**Ethnicity and Terrorism:**

**A Geographic Information Systems Approach**

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Ethnic identification can give group members a strong a sense of community and security (Horowitz 1985) and, under certain conditions, may prove useful in helping groups integrate into a democratic society (Birnir 2007). At the same time, ethnicity may offer greater opportunities for violence. Over half of civil wars divide along ethnic lines (Denny and Walter 2014, 199), and ethnic conflicts tend to become “more protracted, formidable, and potentially more violent than non-ethnic conflict” (Carment 1993, 140).[[1]](#footnote-1) Ethno-national groups are also responsible for some of the most lethal terrorist attacks (Masters 2008, 408), further suggesting that ethnicity provides a strong impetus for political violence.

While ethnicity can be a powerful motivator for political action, most terrorism research treats ethnicity as a control variable rather than a central theoretical concept (Krueger and Laitin 2008; Sambanis 2008; Basuchoudhary and Shugart 2010). Work that does make ethnicity a central focus tends to limit the analysis to just ethnic terrorism (Byman 1998). Such an approach allows a better understanding of why and when ethnic groups use terrorism to forward an ethnic agenda, though it does not offer much insight into how ethnicity may affect other types of terrorist organizations. While the civil war literature may offer some general insight into the relationship between ethnicity and political violence, the capacity differences between rebel and terrorist organizations require us to rethink some of these relationships. Instead, we contend that the relationship between ethnicity and terrorism can be better understood by drawing on work in the ethnic politics literature that focuses on how competitive environments trigger contentious group relations (Olzak 1992, Wilkinson 2004, Eifert, Miguel and Posner 2010).

To test our theoretical framework, we utilize a range of subnational data which reflects the idea that domestic terrorism is an outcome driven by local factors. Amongst our sources, we incorporate a unique subnational Ethnolinguistic Fractionalization (ELF) dataset (Alesina and Zhuravskaya 2011), which allows us to take into account the uneven distribution of ethnicities within states. Our results suggest that local features such as ethnic composition, population dynamics, economic inequalities, political exclusion, and political institutions all shape the contentiousness of ethnic identities and increase the likelihood of terrorist violence.

**CIVIL WAR AND TERRORISM: HOW CLOSE AN ANALOGY?**

Given the limited research focused on ethnicity and its influence on terrorism (Byman 1998; Krueger and Laitin 2008; Basuchoudhary and Shugart 2010), past researchers have often used theories of civil war as a surrogate to explain subnational terrorist violence (Blattman and Miguel 2010).[[2]](#footnote-2) Comparing civil wars and terrorism may have some relevance, given that rebel and terrorist organizations both benefit from the powerful cohesive force of ethnicity. The temptation to rely upon the civil war literature as a theoretical framework is further reinforced by the fact that rebel groups often employ terrorist tactics during their campaigns (Kalyvas 2004).

Rebel and terrorist groups, however, differ in a number of significant ways. One of the most important distinctions between the two is their need for resources, particularly membership. Sambanis (2008) argues that a terrorist organization resembles “a failed insurgency,” suggesting that terrorist groups were unable to overcome some threshold that would allow it to grow larger and become a more effective challenger for state power. While part of this difference may rest on internal factors, the environment plays a large role in determining recruitment potential. While a terrorist group may form where “discontent is not generalized or severe enough to provoke the majority of the populace” (Crenshaw 1981, 384), a rebel group requires a setting that enables them to expand their membership. Weinstein (2005) notes that rebel entrepreneurs require environments with ready access to economic and/or social endowments so that they can weave together a large enough coalition of people to create an effective opposition to the state.[[3]](#footnote-3) Since rebel groups benefit from environments with widespread discontent while terrorist groups require concentrated radicalism, these groups differ in their sensitivity to ethnic dynamics.

These recruitment differences, over time, translate into different organizational structures. Rebel organizations are larger, often having forces in the range of 500 to 5000 members (Collier et al. 2003, 54). In order to manage their numbers and extend their influence, a rebel group will resemble the very militaries they oppose, complete with hierarchical command structure and communication between units (Sambanis 2008). Such size and structure allows the rebel organization to better counteract government efforts (Weinstein 2005) and maintain control over territory (Sambanis 2008, 181).

Terrorist organizations, in contrast, are generally much smaller. According to Jones and Libicki (2008, 100), 90% of the 648 terrorist organizations in their database have fewer than 1000 members, and 55% had fewer than a hundred members. The small size of terrorist organizations puts them at a dramatic disadvantage when facing the state. This asymmetry in power forces them to select an alternative, less hierarchical, organizational form (Kilberg 2012). This type of structure may be less effective in presenting a direct challenge to state authority, but better allows them to carry out clandestine operations and evade state counterterrorism efforts. In contrast to rebel organizations, the weakness and need for concealment compels terrorist organizations to use their operatives’ social networks from which to recruit and maintain the organization (Sambanis 2008, 196).

