012) analysis show that there is a significant and positive impact of minority discrimination on the levels of terrorism. Although his analysis initially is a step in the right direction, the study still suffers from some

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[20] The ELF is based on information about ethnic groups from the old soviet ethnographic *Atlas Narodov Mira* and is based on the Herfindahl formula of concentration.

limitations. By using MAR variables (aggregated to the country-level of analysis) Piazza misses some of the complexity in the interaction between ethnic groups and the state, as the dataset may suffer from some selection bias. Cederman et al. (2009) emphasizes the problems with MAR:

> The MAR-dataset "hardwires" the degree of power access to the sample definition by excluding groups in power from systematic investigation. This reduces the comparative horizon and thus makes it harder to capture the effects of political exclusion in ambiguous ways (Cerderman et al., 2009: 91).

Piazza`s use of MAR may therefore be problematic. By selecting only minorities that are at risk, we have a problem of selecting on the dependent variable, which may cause biased results (Østby, 2011). An argument can be made that a group`s relative opportunity to influence the conventional political channels could reduce or induce terrorist action. Further, the different indicators of grievances provided by MAR are "quite crude and are largely based on statements and actions by group leaders, which produces rather subjective evaluations of group deprivation" (Østby, 2011:39).

2.3.2 Conceptual limitations: deprivation and inequality

Problems ascribed to the quality of data and levels of analysis apply to all studies of inequality, identity and terrorism/political violence. Yet another problem arises when we look at the conceptual framework used, which proposes that some kind of economic inequality (related to deprivation) is making terrorism more probable. The first problem relates to the conceptualization of inequality as only relying on economic differences, which is only one dimension of the inequality aspect.

> Impoverished countries teeming with poorly educated, unemployed masses qualified by a widening gap between the rich and the poor combined with low literacy rates are fermentation tanks for dangerous and violent militants. The low levels of economic and social development increase the appeal of political extremism and encourage political violence and instability (Piazza, 2006: 160).

Piazza (2006) illustrates the multidimensionality of the derivational factors connected to terrorism. The first conceptual problem of the literature on deprivation and grievance in relation to terrorism is the one-dimensional focus on economic factors. What is not

emphasized enough is the multidimensionality of derivational factors. Solely focusing on the economics can conceal other important motivational factors. For example, there is little notion of how political discrimination and economic factors operate together and that this may be a potent motivational factor for groups' using terrorism. Deprivation factors can also be ascribed to differences in connection to political, cultural and social factors. Unequal access to these factors is conceptually as important as unequal distribution of economic assets (Stewart, 2008). These differences can also be ascribed to an ethnic group's unequal access to political positions in the state (Cederman et al., 2010). So to be able to address the proposed link between deprivation and terrorism, we need to look at the multidimensionality of the inequality aspect.

The second factor is the theory building which focus on country specific and individual explanations. The evidence is mainly built on cross-country results, describing aggregated differences at country-level in relation to deprivation factors. As terrorism in most cases is a group phenomenon (although we do have some exceptions), the exclusive focus on individual attributes measured at country-level may not be able to identify the differences at the sub-national level. It seems reasonable to expect that what motivates terrorist organizations is not best captured by differences at national-level, because we lose an important aspect of the terrorist phenomenon.

Following this line of argumentation factors connected to the individual-level of analysis using survey-data has made it possible to say something about why specific individuals partake in terrorist actions. But it is hard to draw from this evidence when trying to understand what it is that motivates groups. Even though Krueger & Malekova (2003) do not find a link between individual deprivation and terrorism, this does not exclude the possibility that deprivation factors on behalf of a group (or for a part of the population) are important in the mobilization process for terrorism. The individual level analysis has also to a large extent only focused on a specific part of the terrorist phenomenon, namely transnational terrorism, and why individuals in (mainly) the Middle East are engaged in terrorist activity. The evidence may therefore not apply to terrorism in other parts of world. Piazza (2012) describes in which way the research on terrorism should move. Highlighting that the levels of analysis conventionally used in terrorism studies are flawed:

One of the key problems is that the measurements used in the analysis are still over-aggregated. Future studies that are able to "drill down" to the subnational group or individual levels might be better apt to establish a more satisfactory explanation of how generalized or economic discrimination propels individuals to join terrorist groups or support terrorism (Piazza, 2012; 542).

2.4 Where do we go from here

In the next chapter I will introduce the theory of *horizontal inequality* which will explain the structural factors which may produce grievances and mobilization of groups. The theory provides a theoretical framework that explains the structural asymmetries that make ethnic groups use terrorism. The causal mechanisms will be shown through more specific theories on ethnic group mobilization (Gurr 1993; 2000) and grievance based theories directly connected to terrorism (Crenshaw 1981; Ross 1993) will help explaining the causal relationship.

3.   Theory

Previous quantitative research on terrorism has not been able to sufficiently account for group-level variance and inequality between groups. This chapter defines the theoretical background for this thesis. It draws knowledge from the civil war literature, as this field has come further in theorizing how horizontal inequalities affect political violence. It also provides hypotheses derived from the theoretical discussion.

3.1   Defining horizontal inequalities

> Men may and do certainly joke about or ridicule the strange and bizarre customs of men from other ethnic groups, because these customs are different from their own. But they do not fight over such differences alone. When men *do,* on the other hand, fight across ethnic lines it is nearly always the case that they fight over some fundamental issues concerning the distribution and exercise of power, whether economic, political, or both (Cohen, 1974:94)

Studies indicate that inequality and poverty make societies susceptible for civil war and political violence, especially if the patterns follow culturally defined groups (Lia, 2005:103). These inequalities are described as horizontal, rather than vertical. Horizontal inequalities measure differences between groups, while vertical inequalities (VIs) measure inequalities between individuals in a country. Stewart (2008:4) defines HIs as; "(...) inequalities in economic, social or political status between culturally defined groups". The theory of horizontal inequality connects both theories of relative deprivation and social identity theory (Østby, 2011:31). In this case it is therefore necessary to know what is implied with relative deprivation. One interpretation of relative deprivation stems from Davies (1962)[21]. He proposes a theory of revolution where there is a discrepancy between what is expected and what you get. Put shortly, revolutions are more probable after a period where expectations are rising (when the economic climate is better). Revolution is not probable if there has not been a period with increasing hope and anticipation in the society (Davies, 1962: 17). Later on Gurr (1970) expanded Davis's theory to include other forms of political violence (not only revolutions). Gurr's theory is based on a psychological notion that there is a relationship between intensity of deprivation and collective violence. Relative deprivation is defined

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[21] The notion goes as far back as Aristotle (Gurr, 1970).

as an individual's perception of a discrepancy between their expectations and capabilities (Gurr, 1970:24). The feeling of deprivation thus produces grievances and therefore serves as a mobilizing factor for political violence. This notion of relative deprivation is usually connected to material and economic well-being.

Rather than focusing on the individual psychological mechanisms that may turn relative deprivation into violence, Gurr (1993) builds on his previous work and introduces a theory which connects relative deprivation between minority ethnic *groups*, and explains how and why these groups rebel. His theory provides an ethnic and structural framework to explain violence and civil upheaval. The theory predicts that when there is a relative discrepancy between what groups get and what they feel that they deserve, the relative gap between what is expected and what is reality can produce grievances. Gurr`s basic theoretical premise is based on the assumption that:

> Protest and rebellion by communal groups are jointly motivated by deep-seated grievances about group status and by the situational determined pursuit of political interests, as formulated by group leaders and political entrepreneurs (Gurr, 1993:166-67)

His general argument is that grievances and the reasons for these are critical in the early stages of group mobilization. Gurr finds in his analysis of minority groups and rebellion that there is a clear connection when "economic disadvantages, especially those associated with discrimination and poverty, are consistently correlated with economic and social grievances and demands for greater political rights" (Gurr, 1993:188).

Building on Gurr's (1993) notion of inter-group inequality, Frances Stewart (2008:4) emphasize the multidimensionality of the horizontal inequalities, and that these can be divided into four different categories of HIs. These are: social, political, economic and cultural (Stewart, 2008). Political HIs are connected to the ethnic groups position in relation to the executive power / government, and being excluded from participating in political life is an important factor of political HIs (Østby, 2008b). Groups being excluded from power happen all around the world, one example of a group experiencing exclusion from central power is the Kurds in Turkey.

The social HIs are connected to social factors, such as unemployment, education and healthcare. One example may be when an ethnic group in one region has unequal access

to healthcare and education, which has been the case in Nepal (Mursheed & Gates, 2005). The cultural HIs, which are differences between groups, are connected to culturally inherited factors, such as official language or religion (Stewart, 2008). Inequalities along the cultural dimension have a focus on differential treatment from the state (and others) when it comes to culture "in itself". Langer & Brown (2008:42) define cultural HIs as "perceived or actual differences in the treatment, public recognition or status of different groups' cultural norms, practices, symbols and customs".

Last, but not least, the economic factors regards differences between ethnic groups in the economic sense, where one group may be better or worse off economically than the rest of the population. Iran has recently experienced a lot of ethnic violence, and Bradley (2005) emphasize the economically disadvantage of the Iranian Arabs in Khuzestan[22] as one major factor for the upsurge in violence:

> ..violence in Khuzestan , which is populated by Iranian Arabs who have close historical as well as tribal ties to Iraqi Arabs across the border. (…)About 50 Arabs have been implicated by the government in a series of bombings that killed 21 people after antigovernment riots broke out in April 2005. At least 20 were killed and, and hundreds were injured in the riots itself (Bradley, 2006: 184).

Although the majority of separatist regions and ethno-nationalist groups are backwards economically, in some cases separatist claims also stem from regions relatively better off than the rest of the country. There seems to be grievances connected to being a relative advantaged group as well, because they might feel that they are subsidizing poorer regions (Horowitz, 1985). One example of such a relationship is the Sikhs in the Punjabi region in India. This group is relatively better off economically than the rest of the population, but still uses terrorism as a means in pursuing their separatist claims (Byman, 1998). This example shows that the combination of both economic and cultural factors is important, as the Sikhs are a minority in the region and the country as a whole.

Where there are HIs present from all or several of the dimensions, there is a higher probability that groups will use violence against the state. In part, this is due to the difficulty of separating the different dimensions from each other; they are all interconnected (Brown & Langer, 2010; Stewart, 2008). Great economic inequalities

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[22] Despite Khuzestan's vast natural resources, the province currently ranks among Iran's poorest and least developed (Bradley, 2006:183).

may persist over a long period of time without raising violent response. But when these economic inequalities are combined with changes in cultural or political status (such as downgrading or exclusion from power) these economic factors can be important in the polarization process of the inequalities, and thus as a mobilizing agent (Langer & Brown, 2008:51). Northern-Ireland provides a good example on the multidimensionality of HIs[23]. Northern-Ireland has had a lot of problems with ethno-nationalist terrorism (mainly from the IRA)[24]. For Northern Ireland the inequalities between Catholics and Protestants have been large and persistent for a long period of time. The asymmetries between the two groups could be seen in every aspect of life. For example in education the Catholics lagged behind, incomes were also much lower than for the Protestants. And the unemployment rates were more than double the size for the Catholics. The inequalities also include different parts of the political system and exclusion from central power for both groups (Stewart, 2009:123).

How do HIs become a part of the society? In some cases the HIs are persistent and "produced" by past colonial heritage, where the colonial powers deliberately put one group over others, and therefore producing lasting differences between groups in a country (such as in Rwanda or the Maluas in Malaysia) (Brown & Langer, 2010). But it is also important to mention that the HIs do not have to originate from this type of "constructed" differences by colonial powers. In some cases the HIs are just a case of more peripheral groups which through modernization have more contact with the more powerful groups of the society (Østby, 2011: 26). So HIs can therefore be persistent over time, or more changeable (Brown & Langer, 2010; Østby; 2008b; 2011). From the perspective of individual welfare, persistent group inequality is likely to be a problem because it hinders the deprived from improving their situation. Even though there is a possibility for one individual to change his or her situation, the group as a whole has few opportunities to move up in distribution in economic terms (Stewart, 2009: 318-319). Langer and Brown (2008:51) emphasize that while socioeconomic inequalities can persist over decades, changes in e.g. political inequality are more severe, as it is

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[23] There are many good examples of how horizontal inequalities have played a major role in producing conflict, rebellion and protest, for example; South-Africa, Uganda, Sri-Lanka, Fiji, Malaysia and Brazil (Stewart, 2009).
[24] Also groups operating under different names, all have the same underlying motivation (e.g. INLA, ORIA and CIRA).

important in the "politicization of inequalities". In large, group inequality tend to be more persistent, and more difficult to tackle, than individual inequality (Stewart, 2009).

By now I have mostly referred to evidence from case-studies of horizontal inequalities, but how do the HI argument hold when testing it quantitative, and on a selection of different countries? Is it possible to generalize from case-studies to a wide range of countries?

In one of the first studies of HIs in sub-Saharan Africa, Barrows (1976) finds a positive link between ethnic group differences and instability/political violence. He defines HIs as differences between ethnic groups and their access to politics, work and education. The analysis shows that regardless of type of violence, there seems to be a correlation between instability and differences between ethnic groups. Barrows emphasize the relationship as: "ethnicity takes on importance for political conflict as a manifestation of group response to a growing public realm" (Barrows, 1976; 166). Later Gurr & Moore (1997) uses the MAR-dataset and provide further evidence of a link between HIs and ethno-political rebellion. Measuring different sides of the HI aspect, they find a positive effect of different forms of inequality (through mobilization) to ethno-political rebellion.

Murshed and Gates (2005) use the horizontal inequality aspect to explain the Maoist insurgency in Nepal. They find that intergroup inequalities have robust positive explanatory power over the intensity of the insurgency in Nepal, and that the focus on both ethnicity and the cast dimension is highly relevant to explain the civil war. Using spatial data on geographic factors and resource availability, the analysis show that underprivileged regions have higher intensity of civil conflict, while regional differences in for example literacy did not have the same explanatory power. Mancini (2007) find the same positive relationship between socioeconomic HIs and violence in Nepal. In specific regions of Indonesia, Mancini (2005) finds a positive indication that less developed districts have higher probability of experiencing ethno-communal conflict.

Østby (2008a) provided the first large-N cross-country analysis directly connecting horizontal inequalities to civil war, using variables derived from *Demographic and Health Surveys* (DHS) and MAR variables. The study provides evidence of a positive impact of HIs on civil war in developing countries in Africa. The same variables from the DHS show that higher levels of HIs provide higher risk of civil war and inter-group

conflict (Fjelde & Østby, 2012). Although the analysis gives positive results, the scope of the analysis is also restricted to developing countries in Africa. There are also some possible problematic aspects with using the DHS data (for an evaluation of the data see Østby, 2008a; 2011).

Further Cederman et al. (2011) find positive indications that economic and political HIs at the group-level increases the risk of ethno-nationalist civil war. The study uses data on geographical ethnic group settlement and geographic wealth distribution. As with Østby's (2008a) analysis, Cederman et al.'s analysis also suffers from some restrictions regarding scope, and the data material in this case restricts the analysis to including only groups with a population over 500 000 and only years after 1990 (Cederman et al. 2011). Deiwiks et al. (2012) look specifically at conflict and inequality in federations and show that both affluent and underdeveloped regions have higher probability of experiencing secessionist conflict; this is compared to regions which are more close to the average of the country. Also regions where there is severe ethno-nationalist exclusion have increased risk of conflict. They conclude that; "regional inequality appears to be detrimental to peace, both in regions that are much poorer and in regions that are much wealthier than the country average" (Dewiks et al., 2012:301)[25].

These studies all have some restrictions in scope and temporal span; therefore Buhaug et al. (2013) show the first large-N cross-national country-level analysis of horizontal inequalities. Using aggregated measures of inter-group inequality, both economic and political, derived from the group-level. They find a positive association between HIs and civil war. Thus they are able to show that there exist a positive relationship between HIs and civil war on a global basis.

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[25] Another relevant analysis level is to look at different regions, and the ethnic make-up of these. Cunningham & Weidman (2010) provide a global analysis of ethnic groups and conflict location for ethnic groups observed in the 1990s. Both using data from the Uppsala conflict dataset and connecting the information on conflict to groups in the MAR-dataset. The subsequent analysis shows a positive connection between highly (ethnic) heterogeneous regions and conflict. This study provides evidence that where a ethic group have the majority, and higher degree of access to the state, makes for a "breeding ground" for violent conflict.

3.2 Group formation: identity

> Peoples well being is not only affected by their individual circumstances, but also by how well their group are doing. This is partly because membership of a group is often a important aspect of a person`s identity, and hence the groups situation is felt as a part of an individual`s situation, and partly because relative impoverishment of the group increase the perception of members that they are likely to be permanently trapped in a poor situation, or, if they have managed to do better than others in the in the group, that they are likely to fall back into poverty (Stewart, 2009: 316).

Clearly it is not given that emotions (grievances) trigger terrorism automatically. Without resources and organization, groups have little possibility for mobilization (Tilly, 1978). What is evident from the theory of HIs is that some sort of identity is necessary for a group to mobilize. Identity can be connected to a large set of different identity markers, whereas some are more constant than others. The collective identity is a way of separating groups from each other and increasing coherence in the group. If the identities of a group do not coincide with e.g. borders, this may induce violence (Nordås, 2004), in this case, the use of terrorism. The identity indicators become a salient mobilizing factor when there is some sort of differential treatment from other groups in society. In studies of revolutions, the focus has been on social class as a common identity indicator, where different class struggles have produced revolutions (e.g. Moore, 1993 [1966]). Others believe that religious affinity is a main mobilizing agent which makes groups use violence (Hunington, 1993). Identity may also be strongly connected to geological and territorial factors (Toft, 2003). We often identify with several of these identity groups, but ethnic identity is proposed as being the most salient and conflict prone (Ellingsen, 2000; Birnir, 2006; Østby, 2011). It is important to notice that the ethnicity aspect often overlaps with other factors, such as religion (Østby, 2011).

3.2.1 Ethnic identity

To understand the underlying mechanisms that drive ethnic groups to use terrorism, we have to look at the mobilizing factors. Byman (1998:150) emphasizes the difference between ethnic terrorism and other forms:

Like other terrorists, ethnic terrorists attempt to influence rival groups and hostile governments. But unlike other terrorists, ethnic terrorists focus on forging a distinct ethnic identity and fostering ethnic mobilization.

There is basically three different perspectives to understand ethnic identity and political violence, these are: primordialism, instrumentalism and constructivism. The primordialist view sees ethnic identity as a fixed characteristic of a group, where the ethnic identity is something every individual is born with. This characteristic is not something that can be changed, but remains constant over time (see e.g. Geertz, 1963). For primordialists conflict is connected to differences in ethnicity in itself, and not by other factors in the society (such as political or economic differences) (Østby, 2011: 28). One variance of the primordialist view stems from Vanhanen (1999) who explain conflicts' in a "Darwinian perspective", and thus believes that ethnic identity and ethnic conflict is something inevitable. Therefore greater contact between ethnic groups (through the new communications and migration) will increase the levels of ethnic conflict.

However the primordialist view does not explain why groups change over time, or why conflicts between ethnic groups erupt in some countries, while not in others. As a response to this the *instrumentalists* believe that ethnic identity is constructed by groups and their leaders. Basically, instrumentalists see identity as a means for groups to achieve a political or economic goal. Ethnicity therefore has little independent explanatory power outside the political realm; Rothschild (1981) calls this "politicized ethnicity". The instrumentalists believe that conflicts are stimulated by elites who mobilize their ethnic group in pursuit of their own personal goals. Therefore it seems that ethnicity is something that can be exploited by the will of elites (Østby, 2011: 29). To some extent the instrumentalist approach to ethnic identity stems from a disregard of modernization theory (where ethnic factors would be replaced by class identity). Ethnicity is basically a set of identifying factors that are used by entrepreneurs to achieve an economic or political goal. In this way the ethnic identity can be used as a mobilizing factor for collective violence, but not as a conflict factor in itself as the primodialists propose (Rotschild, 1981; Nordås, 2004; Østby, 2011).

The Constructivist approach to ethnicity is building a bridge between the primordialists and instrumentalists. For constructivists ethnicity is neither fixed nor completely "open"

(e.g. changeable), therefore ethnicity is partly inherited and also constructed and chosen (Østby, 2011:28-30). The constructivist approach to explaining ethnic identity seems to fit well with the colonial heritage in several African countries, where many tribal differences was partly invented by the colonial powers. The Belgian colonial rule in Rwanda serves as a good example of such a constructed ethnic distinction;

> ...the so called "Hamitic myth"of the sharply foreign origins of the Tutsi, a myth that –like most national or ethnic myths—locked Tutsi in identity into a primordial assigned essential difference. During the late colonial period the Belgian colonial regime contributed greatly to forcing the Hutu/Tutsi distinction or categorical pairing into viciously unstable institutional arrangement. The colonial regime did this both by hardening the boundaries around and between the two types, e.g. by insisting on ethnic labeling on identity cards, and by discriminatory policies (Cramer, 2003:407).

Today's literature on political violence is in large part influenced by the latter theoretical approach. In the constructivist view an ethnic group would be defined as:

> ...people who share a distinctive and enduring collective identity based on common descent, shared experiences, and cultural traits. They may define themselves, and be defined by others, in terms of any or all of a bundle of traits: customary behavior and dress, religious beliefs, language, physical appearance("race"), region of residence, traditional occupations, and a history of conquest and repression of culturally different peoples (Gurr, 2000: 4).

The question is then—when is ethnicity an important factor in regard to terrorism? A constructivist answer would be when ethnicity is a major part of a group`s material well-being, access to political power, status or security. In this case horizontal inequality serves as the basis for the causal explanation of how inequality may lead groups to use terrorism, as structural inequality may be a mobilizing factor for terrorism. The next section will elaborate on how and why some ethnic groups use terrorism to address grievances. I postulate that structural inequality makes terrorism more likely, and that these inequalities are being transformed into grievances through group comparison. In the end these grievances trigger terrorism. Stewart (2002) also emphasizes the fact that horizontal inequalities can result in small-scale protest to terrorism and civil war. To my knowledge no one has studied terrorism explicitly using the horizontal inequality framework, but it has been investigated in relation to civil war/other forms of political

violence. I believe that the same mechanisms are present when we want to explain terrorism as well. In Section 3.3 the HI argument will be connected directly to terrorism through grievance-mobilization model proposed by Crenshaw (1981), Ross (1993) and Piazza (2011).

3.3 Linking HIs to ethno-nationalist terrorism

> Minority economic discrimination—which usually involves some combination of employment discrimination, unequal access to government health, educational or social services, formal or informal housing segregation and lack of economic opportunities available to the rest of society—it is a catalyst for the development of minority group grievances, which are directed against the state, economic status quo, mainstream society, and the majority population (Piazza, 2011: 341).

Based on this assumption it becomes clear that a combination of grievance and identity is a strong mobilizing agent for ethno-nationalist terrorism. What is evident from the theory is that structural inequalities in no way alone lead to collective violence. But when will such structural factors be important to explain terrorism? Crenshaw (1981), Ross (1993) and Piazza (2011; 2012) seek to explain the root causes of terrorism through models that emphasize the structural factors (in this case relative deprivation) which in turn produce grievances between groups. Crenshaw (1981) expresses this quite clearly;

> The first condition that can be considered a direct cause of terrorism is the existence of concrete grievances among an identifiable subgroup of a larger population, such as an ethnic minority discriminated against by the majority (Crenshaw, 1981:383).

Crenshaw (1981) proposes a model where collective grievances are a motivational factor for terrorism. Crenshaw divides the causes of terrorism into two main factors as to why some groups and individuals turn to terrorism: the difference between preconditions and precipitant causes. Preconditions are factors that set the stage for terrorism in the long run. The preconditions can further be divided into permissive factors, which are enabling factors such as the country`s level of modernization and political system (Crenshaw, 1981).The precipitant causes are specific events that forgo a terrorist attack. Although Crenshaw sees grievances to be a prominent factor of terrorism, it is the structural factors such as level of modernization that enable terrorists

to mobilize. Therefore it is not the grievances in itself, but the change in society which make them salient (Crenshaw, 1981:381).

Ross (1993) further establishes the link between grievances and mobilization for terrorism. He relies on both Crenshaw (1981) and Gurr's (1970) relative deprivation argument when he introduces his theoretical model. The argument is based on the notion that there exist three prominent causes of terrorism: Psychological, rational choice and structural. The psychological causes explain why individuals join terrorist organizations. The rational choice model sees the participant's cost-benefit calculations as important. The structural factors are the environment, and the political, cultural, social and economic structure of societies. In his quest to find a causal link, he relies on the structural factors (Ross, 1993:317). He also uses Crenshaw`s distinction between *permissive* and *precipitant* causes of terrorism. The permissive factors are geographical location, level of modernization and political system. The precipitant causes are divided into seven categories[26]. He emphasizes that grievances have to be regarded as the most salient of the structural, precipitant cause of terrorism. Of all the precipitant causes the grievance category is also the most complex, and the grievances which lead to terrorism can be divided into seven categories, these are: ethnic, racial, legal, economic, political, religious and social (Ross, 1993:325). Ross concludes that the patterns of terrorism are complex, and that all structural factors interact.

More directly connected to the proposed link between HIs and terrorism, Piazza (2011; 2012) uses the grievance model in connection to discrimination, and focuses on the structural discrimination of minority groups as a salient in the mobilization for terrorism. This is because discrimination reinforces exclusion and the sense of otherness among the different groups in society. Piazza uses the abovementioned causal framework (Crenshaw, 1981; Ross, 1993) but rather than using the "general" notion of relative deprivation, he builds on Gurr (1993) and thus has a clear ethnic group focus. When the grievances are deep and the sense of group identity is strong, it is potentially important as a mobilizing factor for terrorism. When the grievance factors can be organized by political leaders they can be the basis for strong mobilization for collective action, in this case terrorism.

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[26] The precipitant causes are: "social, cultural, and historical facilitation, organizational split and development, presence of other forms of unrest, support, counterterrorist failure, availability of weapons and explosives and grievances "(Ross, 1993:381).

Figure 1 shows a highly simplified version of my causal-chain. The structural asymmetries (HIs) are affecting the level of collective grievance in the group. The collective felt grievances then enhance both the level of identity (while the identity aspect also affect collective grievance), and promote group mobilization. As the model show, both economic and political horizontal inequalities and the identity affect group mobilization[27].

Figure 1: Causal model of the relationship between HIs and terrorism
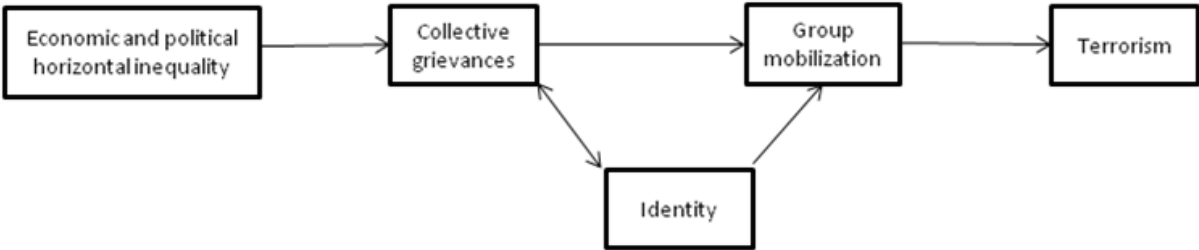
3.4 Arriving at testable hypotheses of HIs and terrorism

In this section I will introduce my hypotheses in regard to the causal mechanisms introduced in this chapter. The abovementioned discussion and theoretical framework clearly point out that structural factors such as political opportunity and economic factors are important when explaining why groups mobilize and use terrorism. The general assumption throughout this thesis is that horizontal inequality produce strong grievances and that these grievances are specifically strong when they follow ethnic (cultural) cleavages. The hypotheses proposed will be derived from my general research question:

Countries with groups facing strong horizontal inequalities have higher rates and probability of experiencing terrorism than more egalitarian countries.

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[27] What is also evident from the theory on political violence is that economic and political inequality also affects the opportunity of the groups to use terrorism. In a rational-actor perspective HIs might also be a condition for opportunity. For example rich groups may have more resources to mobilize (see Tilly, 1978 for the resource-mobilization school and Ellingsen, 2000 for a summary of the debate).

The theory proposed has a specific group focus, and thus the appropriate level of analysis is at the group-level. The hypotheses will be postulated at both the country-level and at the group-level of analysis. The disaggregated group-level approach gives opportunities to show the causal mechanisms that make ethnic groups use terrorism, which follows directly from the theoretical discussion. But a disaggregated approach clearly has its restrictions as the group-level approach by design exclude countries and cases where ethnicity has no relevance. Therefore I will include hypotheses at the national-level as well. This is mainly because of the constraints with using the disaggregated approach, and also to see if my argument holds for all types of domestic terrorism. Lastly, it gives me opportunities to compare my results to previous research.

Due to data constraints, and the scope of this thesis I am only testing factors connected to economic and political horizontal inequality, which I believe to be two strong factors. These factors are also found to be significant and positive predictors of civil war (Østby, 2008a; 2008b; 2011; Cederman et al., 2011; Buhaug et al., 2013). It is also due to the fact that it is hard to gather good and reliable data on horizontal inequality.

3.4.1 Country-level hypotheses

Following what is found in previous studies of HIs and based on what was proposed earlier, a group`s relative position in regards to political rights are important when explaining terrorism (e.g. Crenshaw, 1981; Ross, 1993; Piazza, 2011; 2012). Therefore I expect to find that countries with an excluded ethnic group will experience higher rates and probability of domestic terrorism than countries which do not have any politically excluded ethnic groups. This gives the first hypothesis:

> H_1: *The rates and probability of terrorism increases in countries with at least one politically excluded ethnic group.*

Stewart (2008) also emphasizes that horizontal inequalities can stem from political inequalities between groups in a society. The discrepancy between the excluded group, and the group(s) in power, makes the group identity aspect more salient, and thus produces strong group grievances. As H_1 does not capture the differences between groups, but rather if a country possesses one (or more) excluded ethnic group(s), I

therefore want to test the relationship between the largest excluded group in society vis-à-vis the group(s) in power. This gives me my second hypothesis:

H₂: The rates and probability of terrorism increases in countries with severe political horizontal inequalities.

Economic grievances

To more specifically tap into the economic horizontal inequality aspect, the next hypothesis more specifically introduces inter-group economic inequality aspect at the country-level. The levels of domestic terrorism will be higher in countries where there are large economic inequalities, and some groups are more economically disadvantaged than the majority of the population:

H₃a: The rates and probability of terrorism increases in countries with large income gap between the economic average and the poorest group.

Further based on the previous discussion, it is also likely to be a connection between groups being richer than the county average. This might (as Horowitz, 1985 and Dewkis et al., 2012 proposes) stem from the unwillingness to distribute their resources to more disadvantaged regions of the country. To exemplify this point we can look at the Catalans or the Basques in Spain. This generates my next hypothesis:

H₃b: The rates and probability of terrorism increases in countries with large income gap between the average and the richest group.

Stewart (2008) proposes that where all four inequality factors coincide with the ethnic cleavages in society, this will lead to higher risk of conflict. My last hypothesis test this by proposing that countries with both economic and political HIs have higher probability and rates of terrorism.

H₄: The rates and probability of terrorism increases in countries with both political and economic horizontal inequalities.

3.4.2 Group-level hypotheses

Basically the group-level hypotheses are based on the same theoretical foundation, but are postulated with a specific group focus. Ethnic groups which in some way experience exclusion from the majority will have a stronger mobilizing agent than included groups. On the basis of what is found by Cederman et al. (2011), where exclusion from central power was found to have a strong positive effect on ethno-nationalist civil war, I propose that the same causal relationship is present in regard to terrorism, and this yields my fifth hypothesis;

> H_5: *Politically excluded ethnic groups are more likely to use terrorism, than included groups*

Economic grievances

Rather than focusing on individual economic inequality, as previous scholars has done (e.g. Krueger & Malekova, 2003; Krueger, 2007, Berrebi, 2008), I focus on inter-group differences. The sixth hypothesis proposes that groups experiencing high economic inequality will be more likely to use terrorism:

> H_6: *Ethnic groups far from the income average have higher probability of using terrorism than groups at the income average.*

When looking closely at economic horizontal inequality it seems unlikely that the relationship should be the same for rich and poor groups. It is reason to believe that the interaction between economic inequality and terrorism at the group-level are twofold (Horowitz, 1985; Cederman et al., 2011). Both advantaged and disadvantaged groups are likely to use political violence. There are many examples of terrorist groups that are from an advantaged group such as the (Punjab) Sikhs in India. In regards to this phenomenon, I want to test whether or not there is a difference between poor and rich groups respectively:

> H_7a: *Poor ethnic groups are more likely to engage in terrorism than the groups at the income average.*

> H_7b: *Rich ethnic groups have higher probability of using terrorism than those at the income average.*

As was the case for the country level, I propose that the effect of HIs is stronger when they operate together, therefore:

H$_8$: Ethnic groups experiencing both political and economic HIs have higher probability of using terrorism.

4. Research design and data

> In sum, we believe that, where possible, social science research should be both general and specific: it should tell us something about classes of events as well as about specific events at particular places. We want to be timeless and time bound at the same time (King et al., 1994:43).

In the study of social phenomena the most widely used distinction is between using quantitative and qualitative methods. One the one hand, the qualitative method is apt to explaining in depth one phenomenon or a set of cases, such as one specific country and features in specific cases. One of the limitations with the qualitative literature is that the findings cannot be generalized to a larger set of cases or areas, and this research is often accused of being biased (easy to select cases that match the research question). What qualitative investigation can bring to the table is rather an understanding of a causal relationship, and these understandings can be the baseline for further research (King et al., 1994). Therefore qualitative methods are especially important in that they provide the information necessary to build strong theoretical linkages, which in turn can be tested on a larger scale.

On the other hand, quantitative methods gives us the possibility of generalizing what is found to a larger sample, and thus makes it possible to say something of a larger pattern of interaction to explain specific phenomena (King et al., 1994). Since my research question is of a general character, and I want to investigate broadly how horizontal inequalities are affecting the likelihood of terrorism it is reasonable to use a quantitative method.

4.1 Why disaggregate?

As we have seen in Chapter 2 the majority quantitative studies of terrorism is conducted at the country-level, using highly aggregated variables to describe sub-national differences. But what do these proxies really tell us about the grievances of specific terrorist organizations?

Measuring differences among countries at the national level give us general information on the different structural factors which can be "roots of terrorism", but these studies may not help us understand the complexity of terrorist phenomenon. The theories often

used to explain terrorism (e.g. Crenshaw, 1981 and Ross, 1993) focus on the sub-national level and have an explicit group focus. The unfortunate consequence when studying terrorism at the inappropriate level is that the importance of sub-national factors is overlooked. If we are going to understand the influence of horizontal inequality it is essential to go beyond the national level of analysis—and develop research designs which are able to account for variations in economic development, education and ethnic composition at the local/sub-national level of analysis (Buhaug, 2005:17). A disaggregated group-level approach gives opportunities to say something about the mechanisms that make ethnic groups use terrorism. This follows directly from the theoretical discussion in Chapter 3 which postulates that inter-group inequalities and group mobilization are potentially very important for terrorism, and that structural asymmetries (HIs) produce strong group grievances.

But how do we measure HIs? The most important step is to determine which identity factors and boundaries are important in each country (Manchini et al., 2008), and then focus on measuring inequalities for these groups. My new dataset include information based on the Global Terrorism Database (GTD) and the Ethnic Power Relations Dataset (EPR-ETH). Using information from these datasets it was possible for me to identify terrorist groups which matched the ethnic identity markers in the EPR-ETH dataset; this provides the opportunity to further investigate ethno-nationalist terrorism. In the next sections I will introduce the two datasets, and then give a description of the coding and work I have done to make the new group-based terrorism data.

4.1.1 Ethnic Power Relations Dataset (EPR-ETH)

Chapter 3 introduced the notion that we have a variety of identity markers for terrorist groups (class, political-ideological standpoint, religion or ethnic group). Ethnic identity is regarded as one of the most important in relation to conflict and political violence. This is because the ethnic identity is based on fundamental factors such as history, religion or language (Gurr, 1993; Ellingsen, 2000; Østby, 2011). Because ethnic identities are the most "salient" of the identity markers, I am relying on identifying inequalities between groups on the basis of ethnic identity. The EPR dataset provides the most comprehensive list of ethnic groups, and not at least the possibility of controlling for factors through time and space. This is because this dataset also provide

the opportunity to use geo-referenced variables. It also includes information on ethnic groups' political relevance and influence over the state.

The EPR-ETH[28] dataset serves as the basis of my new disaggregated approach, and provides information on *all* politically relevant ethnic groups and their access to power from 1946-2009 (Cederman et al., 2010; Vogt, 2011). The EPR-ETH is an extension of the original EPR dataset, the differences is mostly connected to the inclusion criteria and an updated timeframe[29]. To be included in the EPR-ETH the countries have to be sovereign and have a population of over 500, 000 (Vogt, 2011). The EPR-ETH provides information on over 790 groups around the world[30]. The EPR-ETH defines ethnicity as:

> ...any subjectively experienced sense of commonality based on a belief in common ancestry and shared culture. Different markers may be used to indicate such shared ancestry and culture: common language, similar phonotypical features, adherence to the same faith (Cederman et al., 2010:2).

The EPRs definition of ethnicity thus includes ethno-religious, ethno-linguistic and racially distinct groups. An ethnic group is politically relevant if at least one political actor claims to represent the group as a whole at the national level, and also if the group is in some way discriminated in the politics of the state (Cederman et al., 2010). The coding of political access is based on a given country's power constellations and the level of control the executive power have over different parts of the political system such as the presidency, army and senior posts in the administration (Cederman et al., 2010). Following this the EPR categorizes all ethnic groups according to three factors:

(1) Whether those who claimed to represent a group's interest held full control of the executive branch with no meaningful participation by members of any other group (2)

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[28] The EPR-ETH is available at the country- and group-level from: www.icr.ethz.ch/data/growup/epr-eth.
[29] The original EPR dataset covers the period 1946-2005 (see Vogt, 2011 for more information).