Finally, rebel and terrorist groups operate in very different theaters. Rebel operations benefit from environments that make state governance difficult (Fearon and Laitin 2003, Collier and Hoeffler 2004). Difficult terrain and distance from a state’s capital are all linked to the onset of civil war (Fearon and Laitin 2003; Buhaug and Lujala 2005; Buhaug and Rød 2006), as are areas with low populations (Collier and Hoeffler 2004; Buhaug and Rød 2006). Populations in such regions may be less effectively governed and less likely to be included in the provision of public goods from the government (Alesina and Spolaore 2003) and are less likely to denounce challengers to government authority (Kalyvas 2006, 136).

While the activities of rebel groups are best concealed away from government power, their smaller size and more autonomous structure allow terrorist groups to operate even when state power is concentrated. The cell structure common to terrorist networks mean that the central leadership can provide general guidelines rather than detailed orders, helping the group maintain a low profile even where government scrutiny is highest (Grabosky 1988). In fact, terrorist groups may prefer to operate in urban environments: the means of communication and transportation are improved in urban areas, reducing the cost of operations (Sayari and Hoffman 1994). It is unsurprising, then, that the probability of terrorism is highest in areas with large populations and high population densities (Nemeth, Mauslein, and Stapley 2014).

In sum, terrorist organizations face fewer constraints on their ability to act than rebel groups. Given the differences between the two, it may not be appropriate to study terrorism through the lens of civil war. Instead, we can build a stronger theory by integrating insight from a field of research that examines more “low level” mobilizations, including the ethnic politics literature on social movements, protests, and rioting. Drawing an analogy with ethnic rioting may be particularly beneficial, as this behavior is generally seen as an elite-driven activity with the purpose of changing “the salience of ethnic issues and identities” among the general population (Wilkinson 2004, 1). Similarly, terrorism is a strategy of “elite disaffection,” with a small organization that often claims to act on behalf of a wider constituency (Crenshaw 1981, 384). In environments where ethnicity serves to motivate political violence, rioting and terrorism may be ways an elite would seek to mobilize the masses (Byman 1998, Wilkinson 2004). In fact, paramilitary organizations and extremist groups are among the frequent organizers of ethnic riots, suggesting that terrorism and rioting may be different tactics used by the same organizations (Horowitz 2001, 230).

**Ethnicity and Adversarial Environments: A Theory of Political Violence**

A major insight from the ethnic politics literature is that we are better served by analyzing the environmental factors that trigger ethnic mobilization rather than examining the presence or absence of diversity (Posner 2006, Chandra and Wilkinson 2008).[[4]](#footnote-4) From social movement formation to voting to rioting, ethnic group activity is shaped by the political and economic environment (Wilkinson 2004, Van Cott 2005, Birnir 2007). This argument is, in many ways, compatible with recent work in the civil war literature, which has demonstrated that political institutions (Schneider and Wiesehomeier 2008), political and economic inequalities (Cederman and Girardin 2007, Cederman, Weidmann and Gleditsch 2011, Wucherpfennig, et al. 2011), and economic spending policies (Taydas and Peksen 2012) serve to increase or moderate existing ethnic cleavages. In effect, environmental factors filter ethnic divides and determine whether ethnic relations become polarized. These more polarized environments, in turn, serve to “hollow out the uncommitted middle” (Tilly 2003, 22), increasing the risk of political violence.

Most importantly, environmental factors also shape the type of collective action a group chooses, with political institutions playing a central role in determining whether ethnic mobilization will be violent or non-violent (Saideman, et al. 2002, Posner 2006, Eifert, Miguel and Posner 2010). From an economic perspective, controlling the government allows an ethnic group to use limited state resources to better “care for ‘their own people,’” (Wimmer, Cederman and Min 2009, 321). This creates the possibility that the ethnic group in power will use the state’s coercive apparatus, legal system, and economic resources to dominate those outside of power. This fear serves as a powerful motivator for ethnic mobilization (Petersen 2002), increasing the willingness of group members to either “seek to control the state or secede if the state’s neutrality cannot be assured” (Saideman et al. 2002, 106-107).