[30]This distinguishes the dataset from MAR (mentioned in section 2.3.1), which includes only minorities that are at risk or groups that already have mobilized, the dataset does not include small groups or groups in power (Gurr, 2000:8). The EPR does not cover all countries or groups in the world, and small states where there are no politically relevant ethnic groups are not included. Although there are limitations to the EPR dataset as well, I rely on the notion that this dataset, and variables provided are better apt to explain political violence and that this dataset is the best available on ethnic groups to date. The critique of the MAR dataset has led a working group at the University of Maryland to provide an overview of the problems, and to the creation of a new MAR dataset. They point out that: "The EPR is a substantial improvement on MAR, and our study suggests that the concerns over selection bias in the original MAR were well funded"(Binir et al., 2012: 4).

whether they divided power with members of other groups in a power-sharing regime, or (3) whether they were excluded altogether from decision-making authority within the halls of the central state power (Cederman et al., 2010:99-100).

Active discrimination can either be formal or informal. Formal discrimination occurs when the state legally forbids certain groups with specific languages or religions from being part of the political positions. This was the case for the African Americans until the civil rights movement. Informal discrimination intentionally and actively restrains individuals from specific groups from "rising within the ranks of government" (Cederman et al., 2010:4).

4.1.2   Global Terrorism Database (GTD)

Information on terrorist events and perpetrators are gathered from the *Global Terrorism Database* (GTD) which is an open source database provided by the National Consortium of the Study of Terrorism and Responses (START)[31]. The GTD dataset provides information on both domestic and international terrorism for the period 1970-2010 (START, 2013b). To my knowledge this is the most comprehensive of the datasets available on terrorism to date. The data material provided in the GTD is gathered using news sources, journals, books, existing terrorism datasets and legal documents. One special feature of the GTD dataset is that it has been gathered in two phases (GTD1: 1970-1997 and GTD2:1998-2007).   After 2008 the coding was done in real time. Another aspect which may be troubling is regarding the data from 1993[32] as a large part of the 1993 data are missing from the dataset. The number of cases for 1993 (that are available) only represents about 15% of the actual attacks, and therefore the data for 1993 is excluded from the synthesized GTD dataset[33] (START, 2013a).

I am using a synthesized account of both GTD1 and GTD2 provided by START, which is totalling 104.000 incidents. The dataset has information on location, date, weapons used, the target, number of victims and information on perpetrator in the cases where it is possible to identify a group (START, 2013b). Before synthesizing the two datasets the GTD1 had to meet all the inclusion criteria from GTD2, and therefore the incidents which

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[31] The GTD dataset can be downloaded from: http://www.start.umd.edu/gtd/contact/
[32] When moving the data from PGIS to START the data from GTD1 for 1993 fell out of the car on the way to START (Enders et al., 2011:322).
[33] Data from 1993 is also available at Start.edu.com

did not meet the criteria were dropped from the dataset. (The GTD1 only included 44 descriptive variables to each event, while the GTD2 included 84 variables. In those cases where it was possible the coders developed the same information for the GTD1 as the GTD2) (START, 2013b).

The GTD operates with a wide definition of terrorism:

> ...the threatened or actual use of illegal force by a non-state actor to attain political, economic, religious, or social goal through fear, coercion or intimidation (GTD, 2011:6).

If an event is to be coded as a terrorist attack in the GTD three of the following attributes has to be met (START, 2011:5):

The incident must be intentional- the result of a conscious calculation on the part of a perpetrator.

The incident must entail some level of violence or threat of violence- including property violence, as well as against people.

The perpetrators of the incidents must be sub-national actors- this database does not include acts of state violence.

After these three attributes are examined, the GTD also includes three criteria variables, so that the researches can choose the definition which matches the research question. Therefore at least *two* of the following three criteria must be met to be included in the GTD (2011:5):

Criterion 1: The act must be aimed at attaining a political, economic, religious or social goal.

Criterion 2: There must be evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) than the immediate victims.

Criterion 3: The action must be outside the context of legitimate warfare activities.

The GTD further provides the opportunity to remove cases which do not follow the criteria that the researcher wants to include. Not only does the GTD include these criteria, but GTD2 also includes a variable labeled "Doubt Terrorism Proper" which records if the event may not be a "proper" terrorist attack, and basically implies that the

attack may not be a terrorist action, the attack may be part of a guerrilla action, intra- or inter-group conflict or some other form of crime. This means that the analyst using the GTD has the choice to assess if the attack is proper or not (START, 2011).

4.1.3   Joining GTD with EPR-ETH

In this section I will present the new data I have coded, as well as give examples of some of the challenges I met throughout working with the coding. Following this in Section 4.1.4 I will be discussing the possible limitations with this approach.

I have combined data from the GTD-dataset on terrorist groups, with an ethnic, ethno-nationalist/separatist claim (hence Chapter 2.1.1) with ethnic groups from the EPR-ETH dataset. The dataset provides new opportunities to attain knowledge about the underling mechanisms of this type of terrorism. To my knowledge this is the first attempt of joining the EPR and GTD, and thus creates a new disaggregated dataset on ethno-nationalist terrorism. The new dataset covers the time period from 1970-2009, for 155 countries.

Before starting with the coding of the groups I had to do some changes to the original GTD dataset. Following Enders et al. (2011) I removed cases which did not fit the inclusion criteria (see 1-3 in section 4.3.3) as well as attacks which were defined as "Doubt Terrorism Proper" in the GTD dataset. One of the major problems when using perpetrator information on terrorism is the large amount of events with unknown perpetrators. The extensive number of unknown may be because multiple groups claim responsibility, bad media coverage or the fact that the groups want to stay anonymous.

In the full GTD dataset information on perpetrator is available for about 40-50% of the events, and the information of the perpetrators may not contain that much information. Therefore I removed all attacks which had perpetrator information that was described as either "Unknown", "Individual" or "Gunmen". Removing uncertain events and events without any information of perpetrator leaves 41.399 observations in the dataset, which is substantially lower than the number which is provided when not including these restrictions (the original GTD dataset included 98.112 observations). The next step then was to identify groups from GTD and match these groups to ethnic groups found in the

EPR-ETH dataset. Each group in the GTD dataset was given a unique group-id; this id made it possible to go back and see which groups that were coded in my dataset.

In many aspects the coding proved challenging as the GTD does not always have consistent names for the groups they have recorded. Further examples of challenges were that many terrorist organizations operate with aliases or cover names, terrorism in context of civil war, spillover-effects and not being able to pinpoint a clear ethnic identity. The rest of the section will give some examples of the challenges I have met in relation to the coding of groups.

First, to identify the ethnicity and motives of the groups I have relied on a large amount of sources, specifically START's own "Terrorist Organization Profiles" site has provided a lot of the information used to classify the groups[34]. Further, the information on terrorist organizations in Asia has in large part been gathered from the South Asia Terrorism Portal (SATP)[35]. Based on the information on the different terrorist organizations it was possible for me to link a group from the GTD with an ethnic group in the EPR-ETH.

When working on the coding of the groups, one challenge was the difficulty in ascribing a group with one specific ethnic identity. For some groups the ethnic identity was clear while in other cases the identity (and goals) of the groups were not as straight forward. Masters (2008:402)[36] describes the difficulty of labeling terrorist groups well in his article:

> If we accept the notion that the universe of active terrorist groups includes groups with pure ideological goals *and* groups with combined or mixed ideological goals (that is to say cross over groups), then the terrorist universe is indeed more complicated than we may have previously admitted to.

Giving a terrorist group a specific ethnic objective may be problematic as the reasons for the use of terrorism might vary widely. For example, Taliban in Afghanistan is coded as the Pashtun ethnic group, because the majority of the group consists of members from the group and their ideology is based on a Pashto understanding of religion[37]. Although

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[34] See start.umd.edu/start/data_collections/tops/ for information on terrorist organizations.
[35] See http://www.satp.org/ for information on terrorist organizations in Asia. Other sites used in the process are e.g : cfr.org, ntctc.gov, cidcm.umd.edu/mar, ucdp.uu.se
[36] See Masters (2008) appendix for a list of terrorist groups and ideological categories.
[37] The majority of the Taliban is from the Pashtun ethnic group, and Taliban is Pashto for "students". See: http://www.nctc.gov/site/groups/taliban.html.

their goal may not be directly described as ethno-nationalist, it is basically my understanding that the group may be ascribed both an ethno-nationalist and religious fundamentalist distinction, and that they can be described as a mixed ideology terrorist group (Masters, 2008).

In many cases through the process of coding terrorist groups and events, the complexity of the terrorist phenomenon has become evident. What is often the case for the terrorist groups is the complexity of motivating factors. The groups are in addition often using terrorist tactics in a larger setting of civil war. One example of a group which has used a wide range of tactics and "covers" are the National Union for the Total Independence of Angola (UNITA). Angola has been haunted by violent conflicts in the past four decades, making the country's post-colonial history one of the worst in African history. The insurgency group UNITA started to use guerilla tactics, especially after the independence of Angola in 1975. Throughout the civil war the group at times masqueraded as a political party, while most of all working as a guerilla group. The group conducted numerous attacks on the civilian population in the years between 1975 and 2002. Through the 1990s the group stepped up its terror tactics and used torture, executions, forced displacement and mine laying (Malequias, 2007). I have recorded a peak in 1990 where the group was behind 192 terrorist attacks in Angola. Even though the terrorist actions are part of a larger picture of civil war/conflict, this proves that it in some cases is just one of the insurgent tactics (as mentioned in Chapter 2). The UNITA group is representing/have a majority in the Ovimbundu ethnic group, and the group is coded as discriminated in the EPR-ETH dataset[38].

India is one of the countries in the dataset which is plagued by terrorism and conflict. The country is represented with 19 politically relevant ethnic groups in EPR-ETH, and has over the years experienced a lot of ethno-nationalist terrorism. The regions bordering Pakistan are plagued by terrorism, where different Kashmiri groups operate, such as Jamiat-ul-Mahammad and Hizbul Muhajideen. These groups are conducting numerous attacks in India, based on Kashmir separatism. The groups also often use different aliases, and thus a large amount of groups are conducting terrorism using different names but with largely the same goals. Although the groups are mainly

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[38] In my data, looking at onset ratio of civil war (from UCDP) 29 group-years have at least one terrorist attack by ethnic group, and experience civil war at the same time.

dominant in the Jammu and Kashmir regions of India, the support for these groups are also present among other Muslim minorities in India (Satana, 2013). The Jammu and Kashmiri Islamic Front have conducted terrorist attacks in the name of the Kashmir Muslim minority. The group used the exclusion from power (and thus Kashmiri rights) as a strong mobilizing agent among the Kashmiri minority group in the late 1980s (Santana et al., 2013:34).

Some of the terrorist organizations and ethnic groups have roots in different countries, and thus operates across borders. One example of an ethnic group which is represented with terrorism in many countries is the Kurds. The group operates under different names and through different organizations in several countries, mainly in the Middle East, but also carries out transnational attacks (in e.g. Germany). The Kurdish ethnic group has been involved in terrorism in countries like Iran, Iraq, Syria and Turkey, and is thus coded in my dataset. Almost all terrorist events in Turkey have been perpetrated by the Kurdish Workers Party (PKK). The PKK's main goal is to establish an independent Kurdish state in the south-eastern part of Turkey through a communist revolution. In the EPR-ETH the Kurds are coded as being discriminated, which basically means that the group is both excluded from power in Turkey[39], and also the subject of discriminatory policies. The PKK (and other groups with mainly the same goals) is also operating in countries like Syria, Iran and Iraq[40]. The exclusion/ discrimination of the Kurds may vary from country and over time.

Latin America is one of the regions with high numbers of domestic terrorist events in the GTD dataset, but the groups represented in the region cannot be described as ethnic per se. Many groups do include some ethnic attributes, while the most important identity/mobilizing factor is not ethnicity but rather leftist/communist ideology. The Revolutionary Armed Forces of Colombia (FARC) is a good example of a group that have used terrorist tactics for an extensive time period (since the 1960s until today), but the group has a clear Marxist/communist ideology, and is therefore not included in the

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[39] This may be varying over time, but also from country to country.
[40] After the Gulf War in 1991 a Kurdish state was established in the Northern Iraq, which basically has given a "safe haven" to groups like the PKK (Derin-Güre, 2011:397). Other groups operating under the pretext of Kurdish separatism is e.g. Kurdish Democratic Party, Patriotic Union of Kurdistan and Unified Kurdish Socialist Party.

dataset[41]. The same leftist identity markers can be ascribed to an extensive number of groups in Latin America throughout the period.

4.1.4 The finished dataset and possible limitations

The finished dataset includes a count-measure of 890 group-years with one or more terrorist event(s) in the period 1970-2009, varying from 0-207 events in a group-year. Starting from the GTD with a recorded number of about 41.399 observations, my finished dataset includes about 14.859 observations. The distribution of this new data seems to propose a shift from Latin-America to Asia[42]. As mentioned earlier this is because the high levels of terrorism in Latin-America are connected to more ideological groups. Still, I suppose that this shift and the reduction of observations, should only tell us that the different identities and motivations are all equally important.

As the previous sections have shown, the coding of ethno-nationalist terrorism has proved to be a bit challenging. Even though the work may have some possible errors, where some groups might have been miss-classified, there should not be any systematic "imbalances". There is no reason to expect that the results are skewed or biased because of this. Looking beyond the challenges my data is the first truly global attempt to investigate and locate terrorist groups and connect this to geographically defined ethnic groups, which also makes it possible to connect it to political and economic status at the group-level.

Figure 2 shows the sum of events for all group-years in the period, notice that 1992 has the highest number of terrorist events reaching about 1000[43]. I have also coded a variable which only include the attacks where one or more person(s) was killed. The number of lethal terrorist attacks is 572 group-years. See Appendix A for a list over terrorist groups from GTD and the respective ethnic groups in EPR-ETH.

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[41] It is not like groups cannot have both a Marxist/leftist ideology and at the same time being ethno-nationalist, but for most groups in Latin America this is not the case.

[42] The domestic count of terrorism by Enders et al. (2011) reports the highest counts in Latin-America, directly followed by Western Europe. In my dataset Asia is directly followed by Western Europe.

[43] Because of the inconsistency and problems connected to the 1993 data, I have opted to remove the data from the analysis and description of the variables.

Figure 2: Count-measure of ethno-nationalist terrorist events 1970-2009
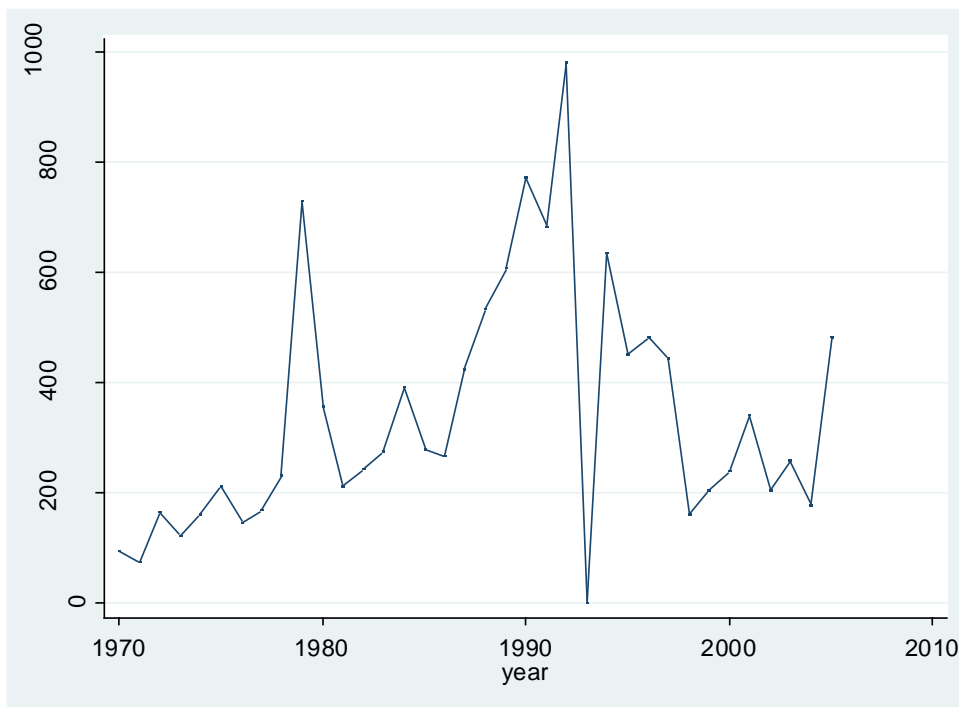
4.2 Data and variables

The following section will introduce the operationalization of the dependent, independent and control variables used in the empirical analysis. To test the hypotheses proposed in Chapter 3, I am using independent variables from two different datasets. At the group-level I am using variables derived from Cedeman et al. (2011) and for the country-level approach I am using variables derived from Buhaug et al. (2013). The two datasets cover the time period from 1946 to 2005, even though my disaggregated dataset includes data from 1970-2009, the analysis will include 36 years from 1970-2005.

4.2.1 Dependent variable

The empirical analysis uses four different operationalizations of the dependent variable, two at the country-level and two at the group-level. The country-level hypotheses are tested using a count of domestic terrorist incidents from 1970-2005. The variable is aggregated from the Enders et al. (2011) dataset which has divided the GTD dataset into accounts for domestic and transnational terrorism[44]. The variable ranges from 0 to 524

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[44] For a detailed step-by-step description of the process see Enders et al. (2011).

domestic terrorism events for the years 1970-2005. Figure 3 shows the distribution of the sum of events from 1970-2005. As for the group-level data, we see that the event-count peaks in 1992, with about 3000 events in a country-year.

Figure 3: Country-level distribution of domestic terrorist attacks 1970-2005
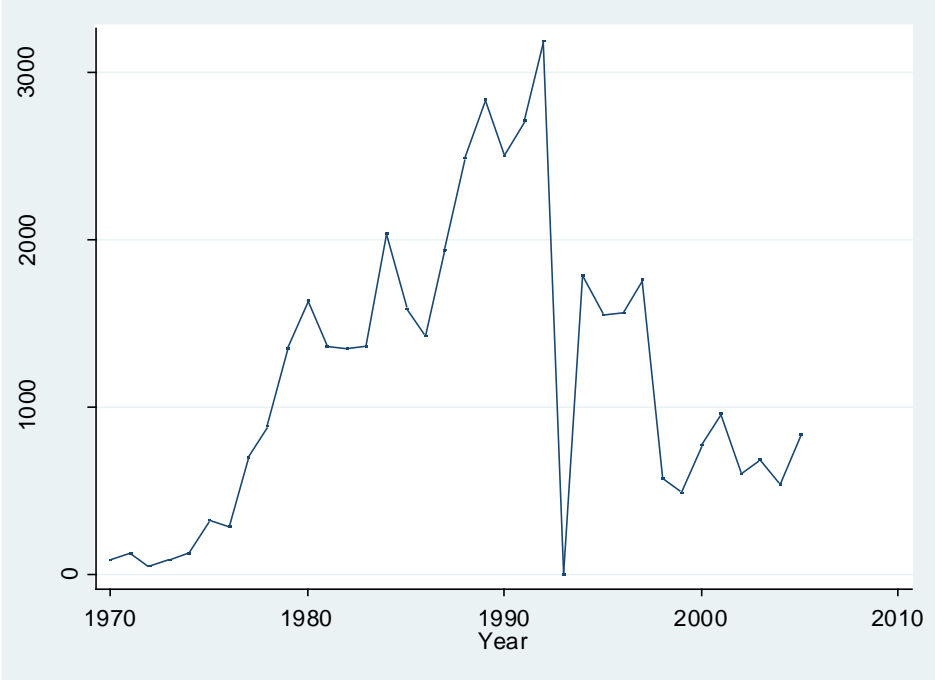
The second variable used to test the hypotheses at the country-level is a dummy for terrorist events called GTD-dummy. Contrary to the more common count-variable, this variable tells us whether a country experienced a terrorist attack in a given country-year, and thus may be capturing a different aspect of the terrorism phenomenon, namely, risk of terrorism. The variable is coded one for country-years with at least one terrorist attack and zero if no terrorist event is recorded.

The dependent variable in all group-level models will be a dummy variable generated from the count-measure in my disaggregated dataset (Section 4.4.3)[45]. The variable is called GTD_dx and is coded in a group-year format that reflects the ethnic groups in the EPR-ETH and if this group in some way has been connected to a terrorist event in a

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[45] As the count measure in the dataset does not provide many groups with levels of terrorism over 1, the count measure may not be appropriate, and thus a zinb model at the group-level is not appropriate. Cameron and Trievedi (2009:675) describes the phenomenon as "underdispersion, where the counted outcome is largely 0 or 1, with a very small number of 2 or more".

given year[46]. The group-level terrorism measure has a timeframe stretching from 1970-2005, and records 740 group-years with at least one terrorist event connected to an ethnic group. The dummy takes on the value one if the group has been connected to a terrorist event, and zero if not, no terrorist attack in a given year was also given a zero value. At the group-level I have also included a variable which measures if a given attack was fatal or not[47]. If an attack in a group-year was fatal (one or more dead) it is coded as one and zero if not. The variable has 540 observations of ethnic-group years with terrorism. Figure 4 shows the distribution for the two dummy variables separately (rather than the count-measure in figure 2).

Figure 4: Group-level distribution of dummies 1970-2005
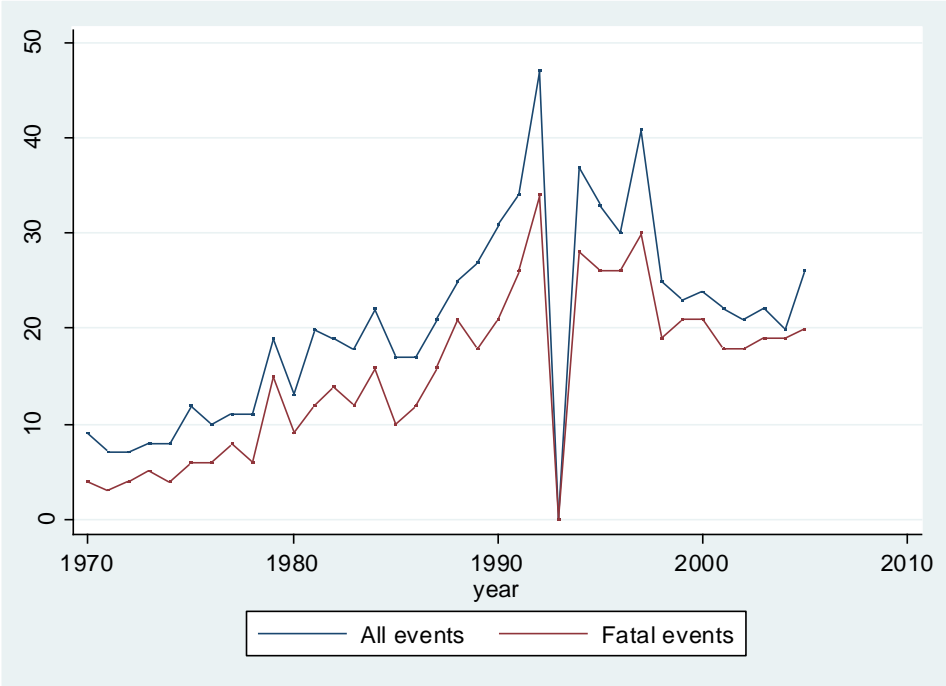
4.2.2 Independent variables

Here I will present the main independent variables used in the statistical analysis.

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[46] It is worth noticing that the variable only tells if a terrorist event in any way can be ascribed to an ethnic group, and whether "extreme" elements from this ethnic group has used terrorism in a given group-year.
[47] Masters (2008) finds in his analysis of terrorist trends 1970-2005 that terrorism overall is becoming more violent and that ethno-nationalist forms of terrorism is the most prevalent both in number of attacks and in the death tolls. Masters uses the INTERATE dataset.

Political HIs

To test the first political inequality hypothesis (H_1) at the country-level I am using a dummy variable capturing excluded groups in each country. The excluded group variable from the EPR dataset is a continuous variable ranging from 0-55 groups, which measure whether an ethnic group is excluded from executive power. To test the country-level hypothesis I construct a dummy variable where if a country possesses at least one excluded ethnic group in a country-year is coded as one, and all which do not have an excluded group are coded as zero.

The second political inequality hypothesis at the country-level (H_2), the variable used to measure inter-group grievances is derived from Buhaug et al. (2013) dataset, this variable combine information from the geo-referenced EPR dataset (GeoEPR)[48]. The variable is called largest excluded group (LEG), and combines the demographic size of the LEG, relative to the joint size of the excluded group and the group(s) in power (Buhaug et al., 2013:20). The variable is bounded within the interval 0 and 1, and in regards to the exclusion variable tested in H_1 this variable taps differences between the size of the groups, rather than if a country possesses an excluded group or not.

At the group-level the political horizontal inequality hypothesis (H_5) will be tested by using the excluded group variable from the EPR dataset. This is a dummy variable that describes if the group is excluded from central power in a given year and takes on the value one for years where the group is excluded from power and zero if not.

At the group-level I also include a variable which captures a groups' demographic power balance in regard to the group(s) in power[49], as a share of the dyadic population. The variable is called power-balance and gathered from Cederman et al. (2011) dataset. I expect the variable to have a negative impact on terrorism, because more powerful groups may not need to use terrorism to get concessions, whereas small and weak groups may have more to gain by using this type of violence.

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[48] The GeoEPR dataset combines geo-referenced data with the groups from the EPR dataset, and this makes it possible to understand group structures on a sub-national level. Wucherpfenning et al., (2011) provide ethnic group polygons in GIS shape-file format (Wucherpfenning et al., 2011).

[49] "Formally denoting the group and the ethnic groups in power (EGIPs) as s and S, respectively, the power balance is defined as s/(s+S) if the group is excluded, and as s/S otherwise. Small groups thus have close to zero share of the population, where those groups that are larger than the EGIP have a power balance greater than 0.5 "(Cederman et al., 2011:466).

Economic HIs

The economic inequality hypothesis at the country-level (H_{3a} and H_{3b}) is tested using a variable that measure economic horizontal inequality at the country-level, I`m using the variables negative horizontal inequality (NHI) and positive horizontal inequality (PHI) from Buhaug et al. (2013)**.** This measure takes into account differences between an ethnic group`s relative economic status against other groups in the society. Buhaug et al. (2013) have calculated group-level data on wealth for all ethnic groups in all countries by joining the G-Econ gridded data[50] with the GeoEPR, then identifying the richest and the poorest ethnic group in each country, and combining this with country-level economic indicators. The variables therefore capture the relative gap between the mean national level and the income level of the poorest and richest group respectively (Buhaug et al., 2013: 18-19). The two variables are computed as negative horizontal inequality and positive horizontal inequality, and the operationalization is as follows[51]:

Negative horizontal inequality (NHI) = country-level GDP per capita/ mean per capita income for poorest group in country.

Positive horizontal inequality (PHI) **=** mean per-capita income for richest group/ country-level GDP per-capita.

The group-level inequality measures are also calculated by using data from the G-Econ dataset.

> Dividing the total sum of the economic production in the settlement area by the group's population size enables us to derive group-specific measures of per capita income production, which can be compared to either the nationwide per capita product or the per capita product of privileged groups (Cederman et al., 2011: 485).

One example of the coding is in Yugoslavia where "the Slovenes get a high score, because their settlement region is located in the rich parts of Yugoslavia" (Cederman et al.,

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[50] The G-Econ dataset is generated by Nordhaus et.al (2006), information and codebook can be found at: http://gecon.yale.edu/.

[51] Because the G-Econ is a static measure (data from 1990) it may be problematic to use the variables in years before 1990, but there is still little reason to believe that inequality of the groups have changed drastically over the years. What is more probable is that groups do not change economic status dramatically, rich groups probably becoming richer, while poor groups do not move op the distribution ladder (see Buhaug et al., 2013 for further elaboration on the issue).

2011). The group-level (symmetric) inequality hypothesis (H_6) is tested using the variable Inequality. The symmetric logged variable defines inequality as the "square logarithmized ratio between g- the GDP per capita of the ethnic group, and G-the average GDP per capita of all groups in the country" (Cederman et al., 2011:486).

The variable shows the deviation from the mean for both rich and poor groups present in the country. The variable defines a group's deviation in economic status from the country average for both rich and poor groups present in the country, and is coded one for groups at the average (both rich and poor). The mathematical operationalization looks like this;

Inequality= $[\log(g/G)]^2$.

The asymmetric economic inequality hypotheses (H_{7a} and H_{7b}) are tested by using the poor_group and rich_group asymmetric no logged measure from Cederman et al. (2011). The asymmetric measurement captures the relative difference of the richest and poorest group from the country average respectively. The operationalization of the variables "guarantees that deviations from the country mean are always positive numbers greater than one" (Cederman et al., 2011:486). The mathematical term for the two variables respectively;

poor_group= G/g if g<G,

rich_group=G/g if g>G,

Where G is the country GDP per capita and g is the GDP of the group. For example, a group that is twice as wealthy as the average has poor_group=1 and rich_group=2, and a group that is three times as poor as the average has poor_group=3 and rich_group=1 (Cederman et al., 2011:486)[52].

4.2.3 Control variables

Although the models are primarily designed to assess the relationship between political and economic horizontal inequality and terrorism, it is important to include other structural factors that might be connected to terrorist activity and/or reduce the

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[52]"Despite considerable wealth discrepancies between peripheral and central areas, the Nordhaus data exhibit very limited variation, because of underlying data quality issues"(Cederman et al., 2011). For a thorough step by step explanation of how the variables are produced see Cederman et al. (2011:485-486).

likelihood of spurious effects. In addition to the main independent variables introduced above the analysis will include variables commonly used in the empirical research on terrorism.

GDP per capita

The first control variable included in the analysis is a logged GDP per capita variable which captures the economic activity in a given country per year. Note that this variable does not account for any distributional factors or inequality, just the capital flows in the country (Penn World Tables 6.3)[53]. The GDP level is often used as a proxy for economic development (and thus poverty) in analyses of economic factors and terrorism. As the discussion of economic factors and terrorism revealed (in Section 2.2) there is not any agreement on whether or not higher levels of GDP per capita will deter or induce terrorism. Based on the discussion I expect that the GDP per capita is positively connected to terrorism.

Democracy

Democracy is a common indicator of terrorism. The literature has not come to any conclusions about the connection between terrorism and democracy, whether or not democracy is enabling or reducing terrorism is an ongoing debate between scholars of the terrorism-democracy nexus (see Section 2.2). Based on this discussion two dummy variables are generated from the Polity IV project, which ranges from -10 (autocracy) to 10 (full democracy). The variables used in the analysis show whether the country is a democracy (Polity2>6) or anocracy (-6≤ Polity2 ≤ 6). Both variables should be positively connected to democracy, as democracy gives opportunities for terrorist group formation and function (e.g. civil liberties). The anocracy dummy is also proposed to be positively connected to terrorism, as semi-democracies (or transitional regimes) are supposed to be the most unstable, this type of system provides fertile ground for grievances and mobilization for terror (e.g. Eyerman, 1998; Li, 2005).

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[53] https://pwt.sas.upenn.edu/php_site/pwt_index.php.

Population size and geographical area

One of the most robust findings in the literature is that terrorism is more likely in populous countries (e.g. Krieger & Meierriecks, 2011; Freytag el al., 2011; Eyerman, 1998). Eyerman (1998) argue that geographical area and population size is an important factor when describing terrorism. Larger countries (geographically) will experience more terrorism, as the government is less apt to control all parts of the country. This gives ample opportunities for terrorist groups to mobilize and plan attacks. Smaller states should be able to constrain terrorism because they are able to "monitor" the population (Eyerman, 1998; Piazza, 2011). Therefore, a logged geographical area and population size variable, both from Penn World Tables 6.3, are included in the country-level analysis.

The group-level analysis will include a measure of group size rather than controlling for the whole population. The variable is included to control for the effects of groupsize on the probability of terrorism by ethnic group. Groupsize is an important factor for political violence (e.g. resource mobilization theory in civil war literature/political violence see e.g. Cederman et al. (2011), therefore I postulate that the size of a group not necessarily is an important factor when it comes to terrorism, as the groups may not have to be large to mobilize. I believe that the larger groups not necessarily have a higher probability for engaging in terrorist actions.

A variable measuring the number of excluded groups in a country is also included in the group-level analysis. This is a continuous variable ranging from 1- 55. I expect that this variable will have a negative relationship with terrorism; this is because a state which faces a large amount of excluded groups may be less willing to agree to concessions to some groups because of a fear of a "domino-effect". The firmness from the state might deter other groups from terrorism (in relation to ethno-nationalist civil war see Cederman et al., 2011 and Walter, 2006).

Since I am operating with time-series data all independent variables are lagged one year to control for time dependence.

Controls for statistical dependence

One of the assumptions for regression models is that the observations are independent of each other. Since the data I am using have a *cross-sectional time-series* format, the units (group and country-years) are likely to be dependent on each other. A violation of the assumption of independence in the data may lead to biased and overly significant results (Beck et al., 1998). As my dependent variables are binary I have a binary time series cross sectional data format (BTSCS)[54]. It is highly likely that one terrorist event is connected to the levels of terrorism in the preceding year. To control for this dependency Beck el al., (1998) propose a method using a temporal lag and natural cubic splines (time splines). The natural cubic splines capture the decreasing risk of a terrorist event as a function of time. The temporal lag variable controls for time since last terrorist event at the country-level and time since last terrorist attack by ethnic group at the group level. In addition, three cubic splines are included in all analyses.

4.3   Statistical method

Because the dependent variables in the analysis have different operationalizations I am applying two different models**.** In the following section I am introducing the two different models used. First, to analyze the binary dependent variables both at country and group-level an ordinary logistic regression will be used. Second, to analyze the continuous (count) variable at the country-level I am applying a zero-inflated negative binominal regression model[55]. The two different operationalizations help me answer two different questions, namely severity or frequency (zinb) and risk or probability (logit) of terrorism.

4.3.1 Logistic regression

As the main part of my analysis looks at the factors which make ethnic groups use terrorism at both national and group level, the main part of my statistical analysis will include logistic regression models (herafter logit).   The dependent variable in the analysis is dichotomous terrorist event (1) and non event (0). Therefore I am applying a

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[54] The BTSCS model, using a binary dependent variable in time-series data; P ($y_{i,t}$=1) = f($x_{i,t}$,$y_{i,1}$,...,$y_{i,t-1}$,...,$x_{i,t-1}$), i= 1,...,N,t=1,...,T (Beck et al., 1998).

[55] All models are run with STATA 12.

logistic regression model[56]. The logit model gives us the probability of the dependent variable being 1 (Hamilton 1992:220), ergo that a group has been connected to a terrorist event in a given year for the group level, and if a country has experience terrorism in one country year for the national level[57].

At the group-level I am applying a logit model (not using the count-variable discussed in Section 4.3.4), this is because the distribution of the events at the group-level does not necessarily propose that we use a count-model. This is because there is quite few group-year with groups represented with count of terrorism higher than 1, ergo we have "underdispersion" of counts. Therefore it does not seem reasonable to use the count measure at the group level.

4.3.2 Zero-inflated negative binominal regression

The method used to analyze the dependent count variable at the country-level is a zero-inflated negative binominal regression (zinb), which is a mixed-methods model (Cameron & Trievedi, 2005; 2009). Because the distribution of the dependent (count) variable is not normal (see figure 5), the assumptions for the OLS regression model are not followed (approximately normal distribution).

Figure 5 shows that the distribution is far from normal, and that the distribution pattern follows a non normal Poisson distribution[58]. Also, the terrorist events variable is highly overdispersed[59], which means that there is an extensive number of zero observations in

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[56] As the terrorism data is rare events a Rare Events Logistic Regression (relogit) model could have been applied to control for the excessive number of zero counts in the data. The Relogit model was first proposed by King & Zeng (2001) and thus controls for the fact that ordinary logit models may give biased estimates if applied to data on rare events. King & Zeng (2001) propose the use of the Relogit model in cases where the number of observations are lower than 200, since my dependent variables all have values higher than this, I have opted to use the regular logit model. Estimation of Relogit models gives me the same results as when using the Logit model.

[57] $\log (P_{it}/(1-P_{it})= \alpha+\beta X_{it}+e_{it.}$ Where α is the intercept (Y), βX is the explanatory variables used with their coefficients, e is the random error terms for country i at time t. The logit equation is specified as: $L_i=\beta_0+\beta_1 X_{i1}+\beta_2 X_{i2}+...+\beta_{k-1} X_{ik-1}$

[58] Poisson distribution: "the natural stochastic model for counts is a Poisson point process for the occurrence of the event, with density, or more formally probability mass function, $\Pr[Y=y] = e^{-\mu}\mu^y/y!$, y=0,1,2,...., where μ is the intensity or rate parameter" (Cameron & Trievedi, 2005:668).

[59] "...overdispesion, and in some cases underdispersion, may arise because the process generating the first event may differ from that determining later events. Overdispersion in count data may also be due to failure of the assumption of independence of events, which is implicit in the Poisson process (Cameron & Trievedi, 2009: 674).

the data, which may lead to biased coefficients and interpretations if not controlled for (Cameron & Trievedi, 2005). To account for both the Poisson (non-normal) distribution and the excessive number of zero counts, I am applying the zinb model. Cameron and Trivedi (2005:681) proposes this method because;"(…) this lets the zero counts occur in two ways; as a realization of the binary process and as a realization of the count process when the binary variable takes value 1". Thus we get one model which shows the probability of a country experiencing terrorist events in a given year, and a second (inflated) model which only shows the certain zeroes. The count model is the equivalent of the negative binominal regression model (nbreg), while the inflate model accounts for the excessive zeros which may not be captured in the nbreg model (Hilbe, 2011). Drakos and Gofas (2006a) also propose the model, to control for bias in the dependent variable when looking at event-count of terrorism[60].