In the rioting literature, while political competition may encourage the elite to play “the ethnic card” and promote violent strategies (Horowitz 2001, Wilkinson 2004), political exclusion and a “sense of powerlessness” may motivate participants in the violence (Koff 2009). For terrorist groups, we argue that overt exclusion increases the risk of violence as it serves to polarize ethnic relations. In addition, because terrorist groups operate with fewer resources under their disposal (Crenshaw 1985), and because local representatives serve as more immediate focus for ire than far-removed national targets (Koff 2009, 781), this will focus their targeting on their immediate vicinity.

**H1:** *If a region contains an ethnic group that has been excluded from power, this region will be more prone to terrorist attacks.*

While we expect political domination and exclusion to have a fairly direct impact on the outbreak of violence, the role of political competition is often quite complex. Some level of competition may be beneficial as it can “…serve to release and resolve tensions in society…” (Cohen 1997, 608), helping to transform violent mobilization into non-violent activities. The trick, however, seems to be to avoid institutions that encourage elites to engage in “ethnic out-bidding” and inflammatory rhetoric to win elections, which increases the adversarial relations between groups (Horowitz 1985; Wilkinson 2004). In the ethnic politics literature, this dilemma has sparked a lively debate between proponents of consociationalism (most famously Lijphart 1977; 2004) and supporters of centripetalism (Horowitz 1985, 1993; Reilly 2012) on which political institutions promote the healthiest form of competition for multiethnic societies.

A central point of contention between these two approaches is the trade-off between representation and political fragmentation. Proportional representation (PR) systems are widely considered more representative due to their larger district magnitude; with more potential electoral “winners,” it is easier for small parties – including those that represent ethnic or religious minority groups – to achieve representation (Taagepera and Shugart 1989; Lijphart 1977; 2004; Birnir 2007). For consociational scholars, inclusion of groups can play an important role in moderation. As Saideman et al. (2002) find, both protest and rebellion are less likely in proportional democracies than in majoritarian ones. Likewise, Aksoy and Carter (2014) note that more open electoral institutions see fewer *within-system* terrorist groups emerge, suggesting that electoral exclusion contributes to greater terrorist violence.[[5]](#footnote-5)

Reilly (2012), however, warns that an electoral environment that is too permissive can fragment the party system and, in multi-ethnic societies, lead parties to craft their appeals around very narrow sectarian interests. Fragmented party systems may increase the risk of terrorism as they create more fragile governing coalitions and are less able to integrate “disparate socio-political interests into mainstream political institutions” (Piazza 2010, 102). The debate between consociationalism and centripetalism, therefore, rests on whether electoral competition is translated into a healthy or unhealthy form of party competition. Too few parties in competition encourages elites to use polarizing rhetoric and escalate ethnic relations (Wilkinson 2004), too many and politics can devolve into sectarianism.[[6]](#footnote-6) As the political party system represents the interaction between electoral system and the prevalence of social cleavages such as ethnicity (Powell 1982; Ordeshook and Shvetsova 1994; Neto and Cox 1997), we propose a curvilinear relationship:

**H2:** *In countries that use very small or very large districts, ethnically diverse regions will be more prone to violence.*

Power relations are so central to determining interethnic relations because they shape the distribution of resources (Wimmer, Cederman and Min 2009). This political competition, in turn, becomes more contentious as the available resources become scarcer. The link between low economic growth and increased violence is well-established in the civil war literature. For instance, Saideman et al. (2002) find that disadvantaged ethnic groups are more likely to engage in both protest and rebellion, and that groups in wealthier states are less likely to engage in violence than those in poor states.[[7]](#footnote-7) However, the link between economics and terrorism is less obvious (Krueger and Maleckova 2003, Piazza 2006, Burgoon 2006, Nemeth, Mauslein and Stapley 2014).[[8]](#footnote-8) Part of this discrepancy may be that much of the literature has generally treated wealth as a proxy for a state’s capacity to deter attacks (Collier and Hoeffler 1998, Tilly 2003, Fearon and Laitin 2003), which, as we discussed previously, makes more sense for civil war combatants than it does for terrorist groups.

Nonetheless, we have good reasons to predict that violence should be more prevalent in low-income areas characterized by ethnic divides. Low-income regions experience greater resource scarcity, intensifying ethnic group competition and increasing the chance that different ethnicities will view each other as adversaries, setting the stage for future conflict (Horowitz 1985). The outcome of these struggles will also create resentments towards toward the victors, increasing the desire to “lash out” at opposing groups (Horowitz 1985; Petersen 2002; Cederman et al. 2011). The threat of violent mobilization is especially high in areas with significant horizontal inequalities – inequalities that aligns upon group-based cleavages rather than individual experiences (Østby et al. 2009). And so, while terrorist groups may be recruiting from other populations, in regards to where they select targets, we predict:

**H3:** *Less developed and ethnically diverse regions will be more prone to terrorist attacks.*

Poor economics trigger greater “movements of crisis,” which tend to be more violent and spontaneous than social movements built around more affluent groups (Kerbo 1982), a prediction consistent with the considerable work on ethnic rioting and declining economics (for instance, see Bohlken and Sergenti 2010).[[9]](#footnote-9)

Turning to our final environmental factor, Sambanis (2008) notes that terrorist violence may be most appropriate for urban warfare while rebellion is more likely in rural settings, a trend we contend relates back to the operational differences between terrorist and rebel organizations. Ethnically diverse urban environments may serve to foment more concentrated violence such as rioting or terrorism as it benefits the recruitment needs of these groups. Classic work on ethnic competition (Nagel and Olzak 1982, Olzak 1992, Kandeh 1992) has argued that urban settings help build networks among transplanted ethnic groups (who often settle in communal enclaves) and serve as arenas of economic competition. The contact that arises in urban and industrialized settings reinforces perceptions of ethnic differences and, combined with scarce resources, fuel competition and conflict between ethnic groups.

For terrorist organizations, the dense social networks available in cities can provide a potential recruitment base (Mousseau 2011), a concern that has been raised in many European cities. In France, housing and employment discrimination has led the immigrant Muslim population to become concentrated in places such as Paris’ *banlieues* (Franz 2007). In the 2005 French riots, the main participants were the disaffected second- and third-generation immigrants of the *banlieues* (Haddad and Balz 2006).[[10]](#footnote-10) Many moderate Muslims have expressed concern that these youth could be easily recruited to terrorist organizations.[[11]](#footnote-11) Since urban environments may increase intergroup competition, provide ready-made recruitment networks, and increase political alienation, we predict:

**H4:** *Densely populated and ethnically diverse regions will be more prone to terrorist attacks.*

This prediction contrasts with civil war studies. As stated previously, the operational differences of rebel groups cause them to be disadvantaged in urban environments. In contrast, the covert nature of terrorism means that law enforcement efforts become costlier while group operations decrease in price in areas with large populations (Piazza 2006).

**DATA AND METHODS**

To test our hypotheses, we draw from the Global Terrorism Database (GTD) (START 2012). The dataset includes 104,689 domestic and international terrorist incidents in approximately 180 states from 1970 to 2011. Incidents are included in the data if they fulfill three primary criteria: the attacks are intentional; they involve the use, or threatened use, of violence; and the perpetrating actors are sub-national (START 2012, 6). In addition, they must also fulfill two of three further criteria: the act must be directed towards a political, economic, religious, or social goal; there must be evidence of intent to coerce; and the action must be outside the realm of legitimate military activities (START 2012, 6).

We focus our analyses on incidents of domestic terrorism. Domestic and transnational terrorism are driven by fundamentally different processes (Young and Findley 2011), and our theory regarding the role of ethnicity more closes applies to domestic terrorism motivations than to transnational ones. In particular, societal dynamics such as group competition or ethnic power relations are likely to impact domestic incidents, but may play a less direct role in transnational terrorist attacks. We generate our list of domestic terrorist incidents by using the procedure introduced by Enders et al. (2011), providing us with 24,081 domesticterrorist incidents.

**Geocoding Ethnic Terrorism**

After identifying our sample of cases, we collapse our attack data by year and location to create an initial time series dataset of 3,242 unique location-years that experienced at least one act of domestic terrorism since 1990.[[12]](#footnote-12) We then geocode these locations using ArcMap 10 to determine their latitude and longitude, allowing them to be merged into the larger PRIO-GRID spatial dataset (Tollefsen et al. 2012).[[13]](#footnote-13) In order to better assess how cell-level attributes increase or decrease the risk of terrorism, we include in our analyses the remaining cell-years where a terrorist event did not take place.

This results in a dataset of approximately 582,750 cell-years, with each cell experiencing anywhere from 0 to 276 attacks per year. Since the data are highly skewed (with a high prevalence of 0 and 1 with very few other values), we dichotomize this dependent variable to denote simply whether or not a specific cell has experienced any act of domestic terrorism in that year. Given that the data were already essentially dichotomous, we are confident that little information is lost with our choice of dependent variable.[[14]](#footnote-14)

For our models, we employ a random effects logistic regression. We use this model because the random effects specification allows us to efficiently control for a range of additional country-level factors that are present in the error term (Wooldridge 2001). We chose this over a fixed effects approach since a number of variables described below – such as ELF, terrain, border distance, and capital distance – are time invariant. Lastly, to control for temporal effects we include the number of peace years (years between attacks) as well as three cubic splines (Beck and Katz 1995).