Figure 5: Country-level distribution of events
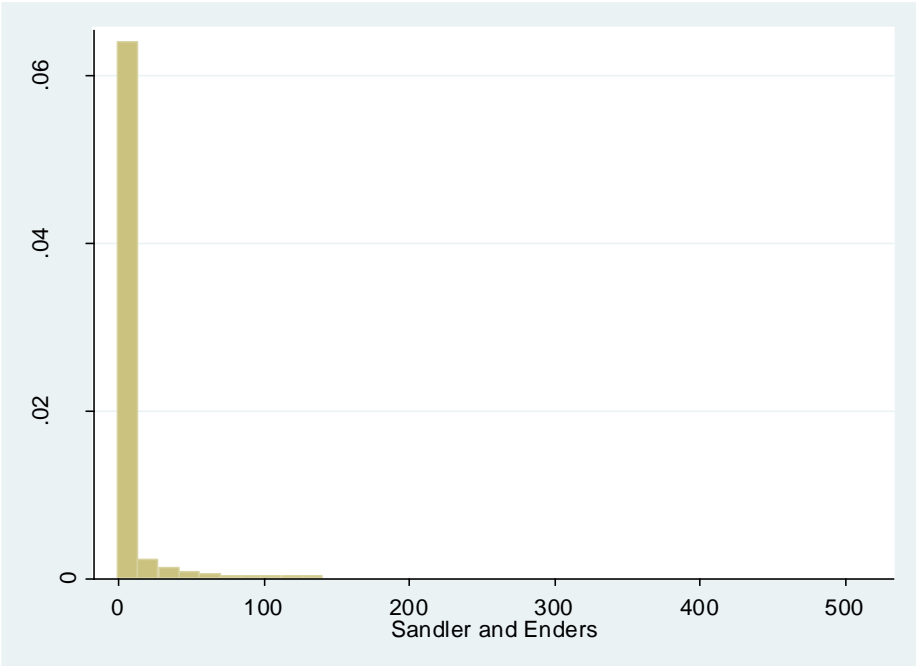
4.4   Data summary

Table 1 includes descriptive statistics for all independent and dependent variables used in the analysis.

Table 1: Descriptive statistics

	Observations	Mean	Std.Dev	Minimum	Maximum
Country-level variables					
Terrorism event count	5520	7.721	33.41	0	524
Terrorism dummy	5353	.3429	.4747	0	1
Excluded	4738	.6768	.4677	0	1
Largest excluded group	6027	.1188	.2120	0	.98
Positive horizontal inequality	6027	1.184	.7552	1	9.634
Negative horizontal inequality	6027	1.200	.5092	1	6.045
Anocracy	4822	.2005	.4004	0	1
Democracy	4822	.3836	.4863	0	1
Population	5474	1.926	1.744	-2.813	7.174
Area	5628	11.92	2.168	5.703	16.64
GDP per capita	4876	1.339	1.147	-2.085	4.173
Time since last terror attack	5520	4.508	6.371	0	35
_spline1	5520	-1157	4172	-42875	0
_spline2	5520	-250.2	607.9	-4488	0
_spline3	5520	-564.2	1573	-12348	0
Group-level variables					
Terrorism by ethnic group	18711	.0393	.1945	0	1
Fatal terrorism by ethnic group	18711	.0292	.1684	0	1
Excluded	19105	.5898	.4918	0	1
Power balance	19280	.2765	.3458	.000	1
Inequality	17349	1.032	.2488	1	5.131
Poor ethnic group	17349	1.226	.5366	1	6.045
Rich ethnic group	17349	1.097	.4725	1	9.634
Anocracy	18864	.2170	.4122	0	1
Democracy	18864	.2949	.4560	0	1
Number of excluded groups	19280	10.46	16.71	0	55
GDP per capita		8.035	1.091	4.808	11.12
Groupsize	19138	.1859	.2638	.0001	1
Time since last terror attack by ethnic group	19259	10.19	9.838	0	35
_spline1	19292	-813.5	1156	-4488	0
_spline2	19292	-2010	3115	-1234	0
_spline3	19292	-2180	3842	-1621	0

5.   Empirical Analysis

This chapter is divided into two parts, first introducing the country-level analysis and explaining the differences seen in the models (logit and zinb). The country-level analysis is included in this thesis because the share of most newly published articles on terrorism uses the cross-country approach in their analysis (as mentioned earlier Chapter 4) this gives me the opportunity to compare the results to previous research. The two level approach also give opportunity to say something about the universality of the results, and whether previous research have been able to explain group-level factors. The second part introduces the new disaggregated approach, and models with group-year as unit of analysis. This operationalization makes it possible to investigate the causal relationship between horizontal inequality and ethno-nationalist terrorism.

All models are run with robust standard errors clustered on country, to control for country-level dependence, and all independent variables are lagged one period for time-dependence, reducing the possibility for reverse causality. So that for example the previous year's level of GDP per capita predicts the current probability of terrorism. Further tests and analyses can be found in the Appendix B.

5.1   Testing HIs at the country-level

The first model at the country-level is the zero-inflated negative binominal model with the count measure of terrorism[61]. As mentioned in Chapter 4, Table 2 show both a negative binominal model (referred to here as the count-model (non-certain zero), and an inflated model (certain zero). The count- model thus shows the increase in number of events with an increase in the explanatory variable. The certain-zero models can be interpreted as the probability of *not* experiencing terrorism, ergo accounting for the overdispersion. A negative result thus means that there is a *positive* likelihood of experiencing at least one terrorist attack in a given year[62]. The number of observations

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[61] The Voung test suggests that the fit of the Zinb model is significantly better to explain the levels of terrorism than the more conventional negative binominal model (nbreg). The zinb is also preferred over the zero-inflated poisson model.

[62] There is some debate on whether or not to include all variables in the inflated model and how to best operationalize it. Following in line with previous studies, I have opted to keep the model with all variables included (as also done by Piazza, 2011; Findley, Piazza & Young; 2012). I have tested the models with only those variables connected to experiencing a zero count (in this case democracy) proposed by among others Li (2005) and Drakos & Gofas (2006a; 2006b). Further I have run some initial model-fit estimation which is presented in the Appendix B.

ranges from 4515 to 4647 for 147 countries pending on model specifications. This is due to list-wise deletion when one (or several) of the x variables have missing values.

Table 2 includes four models where H_1 to H_4 are tested. Model 1 tests the first hypothesis (H_1) that postulates that countries with an excluded ethnic group will have higher levels of domestic terrorism. The inclusion of the dummy for countries exhibiting at least one excluded ethnic group does not yield significant results in the count model. The variable is not significant at the conventional level, but the positive direction is as expected. When looking at the inflated model we see that the variable is negative and significant (-0.995). This therefore tells us that the excluded variable is more apt to explain the probability of experiencing at least one attack in a country, rather that higher rates of terrorism. Piazza (2011; 2012) uses a dummy for the relationship between minority group facing discrimination and domestic terrorism, he finds a positive and significant relationship (p<0.001). My results do indicate the same relationship, but the results are far from as significant. This may again be prescribed to Piazzas use of MAR variables, which may show overly significant results (as discussed in Chapter 2). Looking briefly at the controls only anocracy, democracy and population is significant throughout the models. The controls basically behave as expected, although area has a negative sign, which I proposed would be positive.

To test the second hypothesis (H_2) Model 2 introduces the political HI variable, the largest discriminated group from Buhaug et al. (2013). This variable is a proxy for the difference between the largest excluded group and the groups in power. The variable captures the logic of the HI argument, proposing that inequality in political status between groups will increase the probability for conflict and political violence. As opposed to the excluded group variable the largest discriminated group variable is significant at the 0.1 level. This suggests that although having at least one politically relevant ethnic group- by itself does not increase the levels of terrorism (Model 1), higher inequality between the political opportunities of the ethnic groups increase the levels of terrorism. It is therefore higher frequency of terrorism in countries where there is a relative discrepancy in power access between the largest excluded ethnic group and the group(s) in power. This is an interesting and novel observation as previous research on terrorism has not been able to capture the inter-group difference that this variable proposes.

Up to this point only the political aspect of the HI argument have been tested, Model 3 introduces the variables testing economic HIs. Model3 tests both H_{3a} and H_{3b}, and thus captures the asymmetrical relationship between economic inequality and terrorism. The variables measuring economic HIs positive economic inequality and negative economic inequality are included in the analysis[63], and captures the effect of the discrepancy between rich and poor groups from the average (GDP per cap) separately. Contrary to what was expected we see that the positive economic inequality variable is highly significant ($p<0.005$) and negative, and this proposes that countries with one ethnic group being richer than the country average reduce the levels of terrorism. From the literature on terrorism I expected that both positive and negative economic HIs would have a positive impact on terrorism (e.g. in relation to the Sikhs in Punjab), although the negative effect may be due to the fact that we run the analysis on a wide range of countries, and that the effect is not as expected because we have so many cases where this has no effect[64]. Horowitz (1985) also states this by amplifying that in most cases it is the poorest groups that in most cases turn to violence.

Model 4 includes both measures of economic and political HIs in the model, shows that both the largest excluded group variable and the positive economic inequality are significant, while the negative economic inequality measure is still not significant at the conventional levels. Including an interaction between the two did not yield any significant results. This proposes that the H_4 is not confirmed at the country-level, and that the variables have an effect on levels of terrorism but that they operate independent from each other.

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[63] The effects of the economic inequality measures should be interpreted with some care, as there might be some differences when the most unequal societies (Russia, Thailand and Argentina) are dropped from the analysis. The results for the "final" models for both country and group-level can be found in Appendix B. The results are largely the same when the countries are dropped from the analysis.
[64] Running the model without Saudi Arabia which is an outlier (in regard to the PHI variable), the PHI variable lose its significance.

Table 2: Zinb-models country-level

	Model 1	Model 2	Model 3	Model 4
Count Model (non-certain zero)				
Excluded	0.629			
	(0.708)			
Largest excluded group		1.981*		1.997*
		(1.169)		(1.117)
Positive economic inequality			-0.434***	-0.445***
			(0.102)	(0.105)
Negative economic inequality			0.144	0.192
			(0.280)	(0.231)
Anocracy	0.920**	0.601	0.870**	0.614*
	(0.375)	(0.378)	(0.356)	(0.352)
Democracy	0.986*	0.565	0.884*	0.569
	(0.566)	(0.498)	(0.533)	(0.452)
Population	0.386*	0.583***	0.413**	0.575***
	(0.204)	(0.216)	(0.184)	(0.176)
Area	-0.134	-0.231	-0.0500	-0.225
	(0.165)	(0.196)	(0.187)	(0.203)
GDP per capita	0.159	0.310	0.207	0.308
	(0.236)	(0.228)	(0.239)	(0.213)
Constant	1.618	2.471	1.239	2.660
	(1.869)	(2.147)	(2.035)	(2.150)
Inflated Logit (certain zero)				
Excluded	-0.995*			
	(0.518)			
Largest excluded group		-0.547		-0.220
		(0.880)		(0.974)
Positive economic inequality			-0.434***	-1.221
			(0.102)	(0.814)
Negative economic inequality			0.144	-3.746***
			(0.280)	(1.240)
Anocracy	-1.379***	-1.949***	0.870**	-2.051***
	(0.459)	(0.621)	(0.356)	(0.600)
Democracy	-0.962**	-1.289***	0.884*	-1.273***
	(0.455)	(0.481)	(0.533)	(0.414)
Population	-0.928***	-0.900***	0.413**	-0.854***
	(0.264)	(0.271)	(0.184)	(0.208)
Area	0.249	0.153	-0.050	0.290*
	(0.168)	(0.188)	(0.187)	(0.153)
GDP per capita	-0.238	-0.224	0.207	-0.213
	(0.219)	(0.254)	(0.239)	(0.240)
Constant	-0.263	0.410	1.239	4.021**
	(1.799)	(2.077)	(2.035)	(2.045)
Observations	4,515	4,647	4,647	4,647
Nonzero Observations	1693	1715	1715	1715
Zero Observations	2822	2932	2932	2932

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.1.1 Logit models at the country-level

In this section I introduce the logit models at the country level. Conversely to the former zinb models which predict higher rates of terrorism in a country-year, the logit models show the probability of experiencing terrorism in a given country-year. All logit models include time since last terror event and three cubic spines, as a control for time dependence in the data (as discussed in Chapter 4)[65].

An overall look at the logit models shows us that the results are generally more significant. This may be because the logit models show risk for experiencing terrorism, rather than higher severity or rates of terrorism. Ergo it is possible that the variables are more apt to explain risk of terrorism, rather than higher rates.

Model 5 tests the H_1 at the country levels (with the same variables as in Model 1).The model shows us that running the same variables, but only looking at the probability of experiencing a terrorist attack, is positively and significantly higher in countries with at least one excluded ethnic group. This thus verifies the hypothesis which suggests that countries with an ethnic group will have higher likelihood of experiencing terrorism. All control variables are significant and show the same direction as in the zinb model. Generally it seems to be the case that the HI argument is stronger if we want to predict terrorism in a country, rather than if we want to look at why some countries have higher frequency terrorism.

Model 6 tests H_2, and thus shows that the results from the logit model give higher probability for terrorism when controlling for the largest excluded group in country, ergo a higher degree of political marginalization.

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[65] These controls for statistical dependence are not included in the zinb model, because the model in itself is supposed to control for time dependence (Cameron & Trievedi, 2009).

Table 3: Logit models country-level

	Model 5	Model 6	Model 7	Model 8
Excluded	0.518***			
	(0.132)			
Largest excluded group		0.822***		0.854***
		(0.230)		(0.230)
Positive economic inequality			-0.0554	-0.076**
			(0.041)	(0.038)
Negative economic inequality			0.159	0.177*
			(0.104)	(0.099)
Anocracy	0.673***	0.743***	0.728***	0.740***
	(0.132)	(0.137)	(0.136)	(0.136)
Democracy	0.533***	0.597***	0.538***	0.597***
	(0.115)	(0.129)	(0.129)	(0.133)
Population	0.363***	0.440***	0.403***	0.422***
	(0.057)	(0.057)	(0.059)	(0.057)
Area	-0.104**	-0.119***	-0.112**	-0.126***
	(0.044)	(0.043)	(0.045)	(0.044)
GDP per capita	0.130**	0.175***	0.132**	0.171***
	(0.051)	(0.054)	(0.055)	(0.054)
GTD time since last attack	-1.001***	-0.919***	-0.928***	-0.918***
	(0.064)	(0.061)	(0.060)	(0.0613)
_spline1	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
_spline2	-0.038***	-0.034***	-0.034***	-0.034***
	(0.004)	(0.003)	(0.003)	(0.003)
_spline3	0.011***	0.009***	0.010***	0.009***
	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.0600	0.0708	0.166	0.0750
	(0.501)	(0.483)	(0.495)	(0.485)
Observations	4515	4647	4647	4647

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

As in Model 3, Model 7 also includes the two economic variables separately, and captures the effect of the two without controlling for political exclusion. In Model 7 I have only included variables measuring economic HIs, the variables do show the expected direction, but is far from conventional levels of significance. Conversely to the zinb model, where the positive economic inequality variable was significant, the variable is not significant when testing it on the probability of experiencing terror. As we see none of the economic inequality variables reach statistical significance, further

proposing that the effect of economic factors are not as strong as the political exclusion effect on terrorism (when looking at probability and levels).

Model 8 includes both the political HI variable and the two asymmetric economic inequality measures. The model shows that when the economic HI variables are controlled for in the same model as political HIs, the effect is significant; richest group being significant at 0.005 and having a highly economically marginalized groups are more prone to terrorism (P<0.01) [66]. As we have seen throughout the models there are some uncertainty connected to the PHI and NHI variables. Although the PHI variable seems to be highly significant, the effect is much lower than for the NHI if we look at the coefficients and standard error. The other control variables are unaffected by the difference in models. Because of the marginal and non-significant effects of the economic inequalities variables alone (in models without the political inequality measure) this begs me to question if the effects of the economic HIs are in some way dependent on the political HI variable (as proposed by Stewart, 2008). Therefore I am including an interaction to see if this is the case (see Appendix B). The model with interaction between the economic inequality measure and exclusion did not yield any significant results. Thus it seems that the effects of the two are *not* dependent on each other, and that the economic and political effects operate separately. H_7 is therefore rejected in the logit model.

5.1.2 Summary for country-level analysis

Generally the country-level models/approach give some support for my general hypothesis, postulating that horizontal inequality between ethnic groups have potentially great importance when explaining domestic terrorism.

The effects of the different proxies for HIs on events (zinb) do not seem to be as strong as for the results found in the logit models. The structural factors (HIs) operate as a precondition for terrorism (Crenshaw, 1981; Ross, 1993) and in this case it seems that these are better apt to explain risk of terrorism, rather than higher frequency. The question then becomes if a couple of terrorist attacks are really that important if we

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[66] Saudia Arabia has the group which is furthest from the average economically. The Ja'afai Shia group has a PHI level of 9.63. The Ja'afari group is also excluded from power in Saudi Arabia. The country has experienced about 9 domestic terrorist events in the period 1970-2005. Removing Saudi Arabia from the analysis changes the significance of the PHI variable (See Appendix B).

want to say something about the root causes of terrorism? One possible answer here is that looking at probability is perhaps more intuitive, especially if we want to target specific risk factors across countries.

Conversely to what I expected I did not seem to find a robust effect of negative economic inequality, as I proposed in H_{3a}. I expected that countries with poor ethnic groups would have higher probability of terrorism and that this would be a strong predictor of higher levels of terrorism (as was found by Piazza, 2011; 2012). Although the variable had a positive effect throughout all model specifications, the effect was not significant (only weak effect in Model 8). Why is this so? This seems to be somewhat in "tune" with previous research, where effects of poverty only have a weak positive connection (Blomberg & Hess, 2008; Lai, 2007) or no/an connection dependent on other factors (Piazza, 2006; Krueger & Malekova, 2003; Krueger, 2007; Enders & Hoover, 2012). Therefore these unexpected results may be due to aggregating the effects of poverty on a large scale, and that the effect of poverty is better explained when looking specifically at the group-level.

As discussed Chapter 4 (Section 4.2) aggregating all terrorist types into one variable can potentially mask important differences in effects that only prescribe to some specific types of terrorism, the next section therefore introduces models testing my hypotheses 5 through 8 with my new disaggregated data.

5.2 Testing HIs at the group-level

This section introduces the logit models at the group level, with my new disaggregated data. The disaggregated dependent variable used in the analysis is binary whether or not a group engaged in terrorism in a given group-year. All models include the most important control from the literature and the variables to control for time dependence. The models are run with an option only to include relevant group-years; this is because it is not necessary to run the analysis for years when the ethnic group was not relevant in the country since my data depicts politically relevant ethnic groups.

The group-level models are presented with both "all terrorist attacks by ethnic group" and only including fatal terrorist attacks. The analysis yields about 455 groups or 17 775

group years, with 773 observations of terrorist attacks by ethnic group (=1), and 547 observations of terrorist actions being fatal (=1) for 120 countries around the world.

Table 3 presents the group-level results. The first model (Model 9) tests H_5, whether groups that are excluded from central power are more likely to be engaged in a terrorist attack than included groups. The effects are substantial and highly significant at 0.005, suggesting that excluded groups more often participate in terrorist activity. Notice that there is a possibility of reversed causality in this case, as the marginalization may reflect not only past terrorism, but also past conflict. I have discussed in previous chapters (Section 2.2.2) that there seems to be a positive connection between terrorism and civil war/conflict. Ergo, we might have a case where terrorism by an ethnic group is again making the state impose even harder restrictions on the group. One example of this can be found in Myanmar, where ethnic tensions are strong among the many ethnic groups. In the process of democratization the government in Myanmar has signed peace agreements with all the major insurgent groups, but not with the Kachin Independence Army (KIA). The Kachin ethnic group is fighting for autonomy for the Kachin State and elements from the group have been involved in terrorism in Myanmar (the group is coded as excluded in the EPR dataset). The problem is that repression from the state may lead groups, like the Kachins, to use terrorism (or other types of violence), which again makes the state tighten the leash and repress the group even more. Following this line of argumentation, whether or not the causal relationship is direct, does not mean that the results are less valid in regards to counter-terrorism policies (R.C, 2013).

Figure 6 show the predicted probabilities (calculated from model 14) of terrorism by ethnic group against the excluded dummy. As we see the relationship proposes that the probability of terrorism is much higher for excluded groups than those included. The dotted lines show 95% upper and lower bound confidence intervals. All other variables are held at their mean values.

Figure 6: Predicted probability of terrorism by ethnic group against excluded group dummy
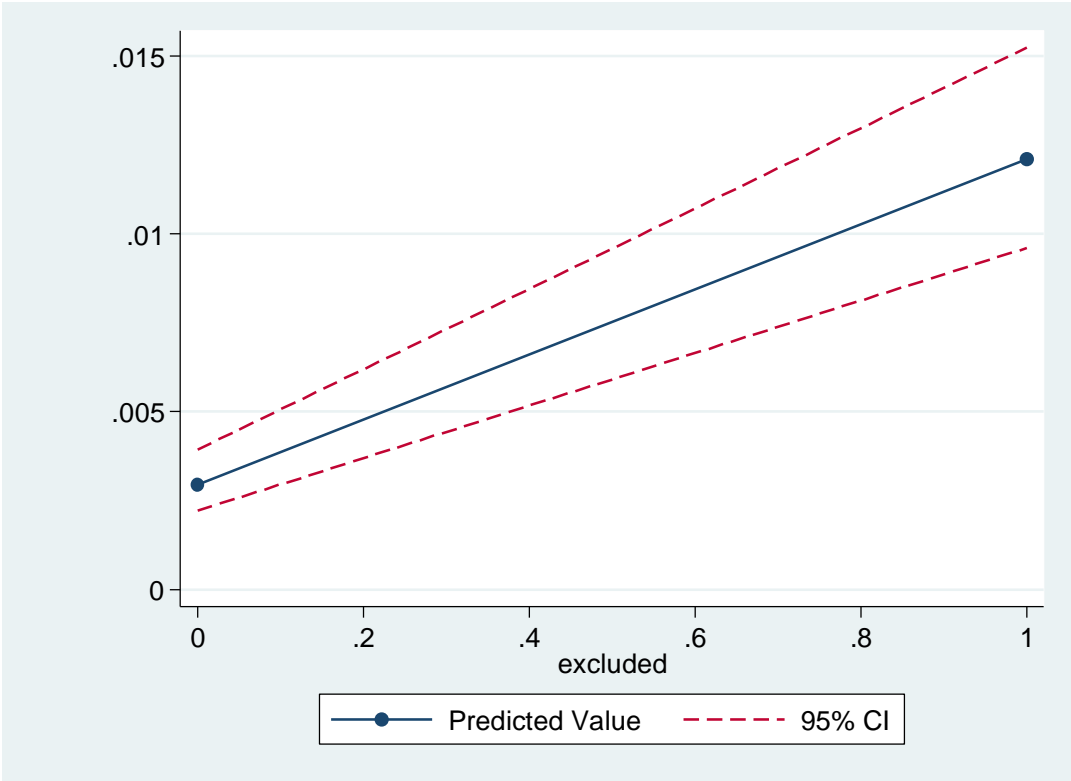
Further, the control variables mostly behave as expected. The power-balance variable is significant at the lowest level (p<0.1), and has a negative effect on the probability of terrorism by ethnic group. This thus reflects that the more powerful groups do not need to use terrorism, but rather use more conventional measures for political influence/participation. I expected this, as the result is also found by Cederman et al. (2011) in relation to ethno-nationalist civil war. The group-size has a positive impact on the probability of terrorism, indicating that larger groups do have higher probability of being connected to a terrorist event. My initial assumption was that group-size was not as big a factor for terrorism in relation to other types of violence, as terrorism is seen as a low intensity form of violence. But my results show that larger groups seem to have a positive and significantly higher probability of engaging in terrorism. One way to look at this is that larger groups have higher capacity to overcome mobilization obstacles, as the group has capacity to recruit members from a large subset of individuals (note that there is a strong positive correlation between power-balance and group-size). What is probable from this is that weak groups (hence the negative effect of the power-balance variable) do not need to be small in size, to mobilize for terrorism. The other control

variables behave as expected, the GDP per capita is positive and the two polity variables show the same relationship as they did at the country-level, namely positive.

The number of excluded groups in the country has a negative impact on terrorism, this does confirm my initial belief that countries where there are many excluded groups the state may be less open for concessions, and that this deter the groups from using terrorism. This might be exemplified by what Moscow has done in regards to the Chechens applying strict and hard-line measures to counter terror and insurgency (Cederman et al., 2011). Figure 7 shows the predicted probabilities of terrorism at varying numbers of excluded groups in the country. The probabilities are calculated from Model 14[67]. All other covariates are held at their mean values. From this graph we see the relationship between number of excluded groups and the probability of terrorism[68].

Figure 7: Predicted probability of terrorism by ethnic group by number of excluded groups

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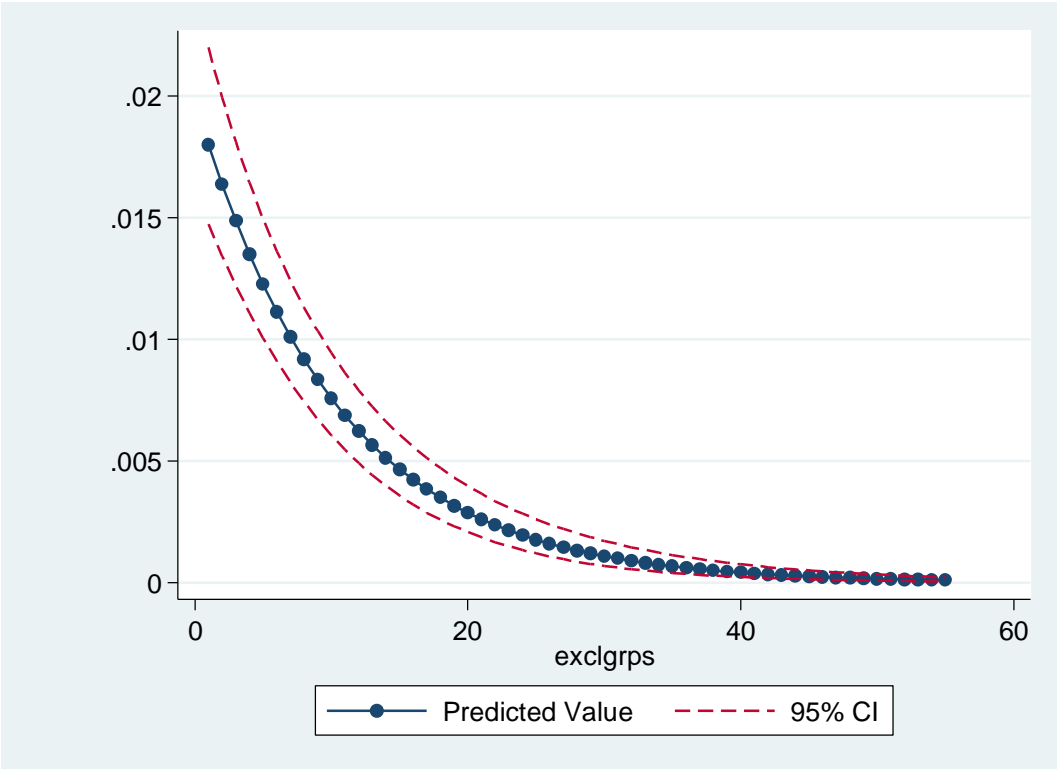
[67] The error bands (confidence intervals) are wide but clearly far from zero in the models, which makes me more confident about my results in both Figure 6 and Figure 7.
[68] All post estimations are calculated with Spost9 (Long & Freese, 2001; 2006).

Table 4: Group-level models

	Model9 all	Model 10 fatal	Model 11 all	Model 12 fatal	Model 13 all	Model 14 fatal
			Group-level variables			
Excluded	1.435***	1.600***	1.511***	1.639***	1.470***	1.575***
	(0.264)	(0.380)	(0.286)	(0.402)	(0.291)	(0.402)
Power balance	-1.168*	-1.097	-1.638**	-1.592*	-1.407*	-1.273
	(0.669)	(0.754)	(0.755)	(0.823)	(0.728)	(0.815)
Group size	1.780**	2.134**	1.679	2.083*	1.507	1.824*
	(0.892)	(0.832)	(1.203)	(1.147)	(1.153)	(1.097)
Inequality			0.493	0.675		
			(0.472)	(0.496)		
Poorest group					0.558**	0.681**
					(0.259)	(0.292)
Richest group					-0.166	-0.298
					(0.206)	(0.490)
			Country-level variables			
Anocracy	0.472**	0.516**	0.425*	0.481*	0.343	0.369
	(0.223)	(0.250)	(0.223)	(0.258)	(0.231)	(0.271)
Democracy	0.833***	1.074***	0.814***	1.052***	0.759***	0.977***
	(0.221)	(0.274)	(0.219)	(0.278)	(0.227)	(0.298)
Number of excluded groups	-0.0720***	-0.065***	-0.083***	-0.077***	-0.098***	-0.097***
	(0.009)	(0.009)	(0.014)	(0.014)	(0.024)	(0.027)
GDP pr. capita	0.0567	-0.062	0.220*	0.0876	0.195	0.049
	(0.095)	(0.124)	(0.119)	(0.139)	(0.122)	(0.137)
			Group-level terror history			
Terror_time	-0.396***	-0.365***	-0.457***	-0.425***	-0.476***	-0.448***
	(0.093)	(0.116)	(0.089)	(0.108)	(0.088)	(0.109)
_spline1	0.014*	0.018	0.009	0.012	0.007	0.010
	(0.008)	(0.011)	(0.007)	(0.011)	(0.007)	(0.010)
_spline2	-0.011***	-0.012**	-0.007**	-0.009*	-0.007**	-0.008*
	(0.003)	(0.005)	(0.003)	(0.005)	(0.003)	(0.005)
_spline3	0.003***	0.003***	0.002***	0.003***	0.002***	0.002***
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)
Constant	-3.311***	-3.052***	-4.831***	-4.638***	-4.499***	-3.986***
	(0.844)	(1.164)	(0.967)	(1.224)	(0.916)	(1.064)
Observations	17,775	17,775	16,181	16,181	16,181	16,181

Robust standard errors in parentheses *** p<0.01, ** p<0.05, *p<0.1

Having considered H_5 on all recoded terrorist attacks by ethnic group, Model 10 introduces the same variables but now only including the fatal attacks. The analysis shows that the effects are largely the same, and that the strong positive effect of exclusion remains. The only difference is that the power-balance variable loses its significance but the effect remains negative. The GDP per capita variable behaves a little different though now being negative, but the variable is far from significant and not strong, which makes me question if we can rely on the negative sign.

Model 11 introduces the symmetric inequality measure and thus tests H_6. The variable is not statistically significant, but proposes that groups with wealth levels far from the average will be more inclined to use terrorism. Introducing the variable to the model does not change the general pattern from the Model 9 and 10, but the group-size variable loses its significance. It is also worth noting that the GDP per capita variable is now significant ($p<0.1$) and positive, suggesting that the overall GDP per capita level is of more importance when explaining terrorist attacks by ethnic group, and that the symmetric inequality variable. GDP per capita in this case, may be able to explain more of the variation than the inequality measure, but the variable is just barely reaching statistical significance. As we have seen throughout all models the GDP per capita is not especially robust to the inclusion of other variables.

Model 12 introduces the same variables but now only with fatal events. From model 11 we see that the inequality measure was not significant, but that the GDP per capita had a relatively small effect on terrorism by ethnic group, this is not the case when looking only at fatal attacks. We see that the results for most part remain the same, although the power-balance variable is now significant (hence the results from model 10). The same goes for the group-size variable, which was not significant in Model 11.

By now I have only considered the symmetric inequality variable, which proposes that the effect of inequality is the same for poor and rich groups respectively. This may be an implausible assumption, so Hypothesis H_{7a} and H_{7b} are tested separately in Model 13 and 14. Both models show that the asymmetric economic inequality variable is behaving as expected. The poor ethnic group variable indicats that a group is below average GDP per capita of the population is significant and positively related to terrorism[69]. This thus

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[69] The correlation between number of ethnic groups and poorest excluded group is around -0.04.

follows in line with what was found at the country-level (Model 8). The reversed causality effect may also be present when we look at the positive and significant effect of a group experiencing economic marginalization. The economic position may have become worse after previous terrorism (or even war) as terrorism often occurs in countries with a long history of political violence. But as Buhaug et al. (2013:9) point out, the elevated risk of (political violence) terrorism due to economic inequality is of interest and importance for policy makers regardless of the underlying reasons for this discrepancy. The variable capturing the richest groups shows a negative but not significant effect on terrorism. Further confirming what was found at the country level; the effects of being better off than the average, do not give higher probability of using terrorism

Figure 8 shows the predicted effect of economically marginalized groups on the levels of terrorism, with all other covariates held at their mean values. The figure shows that the probability of terrorism is highest at 6 on the poor-group scale, which indicates the groups furthest away from the country average (e.g. the poorest ethnic group) have higher probability of using terrorism. The dotted lines show the upper and lower bound 95% confidence intervals. This is supported by evidence from for example Northern-Ireland, where the unequal distribution of resources is found to have a positive effect on mobilization for terrorism (O'Hearn, 1987; Stewart, 2008). This is also confirmed in my data, where the groups (both Catholics and Protestants) in Northern Ireland are substantially poorer than the average in the UK. Both groups are also excluded from power in the dataset.

Figure 8: Predicted probability of terrorism by ethnic group at different levels of the poor group variable.
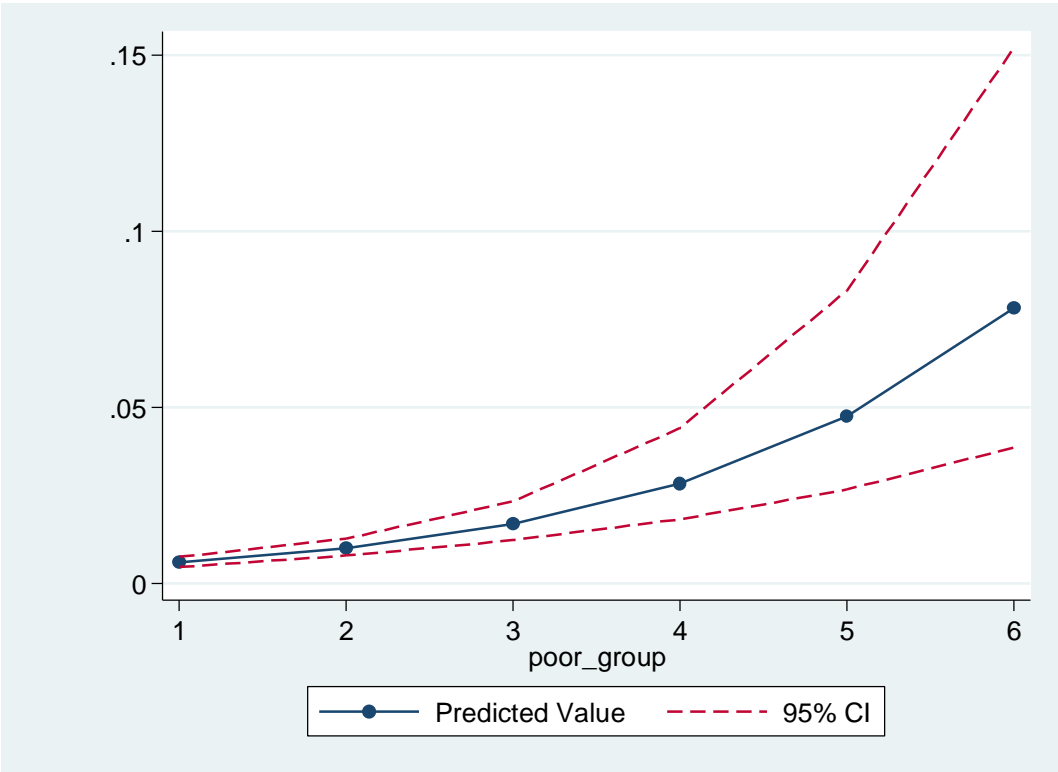
As was found at the country-level the effect of the economic HI variables seems to be stronger when included together with the political exclusion variables. Therefore I have tested the hypothesis proposed by Stewart (2008) that where all four (economic, social, political and cultural) work together the risk of conflict or violence is highest, testing H_8. The interactions between the economic and political inequality measure did not yield any significant results (see Appendix B). Therefore it seems like the effect of exclusion and economic inequality does not depend on the level of the other variable. Therefore I am rejecting the H_8 at group-level as well.

5.2.1 Summary and main findings

Throughout this chapter I have assessed the importance of horizontal inequality, both economic and political on terrorism. Through different operationalizations of the dependent variable and on different levels of analysis, the political exclusion variable

holds strong, while the results for the economic inequality variables are somewhat more uncertain. Table 5.4 shows all hypotheses and whether or not they are supported throughout my analysis. The results from the models show that both on the country-level, when analyzing which country-specific factors that apply for explaining levels and overall probability of terrorism, the political exclusion variable holds. Taking this knowledge further down at the ethnic group-level the findings from the cross-country analysis are confirmed. By testing the hypotheses at the ethnic group-level, something that has not been done before, I have been able to test the causal-mechanism proposed directly on politically relevant ethnic groups, and the results seem to confirm my assumptions.

The strong and robust effects of the political exclusion variable are somewhat surprising because Piazza (2011; 2012) finds in his analysis of both domestic and transnational terrorism that economically marginalized groups are the most important explanatory variable at the country-level. In turn his results propose that the ethnic discrimination factor together with economic marginalization is the strongest predictor for terrorism.

Although my results also indicate that there is a relationship at the country and group-level it is not nearly as strong as the effects he has found in his analyses. This makes me tempted to suggest that the strong results stem from his use of MAR variables, which in itself may be problematic. My results do not dispute that there is an effect of economy, but rather that this effect is substantially lower than for ethno-political exclusion. In Chapter 2 (Section 2.3.1) I have emphasized that the use of MAR may be problematic because of the selection on the dependent variable. Using these variables may give us results that show stronger effects of the independent variables on the dependent. Østby (2011) also emphasizes the questionable quality of the economic inequality variables in MAR, which are basically collected by asking group leaders about their status. This may again yield biased results as some leaders may be tempted to report that their economic situation is weaker than it really is:

> For each type of grievance, the HIGHEST level of grievance expressed by group representatives is reported(...)Values are based on statements and actions by group leaders and members or observations of grievances by third parties (MAR, 2009:14).

As my economic variables are calculated by looking at geographical GDP per capita levels, and then combining this with information on settlement patterns, the variables in itself may be less biased. This may be one of the reasons why my results are weaker than those found by Piazza (2011; 2012) at the country-level.

Poor individuals vs. poor groups

> Despite the claims to the contrary, the Palestinian-Israeli conflict also seems to confirm that poverty reinforces motivations for terrorism. Living standards among Palestinians in Gaza are only a small faction (less than 12 per cent) of that in Israel, as many as 84.6 percent of Palestinians in Gaza and 57.8 percent in the West Bank live below the poverty line (Lia & Skjølberg, 2004:33).

Palestine serves as a good example on ethno-nationalist terrorism, but it is also worth noting that this case is specifically complex. My results indicate that the effect of economic marginalization and terrorism (e.g. being poor) is stronger when tested directly at the group level. Relating this to previous studies of terrorism, it seems that the group-level may be more appropriate when explaining economic inequality. As discussed in Chapter 2; the findings from the individual level negates that there is a deprivation effect of being poor on participation in terrorist organizations (Krueger & Malekova, 2003; Krueger, 2007; 2008; Berrebi, 2007). These results may therefore indicate that personal grievance (e.g. at the individual level) connected to being poor, is not as strong as being part of a poor group (hence Krueger's "Robin-Hood Paradox"). The relationship between economic marginalization at the individual level and the group-level seems to follow in line with what Krueger (2007) proposes. This might support the notion that individuals operate on behalf of a larger (ethnic) group. The proxy for highly economically marginalized ethnic groups (at the country-level) is not robust, and it is therefore reason to believe that the effect is stronger for ethno-nationalist terrorism, than on the overall measurement of domestic terrorism. This indicates that the causal mechanisms may be different for different types of terrorism (e.g. motivations).

Focusing on the political HI aspect in the disaggregated analysis leaves me with much more confidence. The power-balance variable is also interesting as my starting point was that weaker groups would have more to gain from using terrorist measures, and

that more powerful groups are able to use higher intensity measures (such as civil war) rather than using terrorism. In Cederman et al. (2011) power-balance is positively related to ethno-nationalist civil war at intermediate levels, this thus makes my point even stronger, as groups would turn to higher intensity measures as their power rises. This line of argumentation is relevant in regard to the PLO in Palestine, and might be prescribed to other groups as well:

> It is also instructive that when the PLO was at its weakest it chose to use terrorism, but once it had gained political leverage it was in a position to dispense with it. As a consequence it is not surprising that the PLO became a model for other ethnic and nationalist groups in other areas that sought to improve their situation or achieve independence (Lutz & Lutz, 2005:110-111).

Taking a short look at my control variables another intriguing finding from my group-level analysis is the strong negative effect of the number of excluded groups in the country. As we see from the models, and from Figure 7 the probability of terrorism steadily decreases the more groups a country exhibits. This thus verifies the argument that groups do not take up arms if the government use hard-line measures against rebellion, and are unlikely to accept concessions from the group (Walter, 2006). The democracy and anocracy variables are highly significant and positively connected to terrorism throughout all model specifications. Groups residing in open societies and in semi-democracies seem to have higher probability of using terrorism; this is for example the case for the Basques in Spain and in India.

Table 5: Summary of hypotheses

	Supported	Partly supported	Not supported
Horizontal Inequalities Country-level			
H1: The rates and probability of terrorism increases in countries with at least one excluded ethnic group.		X*	
H2: The rates and probability of terrorism increases in countries with severe political horizontal inequities.	X		
H3a: The rates and probability of terrorism increases in countries with large income gap between the economic average and the poorest group.		X**	
H3b: The rates and probability of terrorism increases in countries with large income gap between the economic average and the richest group.			X
H4: The rates and probability of terrorism increases in countries with both political and economic horizontal inequalities			X
Horizontal Inequalities at Group-level			
H5: Politically excluded ethnic groups are more likely to use terrorism, than included groups	X		
H6: Ethnic groups far from the income average have higher probability of using terrorism than groups at the income average			X
H7a: Poor ethnic groups are more likely to engage in terrorism than the groups at the income average.	X		
H7b: Rich ethnic groups have higher probability of using terrorism than the groups at the income average.			X
H8: Ethnic groups experiencing both political and economic HIs have higher probability of using terrorism.			X

*The effect of excluded group variable was significant using the logit model, but not when testing it at rates of terrorism. **The negative horizontal inequality variable was weak but significant in Model 8.

6.   Discussion and conclusion

Terrorism is a security problem facing the world today, and policymakers are trying to find the best measures to counter the threat from terrorism. Terrorist groups are committing horrible actions, with different motivations, these being among others from a revolutionary, separatist, or religious standpoint. Throughout the world terrorist organizations' main goal is political change, by instilling fear in the population. Ethno-nationalist terrorism is not only affecting the host country, but also creating regional instability. Countries like India, Myanmar, Turkey and Iran are frequently experiencing terrorism by ethnic groups wanting to enhance their situation. As we have seen ethnic tensions (and terrorism) in Mali has gotten both regional and international consequences.

The main goal of this thesis has been to investigate how structural inequalities (HIs) increase the risk of ethno-nationalist terrorism in countries around the world. That is, how these inequalities is a main factor in producing frustration for ethnic groups. As we have seen, previous studies of terrorism have had a focus on the individuals being part of the terrorist organizations, and they have not taken into account the fact that *groups* are the main perpetrators.

Throughout this thesis I have looked more closely at ethno-nationalist terrorism, and the drivers for this specific sub-type of terrorism. What I have shown through my analysis is that horizontal inequalities are apt to explain both country- and group-level variations. The analyses I have presented show that countries with severe political inequality, and in some part economic inequality in fact have higher probability of experiencing terrorism. If we want to say something about levels or the severity of terrorism the political exclusion of groups also holds strong as a predictor. In relation to the economic factors, the results are not supportive for higher frequency of terrorism.

The next step and maybe the most important contribution of my thesis were to look more specifically at the group-level of analysis. This enabled me to "drill down" and test more directly the causal logic behind the argument; that inequality between groups is driving them to use terrorism. The analysis at the group-level confirms the findings from the country-level analysis; groups experiencing strong political marginalization have higher probability of using terrorism.

As we have seen the results are strong for political inequality, but not as robust for the economic marginalization approach. This is lending a reasonable amount of support to the hypothesis that terrorist groups are motivated by political grievance, rather than the pursuit of economic goals, which is a highly disputed hypothesis among scholars of the field. As Krueger (2007) mentions, Westerners look at the world through materialist eyes, and thus relates frustration to the lack of material and economic opportunities. Following this, my results show that the political grievances connected to strong marginalization is of greater importance when we want to explain why ethnic groups use terrorism.

In this thesis I have uncovered that the exclusive focus on the country-level could be misleading as aggregated data might be masking important factors of the terrorist phenomenon. Research on specific types of terrorism is an important contribution to the study of terrorism. The causes of terrorism vary widely in between the different types of terrorism, and the research to date has not been able to conclude on the factors causing groups/individuals to use terrorism. One of the most apparent reasons for this is the tendency of supposing that all strains of terrorism have the same underlying causal mechanisms.

6.1   Added Value and policy implications

> ... It's not that I'm apologetic. It's just a matter of sanity. If you don't care if there are further terrorist attacks, then fine, say let's not pay attention to the reasons. If you're interested in preventing them, of course you'll pay attention to the reasons. It has nothing to do with apologetics (Chomsky, 2011[2003]:15)

To conduct productive counter-terrorism policies we need to have in-depth as well as broad knowledge about what causes and motivates terrorist activity. Governments should therefore support research on different sides of the terrorist phenomenon.

This thesis has added value to the study of terrorism in several ways. The most important contribution is the new disaggregated data, which makes it possible to analyse ethnic groups and group-dynamics at a sub-national levels. The combination of GTD data and EPR also give ample opportunities of using geo-referenced variables,

which is a step in the right direction. Further, I have also given new insights to the inequality-terrorism literature, and the deprivation approach. I have combined knowledge from different parts of the study of political violence, proposing that terrorism research has a lot to gain by looking at the civil war literature and integrating knowledge over research "barriers". This has made it possible to enhance the knowledge from previous research.

Is it possible to generalize my finding to other types of terrorism? What is important to remember is that my data and analyses are able to give information on ethno-nationalist terrorism alone and the results proposed in this thesis are only prescribed to this specific form of terrorism. But it is also highly reasonable to expect that my argument can be prescribed to other terrorist groups and organizations as well. Basically, one might say that economic factors are fundamental for ideological terrorism as well. When looking at ideological terrorism, both right-wing (racist) and left-wing, the horizontal inequality aspect might be important. It is also in some cases possible to connect this understanding to transnational terrorism. Lia (2005) points to this fact:

> It is likely that the emerging pattern of horizontal inequality in Europe, especially with regard to the growing Muslim Diasporas, may cause a trend towards a more home-grown jihadism (Lia, 2005:104).

Lia (2005) also propose that the multidimensionality of inequality may lead to more domestic terrorism in Western-Europe as the distribution of wealth (among immigrant communities) may lead to more anti-immigration and racist violence. What is evident from this is that it is highly possible that my results also have implications for the understanding of other types of terrorist activity.

Last but not least, my new disaggregated approach has made it possible to test different geographically based variables, which makes it possible to directly test relationships at the group-level. In this way my new data material also opens a lot of new possibilities for further research. It might be interesting to investigate the groups' opportunities in regard to oil reserves, or availability of other natural resources, and then again adding value to the debate on opportunity vs. grievance. It would also be interesting to uncover more on the relationship between civil war and terrorism.

In the end, what is most evident to me is that the research field needs to be taking all levels of analysis into consideration. All three; the individuals, the groups and the countries are all providing information on different aspects of the phenomenon. Knowledge on all three levels is vital if we want to explain and get ahead with the research.

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Appendix A

Table A1: List over ethnic groups and groups from the GTD

Country	Group GTD	Ethnic Group EPR
Afghanistan	Taliban	Pashtuns
Angola	FLEC/PLMC/FELC-FAC	Cabindan Mayombe
Angola	UNITA	Ovimbundu-Ovambo
Armenia	Armenian Guerilla	Armenians
Azerbaijan	Armenian Guerilla	Armenians
Bangladesh	Jamaat-E-Islami/BNP/JMB/Muslim Militants/Muslim fundamentalists/Muslim demonstrators	Bengali Muslims
Bosnia and Herzegovina	Moslem Paramilitary Group	Bosniaks/Muslims
Bosnia and Herzegovina	Croats	Croats
Bosnia and Herzegovina	Serbian guerrillas/Bosnian Serbs	Serbs
Brazil	Amazonas Liberation Front /Guajajara Tribe /Krikapi Tribe/Pareci Indians/Guayacaipuro Tribe/Kaingang Indians	Indigenous peoples
Bulgaria	Turks	Turkish
Burundi	Hutus/PALIPE	Hutu
Burundi	Tutsi	Tutsi
Canada	FLQ/Qbec Separatists	French Speakers
Chad	Zaghawa ethnic group	Zaghwa, Bideyat
China	Koreans	Koreans
China	Uighur Separatists	Uyghur
Croatia	Serbian Militants/Serbian Guirillas	Serbs
Cyprus	CTPM	Turks
Cyprus	EOKA	Greeks
DRC	Banyamulenge rebels/Tutsi	Tutsi-Banyamulenge
Djibouti	Afar Rebels	Afar
Ecuador	Ashuar tribe	Indigenous peoples
Egypt	Musim Fundamentalists/Muslim Militants/IG	Arab Muslims
Eritrea	Nomadic Afars	Afar
Ethiopia	TPLF	Tigry
Ethiopia	ELF	Muslim Eritreans
Ethiopia		Amhara
Ethiopia	ONLF	Somali (Ogaden)
Ethiopia	OLF	Oroma
France	FLNC/Corsican Separatists/Corsican Revolutionary Brigade	Corsicans
France	ETA/Basc Rectitudes/IK/BBE	Basques
Georgia	Georgian Militants/Georgian guerillia/	Georgians
Georgia	South Ossetian Separatists	Ossetians (South)
Georgia	Abkhazian Separatists	Abkhazians
India	Mizo National Front	Mizo
India	Peoples Liberation Army	Manipuri

India	Tamils/LTTE/Tamil Liberation Army	Tamil (non-SC/ST)
India	GNLF/BTF	Bengali (non-SC/ST)
India	BTHK/Khalistan Commando Force/Khalistan Liberation Force/Akali Dal Party/Diminish Regiment	Punjabi-Sikhs (non-SC/ST/OBCs)
India	Hindu Group/VHP/Bihar Peoples Party	Hindi (Non SC/ST/OBCs)
India	NLFT/ATTF/TNV	Indigenous Tripuri
India	HM/JeM/Kashmiri Militants/LeT/LeJ	Kashmiri Muslims
India	Naga People/NSCN/NSCN-IM/NSCN-K	Naga
India	Bodo Militants/BLT/NDFB	Bodo
India	ULFA	Assamese (non-SC/ST/OBCs)
Indonesia	HKBP	Bataks
Indonesia	E. Timoreese Youts/E. T.Activists/Timoreese guirillas	East Timorese
Indonesia	GAM	Achinese
Indonesia	OPM	Papua
Iran	Arab separatists/Arabs/Autonomy seeking Arabs	Arabs
Iran	ASALA	Armenians
Iran	Jundallah	Baloch
Iran	Kurdish Rebels/Kurdish guerillas/Kurdish Oppositionists/KDP	Kurds
Iraq	Kurds/UKSP/KNU/KPG/PUK/PKK/KDP	Kurds
Iraq	Al-Qa'ida /Al-Qa'ida in Iraq	Sunni Arabs
Israel	Palestinians/PLF/al-Fatha/PLO/PLFP/DFLP/PIJ/Hamas/PRC/Al-Aqsa Martyrs Brigade/Popular resistance committees	Palestinian Arabs
Italy	German Speaking Separatists/Tyrol separatists	German speakers (Austrians)
Jordan	PLO/PFLP/IFLP	Palestinian Arabs
Kazakhstan	Uighur Liberation Organization	Uighur
Kenya	Nandi-Tribe/Maasai tribe	Kalenjin-Masai-Turkana-Samburu
Lebanon	Shaykh Subhi Al-Salih Forces	Sunnis (Arab)
Lebanon	Druzes	Druze
Lebanon	PLO/Palestinians/OAPY	Palestinians (Arab)
Lebanon	Shiite Muslims/Sons of the South/Amal/Al-Sadr Brigades/Hizballah	Shi'a Muslims (Arab
Macedonia	KLA/NLA/ARI	Albanians
Mali	Black Malian Group	Blacks (Mande, Peul, Voltaic etc.)
Mali	Tuaregs /Tuareg Guirilla	Tuareg
Mauritania	Polisario Front	Sahrawis
Mexico	Zapatista National Army	Indigenous peoples
Moldova	Russian Militia/dnsestr Republic searatists/Russian Separatists	Russian speakers
Morocco	Polisaro Front	Sahrawis
Myanmar	Naga People	Indians
Myanmar	Shan Insurgents/SURA/Shan State Army	Shan
Myanmar	Mon Guirillia	Mons
Myanmar	Buddhist Monks	Buddhist Arakanese
Myanmar	Kachin Insurgents	Kachins
Myanmar	Karen National Union/Karen Insurgents/Karenni National Progressive Party	Kayin (Karens)
Nepal	United Peoples Front	Dalits both Hill & Tarai

Nepal	JTMM/MMT/MPRF	Madhesi
New Zealand	Maori	Maori
Nicaragua	Misurasata Indian Organization/Miskito Indian Organization	Miskitos
Niger	Tuaregs /Tuareg Guirilla/MNJ	Tuareg
Nigeria	Igbo tribal Group	Igbo
Nigeria	NDPVF/NDV/MEND/NDDF	Ijaw
Pakistan	PPP/Sindhi Nationalists	Sindhi
Pakistan	MNM/MQM	Mohajirs
Pakistan	Taliban	Pashtuns
Pakistan	BLA/BRA/BLF	Baluchis
Philippines	MNLF/MILF/ASG	Moro
Russia	Congress of Kabardian People	Kabardins
Russia	Chechen Rebels/Chechen Lone Wolf Group/Chechen Martyrs/EFCRI	Chechens
Rwanda	Tutsis	Tutsi
Rwanda	Hutus	Hutu
Senegal	MDFC/Dioulas tribal group/Casamance separatists	Diola
South Africa	Inkatha Freedom Party	Zulu
Spain	FAC/Terra Lliure	Catalans
Spain	Free Galacian People's Guirilla Army	Galacians
Spain	ETA	Basques
Sri Lanka	Tamils/LTTE/Tamil Liberation Army	Sri Lankan Tamils
Sri Lanka	Sinhaleese Extremism	Sinhalese
Syria	PKK	Kurds
Thailand	PULO/Muslim Separatists/ Muslim Militants/Thai Islamic Militants	Malay Muslims
Turkey	PKK/ Kurdish Separatists/Kurds/ PUK/Kurdish rebels	Kurds
United Kingdom	SNLA/Scottish Nationalists/AFS	Scots
United Kingdom	IRA/INLA/RIRA/OIRA/Irish Republican Exstremists/CIRA/	Catholics In N. Ireland
United Kingdom	UVF/UFF/Protestant Extremists/LVF/OV	Protestants In N. Ireland
United States of America	Black Liberation Army /Black Panters	African Americans
United States of America	American Indian Movement	American Indians
Yugoslavia	Croatian Nationalists/Croatians	Croats
Yugoslavia	Serbs/Serbian Guirilla/Serbian Rebels/	Serbs
Yugoslavia	KLA/Albanians/Albanian Separatists	Albanians
Zimbabwe	ZAPU/Supporters of Joshua Nkomo	Ndebele
Zimbabwe	ZANU	Shona

Table A2: Abbreviations to table A1

PLMC=popular Movement for the liberation of Angola

FLEC=Cabida Armed Forces

FELC-FAC= Front for the liberation of cambinda /Cabinda Armed Forces

BNP=Bangladesh Nationalist party

JMB=Jama'atul Mujahideen Bangladesh

PALIPE= Party for the Liberation of Hutu People

FLQ=Front de Liberation du Qubec

CTPM= Cyprus Turkish People's Movement

EOKA= National Organization of Cypriot Figthers

IG=al-Gama'at al-Islamiyva

TPLF= Tigray Peoples Liberation Front

ELF= Eritrean Liberation Front

ONLF=Ogaden National Liberation Front

OLF=Oromoro Liberation Front

TNV=Tripura National Volenteers

ETA= Basque Fatherland and Freedom

BBE= Spanish Basque Batillion

IK=Iparretarrak

LeT=Laskar-e-Taiba

JeM= Janish-e-Mohammad

ATTF=All Tripura Tiger Force

GNLF=Gurkha National Liberation Front

LTTE=Liberation Tigers of Tamil Eelam

BTF=Bengali Tiger Force

BTHK=Bhinderanwale Tiger Force of Khalistan

VHP=Vishwa Hindu Parishad

NLFT=National Liberation Front Tripura

HM=Hizbul Muhajideen

NSCN=National Socialist Council of Nagaland

BLT=Bodo Liberatio Tigers

ULFA=United Liberation Front of Assam

HKBP=Huria Kristen Batak Protestants

LeJ=Jamiat-ul-Mahammad

GAM=Free Acheh Movement

OPM=Free Papua Movement

NDFB=National Democratic Gront og Bodoland

ASLA= Armenian Secret Army for the Liberation of Armenia

KDP=Kurdish Democratic Party-Iran

PKK= Kurdish Workers Party

UKSP=Unified Kurdish Socialist Party

ASG= Abu Sayyaf Group

NSCN-IM=National Socialist Council of NagalandIsak-Muivah

PLF=Palestine Liberation front

NSCN-K=National Socialist Council of Nagaland-Khaplang

IFLP=Islamic Front for the Liberation of Palestine

PFLP=Popular Front for the Liberation of Palestine

DFLP=Democratic Front for the Liberation of Palestine

PJI=Palestinian Islamic Jihad

PDP=Kurdish Democratic Party-Iraq

OAPY=Organization of avenging Palestinian Youth

PKK=Kurdistan Workers Party

PUK=Patriotic Union of Kurdistan

KPG=Kurdish Peshmerga Guerillas

JTMM=Janatantrik Terai Mukti Morcha

KPG=Kurdish Peshmerga Guerillas

MPRF= Madhesi Peoples' Right Forum

MNJ=Movement of Niger People

NDPVF=Niger Delta Peoples' Voulenteer Force

NDV=Niger Delta Vigilante

MEND=Movement for the Emancipation of the Niger Delta

NDDF=Niger Delta Freedom Figthers

MNLF=Moro National Libration Front

EFCRI=Armed Forces of the chechen Republic and Ichekeria

MILF=Moro Islamic Liberation Front

MDFC=Movement of Democratic Forces of Casamance

FAC= Catalan Liberation Front

RIRA= Real Irish Republican Army

CIRA= Continuity Irish Republican Army

OV= Orange Voulenteers

LVF= Loyalist Voulenteer Forces

PUK=Patriotic Union of Kurdisthan

SNLA=Scottish National Liberation Army

INLA= Irish National Liberation Army

UVF= Ulster Voulenteer Force

AFS=Army for Freeing Scoland

OIRA=Official Irish Republican Army

IPLO= Irish People's Liberation Organization

UFF= Ulster Freedom fighters

ZAPU= Zimbabwe African People's Union

ZANU= Zimbabwe African Nationalist Union

FLNC= Corsican National Liberation Front

PLO= Palestine Liberation Organization

Appendix B

Here I will present *some* models and analyses supplementary to the models in Chapter 5. I have not included all tests and models, only those most vital to my analysis. The majority of the models will not be discussed in detail.

Test for multicorrelation at country-level

The vif test show that none of my independent variables have to high tolerance levels. The critical level of the vif test is 0.2-0.1, with perfect multicollinearity the tolerance equals zero (Hamilton, 1992). Although we see that the controls for time-dependence are highly correlated, which is not surprising.

Table B1: VIF-test at country-level

Largest excluded group	0.874007
Positive horizontal inequality	0.854022
Negative horizontal inequality	0.761424
Anocracy	0.777881
Democracy	0.572089
Population	0.536650
Area	0.555546
GDP per capita	0.668364
Time since last terror attack	0.018596
_spline1	0.024595
_spline2	0.000654
_spline3	0.000711

Model fit Zero-Inflated Negative Binominal Model

The choice of using the zero-inflated negative binominal model is based on the fact that the zeroes in the terrorism data may be prescribed to two different mechanisms. First, we might have countries that (theoretically) do not experience terrorism by default. Second, the zeroes may stem from underreporting bias (Li, 2005; Drakos & Gofas, 2006a; 2006b). The choice to inflate all variables in the inflation model, is somewhat disputed. Drakos & Gofas (2006a) and Li (2005) cast doubt on this approach, while Findly, Piazza & Young (2012) and Piazza (2011) specifies the model with all variables included and conclude that this approach is reasonable as the results do not vary substantially. Based on my model-fit test, and sensitivity analyses using only the polity-variable (democracy) in the inflate model, the results do not change notably. I therefore keep the model with all variables, but keeping in mind that the model have its shortcomings when used on the terrorism data. See Table B2.

Based on Model 4 in Chapter 5 I run tests to see if the zinb model fits the data better than the nbreg model. So Figure 1 shows a graph comparing the predictions of zero from both models at different counts. We se that the zinb model clearly underpredicts zeroes at counts lower than 2. Both at higher levels (counts over 3) the two models clearly show the same predictions. Although it looks like we should prefer the nbreg model over the zinb model (at least at lower counts) we cannot base the choice of model by only looking at the graph. The other test statistics (Voung test, the BIC and AIC)clearly prefer the zinb over nbreg.

Table B2: Model testing different operationalisations of the inflated-equation

	Model 15 Original	Model 16 Democracy	Model 17 Polity2
Count Model (non-certain zero) Excluded			
LEG	1.997*	2.177**	2.422**
	(1.117)	(0.945)	(0.960)
NHI	-0.445***	-0.367***	-0.336***
	(0.105)	(0.112)	(0.118)
PHI	0.192	0.573	0.531
	(0.231)	(0.539)	(0.471)
Anocracy	0.614*	1.090***	0.648*
	(0.352)	(0.297)	(0.346)
Democracy	0.569	0.529	0.236
	(0.452)	(0.419)	(0.431)
Population	0.575***	0.884***	0.889***
	(0.176)	(0.145)	(0.145)
Area	-0.225	-0.338*	-0.373**
	(0.203)	(0.180)	(0.183)
GDP	0.308	0.322*	0.321*
	(0.213)	(0.179)	(0.173)
Constant	2.660	2.348	3.090
	(2.150)	(2.054)	(2.090)
Inflated Logit (certain zero) Excluded			
LEG	-0.220		
	(0.974)		
PHI	-1.221		
	(0.814)		
NHI	-3.746***		
	(1.240)		
Anocracy	-2.051***	-22.60***	
	(0.600)	(0.629)	
Democracy	-1.273***		
	(0.414)		
Polity2			-0.372***
			(0.0785)
Population	-0.854***		
	(0.208)		
Area	0.290*		
	(0.153)		
GDP	-0.213		
	(0.240)		
Constant	4.021**	-1.312**	-3.001***
	(2.045)	(0.521)	(0.580)
Observations	4,647	4502	4502
Nonzero Observations	1715	1674	1674
Zero Observations	2932	2828	2828

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Figure B1: Model fit analysis
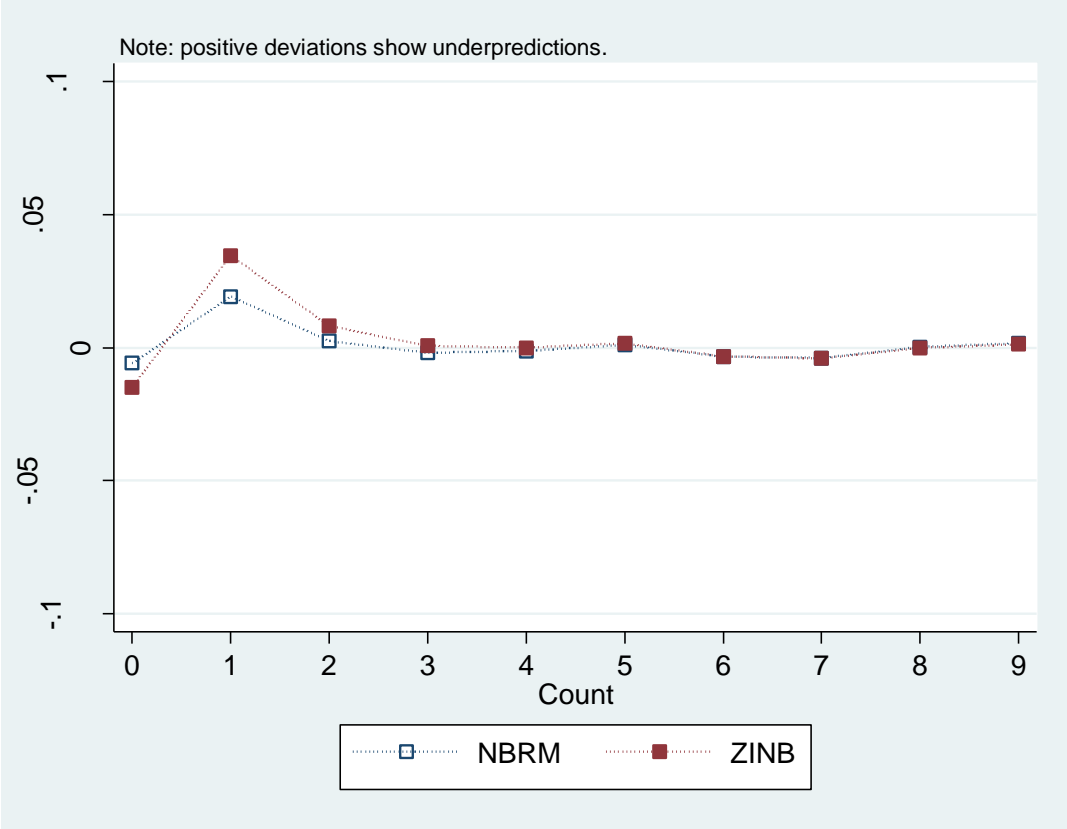
Table B3 shows models 18 to 21, which are the models 1 to 4 presented in Chapter 5. Here I have used a negative binominal regression model. As also mentioned in the model-fit discussion, the nbreg model does not account for the excess number of zeroes in the models. What is evident when running the nreg model is that the results are not robust. Looking at the regressions of the same models (1-4) shows large deviations from the zero-inflated model, and the results are overall more significant. Thus my data fits better with the zero-inflated model as this controlls for the excessive amount of zero observations in the data.

Table B3: Models run with a negative binominal model

	Model 18	Model 19	Model 20	Model 21
Excluded	1.107**			
	(0.454)			
Largest excluded group		1.787**		1.950**
		(0.874)		(0.857)
Richest group			-0.325***	-0.368***
			(0.122)	(0.112)
Poor group			0.523	0.540
			(0.633)	(0.548)
Anocracy	1.271***	1.170***	1.287***	1.166***
	(0.290)	(0.296)	(0.281)	(0.273)
Democracy	1.090**	0.802*	0.969**	0.768**
	(0.464)	(0.419)	(0.451)	(0.390)
Population	0.798***	0.899***	0.800***	0.869***
	(0.173)	(0.158)	(0.171)	(0.147)
Area	-0.330**	-0.291*	-0.204	-0.321*
	(0.156)	(0.172)	(0.174)	(0.178)
GDP per capita	0.263	0.437**	0.278	0.398**
	(0.200)	(0.191)	(0.208)	(0.174)
Constant	2.000	1.663	0.982	1.890
	(1.993)	(2.007)	(1.919)	(2.031)
Observations	4,515	4,647	4,647	4,647

Robust standard errors in parentheses *** p<0.01, ** p<0.05, *p<0.1

Logit models country-level

Table B4 shows the different operationalisations of the original Model 8. Model 22 shows an interaction effect. Model 23 through 25 shows tests for the outliers in regards to the NHI economic inequality variable. Model 27 shows Saudi Arabia which is an outlier in the PHI measure.

Table B4: Logit Model Country-level

	Model 22 Interaction	Model 23 without Argentina	Model 24 without Russia	Model 25 without Thailand	Model 26 without Outliers	Model 27 without Saudi Arabia
LDG	0.601	0.871***	0.839***	0.851***	0.869***	0.846***
	(0.714)	(0.231)	(0.231)	(0.231)	(0.232)	(0.229)
PHI	-0.130	-0.0621	-0.0768*	-0.0741*	-0.0596	-0.0463
	(0.124)	(0.0396)	(0.0395)	(0.0392)	(0.0403)	(0.136)
NHI	0.190*	0.138	0.291**	0.176*	0.134	0.171
	(0.111)	(0.0909)	(0.117)	(0.105)	(0.0950)	(0.106)
Anocracy	0.745***	0.753***	0.723***	0.753***	0.765***	0.738***
	(0.137)	(0.137)	(0.135)	(0.136)	(0.137)	(0.136)
Democracy	0.598***	0.618***	0.579***	0.595***	0.616***	0.594***
	(0.134)	(0.134)	(0.134)	(0.133)	(0.135)	(0.132)
Population	0.423***	0.431***	0.415***	0.422***	0.430***	0.420***
	(0.0577)	(0.0578)	(0.0580)	(0.0579)	(0.0578)	(0.0577)
Area	-0.127***	-0.132***	-0.124***	-0.126***	-0.131***	-0.126***
	(0.0441)	(0.0441)	(0.0441)	(0.0441)	(0.0442)	(0.0437)
GDP	0.172***	0.166***	0.175***	0.170***	0.165***	0.173***
	(0.0547)	(0.0551)	(0.0546)	(0.0549)	(0.0551)	(0.0552)
PHI*LEG	0.286					
	(0.621)					
NHI*LEG	-0.0799					
	(0.407)					
GTD_peace	-0.917***	-0.908***	-0.908***	-0.915***	-0.905***	-0.919***
	(0.0612)	(0.0611)	(0.0608)	(0.0617)	(0.0614)	(0.0616)
_spline1	-6.27e-07	1.44e-06	2.71e-06	4.27e-06	6.37e-06	-1.23e-06
	(9.66e-05)	(9.63e-05)	(9.69e-05)	(9.67e-05)	(9.67e-05)	(9.70e-05)
_spline2	-0.0341***	-0.0337***	-0.0336***	-0.0339***	-0.0334***	-0.0341***
	(0.00394)	(0.00394)	(0.00394)	(0.00396)	(0.00396)	(0.00397)
_spline3	0.00993***	0.00981***	0.00975***	0.00985***	0.00971***	0.00994***
	(0.00153)	(0.00153)	(0.00153)	(0.00153)	(0.00153)	(0.00154)
Constant	0.122	0.134	-0.0658	0.0697	0.130	0.0547
	(0.506)	(0.485)	(0.490)	(0.484)	(0.484)	(0.496)
Observations	4.647	4.611	4.611	4.611	4.575	4,611

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Group-level tests

Test for multicollinearity at the group-level

As for the VIF-test at the country level, it does not seem that any of my independent variables have to low of a tolerance. But we see that the power balance variable have a low level of tolerance. This is probably not of any importance, as the variable is calculated with information from the groupsize variable.

Table B5: VIF- test country-level

Excluded	0.616129
Power balance	0.215805
Poor ethnic group	0.795275
Rich ethnic group	0.962025
Anocracy	0.777111
Democracy	0.600737
Number of excluded groups	0.596599
GDP per capita	0.723978
Groupsize	0.207631
Time since last terror attack by ethnic group	0.003277
_spline1	0.000069
_spline2	0.000064
_spline3	0.001627

Logit models group-level

Table B6 shows models 28 to 31 based on Model 14 in Chapter 5 and show different restrictions to the sample. These models are without the outliers in the Poor ethnic group variable. Model 28 show a regression for only the years after 1990 (because of the static nature of the G-Econ variable).

In table B7 shows models 32 to 34. Model 33 shows a model where excluded group is swapped with a variable measuring discrimination. Being discriminated means that a group is simultaneously excluded from central power, and experiencing discriminatory policies (Cederman et al., 2011). One would believe that being discriminated would have a larger effect on terrorism than "just" being excluded. As we see the discriminated variable is significant, but not nearly as strong as the excluded variable (Model 14). This

is an interesting observation as it seems that (again) exclusion politics matter most in regard to ethno-nationalist terrorism.

Table B6: Logit models group-level

	Model 28 without Russia	Model 29 without Thailand	Model 30 without Argentina	Model 31 without outliers
Excluded	1.462***	1.470***	1.488***	1.488***
	(0.286)	(0.291)	(0.290)	(0.290)
Power balance	-1.543**	-1.418*	-1.364*	
	(0.776)	(0.731)	(0.715)	
Poor group	0.372	0.558**	0.641**	-1.394*
	(0.270)	(0.259)	(0.275)	(0.718)
Rich group	-0.185	-0.167	-0.155	0.638**
	(0.218)	(0.206)	(0.201)	(0.276)
Anocracy	0.421*	0.340	0.353	-0.159
	(0.230)	(0.231)	(0.235)	(0.202)
Democracy	0.779***	0.757***	0.784***	0.341
	(0.225)	(0.228)	(0.227)	(0.234)
No.excluded groups	-0.0581***	-0.0983***	-0.104***	0.768***
	(0.0132)	(0.0244)	(0.0279)	(0.228)
GDP per capita	0.245**	0.196	0.186	-0.104***
	(0.112)	(0.122)	(0.119)	(0.0278)
Groupsize	1.655	1.530	1.474	0.188
	(1.201)	(1.161)	(1.148)	(0.118)
GTD_peace	-0.485***	-0.476***	-0.476***	1.515
	(0.0877)	(0.0885)	(0.0902)	(1.157)
_spline1	0.00641	0.00747	0.00890	0.00890
	(0.00768)	(0.00782)	(0.00817)	(0.00818)
_spline2	-0.00661*	-0.00715**	-0.00792**	-0.00792**
	(0.00345)	(0.00353)	(0.00369)	(0.00370)
_spline3	0.00255***	0.00269***	0.00288***	0.00288***
	(0.000721)	(0.000746)	(0.000774)	(0.000775)
Constant	-4.815***	-4.501***	-4.515***	-4.510***
	(0.914)	(0.915)	(0.895)	(0.891)
Observations	14526	16146	16062	15922

Robust standard errors in parentheses *** p<0.01, ** p<0.05, *p<0.1

Table B7: Logit models group-level

	Model 32 Year> 1990	Model 33 Discriminated	Model 34 Interactions
Excluded	1.084*** (0.310)		1.350 (1.130)
Discriminated		0.720* (0.401)	
Power balance	-1.400 (1.073)	-1.560** (0.681)	-1.459** (0.715)
Poor group	0.762** (0.296)	0.620** (0.255)	-0.242 (0.464)
Rich group	-0.265 (0.342)	-0.284 (0.277)	0.420 (0.608)
Anocracy	-0.139 (0.239)	0.225 (0.258)	0.333 (0.230)
Democracy	0.235 (0.306)	0.616** (0.267)	0.725*** (0.220)
No.excluded groups	-0.110*** (0.0288)	-0.0863*** (0.0268)	-0.101*** (0.0255)
GDP per capita	0.0649 (0.146)	0.296** (0.130)	0.198 (0.123)
Groupsize	1.895 (1.596)	0.445 (1.189)	1.510 (1.141)
Rich*excluded			-0.743 (0.694)
Poor*excluded			0.833 (0.548)
GTD_peace	-0.264* (0.141)	-0.414*** (0.0835)	-0.475*** (0.0902)
_spline1	0.0255** (0.0123)	0.0109 (0.00791)	0.00763 (0.00788)
_spline2	-0.0153*** (0.00544)	-0.00836** (0.00359)	-0.00722** (0.00355)
_spline3	0.00439*** (0.00111)	0.00279*** (0.000755)	0.00270*** (0.000746)
Constant	-2.896** (1.227)	-4.258*** (0.958)	-4.241*** (1.115)
Observations	6,896	16,181	16,181

Robust standard errors in parentheses *** p<0.01, ** p<0.05, *p<0.1