**Independent Variables**

Our main independent variable of interest is ethno-linguistic fractionalization (ELF). The use of ELF in the political science and economic literatures is well known (Alesina et al. 2003, Fearon and Laitin 2003, Sambanis 2001); also well-known are the methodological drawbacks.[[15]](#footnote-15) One of the most frequent criticisms of ELF is its aggregation at the state level. Statewide numbers can often give the appearance of either high or low levels of overall ethnic diversity; however “ethnic groups in fragmented societies tend to cluster in specific areas, rather than being scattered around” (Buhaug and Rød 2006, 318). For instance, examining the case of India, it has a state-level ELF of 0.886 (Fearon and Laitin 2003); however, its diversity varies greatly between the largely homogenous Mizoram region (.027) and the highly diverse Odisha State (.741).[[16]](#footnote-16) Because of this tendency towards population clustering, some of the most interesting differences in ethnic interactions may occur *within* rather than between different states.

[Figure 1 Here]

For this reason, we instead use Alesina and Zhuravskaya’s (2011) data on sub-national ethnic diversity.[[17]](#footnote-17) While their data are unfortunately limited in regards to the temporal dimension, its sensitivity to regional dynamics is a marked improvement over previous measures of ethnic diversity. Their data allow us to determine the size of ethnic groups within administrative regions, as well as their share of the total regional population. Fractionalization is calculated based on the standard ELF fractionalization score:

where indexes countries, *j* indexes regions, and is the fractionalization of group *m* in region *j* of country *i*. The value of this variable ranges from 0 to 1 In line with our theory above (and counter to the civil war predictions), since terrorism is a strategy used by groups in the fringes, we predict that regions at the extremes of this scale – the most homogenous and the most diverse – are most prone to terrorist violence. To account for this non-linear relationship, we square this variable and include it in our models. The scattered availability of this data reduces our sample to 462,832.

Our first hypothesis examines the role that an ethnicity’s political exclusion plays on the likelihood of domestic terrorism. To measure this, we use Wimmer et al.’s (2009) Ethnic Power Relations (EPR) measure of an ethnicity’s access to state power. Using this measure, we generate three different dichotomous variables based on whether the lowest-ranked group (the ethnicity with the least access to power) within each cell has absolute power, is part of a power sharing government, or is excluded from power.[[18]](#footnote-18) The use the lowest ranked group follows Cederman et al. (2010) who find that heavily excluded ethnicities are the most likely to rebel.

Following the assumption that environmental factors shape the contentiousness of ethnicity, we include a number of additional independent variables, both as separate covariates and as elements of interaction terms.[[19]](#footnote-19) To examine the role of urbanization, we include a measure of population density. This is constructed by dividing PRIO-GRID’s cell population measure by that particular cell’s area. The resulting measure captures the average number of people per square kilometer within each cell. Since this variable relies on PRIO-GRID measure of population, which is only available in five-year increments starting in 1990, we interpolate this variable across the missing years. To address potential issues with outliers, we log this variable.

Regional economic development is measured by using PRIO-GRID’s measure of gross cellular product (GCP) per capita, adapted from Nordhaus (2006). Like population density, this variable is only available in five year increments starting in 1990, and so we interpolate this variable across the missing values. Again, we log it to account for outliers.

**Control Variables**

Following previous research that has established a positive link between geography and domestic violence (Fearon and Laitin 2003; Nemeth et al. 2014), we include a number of variables to capture the impact of both physical and human geography. To fit within our general capacity framework, we focus on the variables that affect a state’s ability to govern an area. This includes a cell’s terrain, distance to the border, distance to the capital, and the overall population.

To consider terrain, a central government may have more difficulty extending their power to mountainous regions. This, in turn, affords rebel groups and terrorist organizations a stronger position to launch their attacks. We measure mountainous terrain, called *% mountainous* here, using the PRIO-GRID’s variable for the proportion of mountainous terrain within each cell (Tollefsen et al. 2012).

We also control for distance to a state border and distance to the national capital using variables provided by the PRIO-GRID dataset. Border regions can provide sanctuaries to armed groups, especially if a given country is bordered by rivals. State capitals may also lure terrorist groups, as they provide a range of range of symbolic and high-value targets. *Border distance* measures the straight-line distance in kilometers from the cell center (or centroid) to the nearest contiguous state; *capital distance* measures from the cell centroid to the national capital. To account for the potential diminishing effects of this geography on the likelihood of violence, we log each variable.

Finally, areas with large populations are more likely to experience terrorist activity. Reflecting the economies of scale argument raised with population density, a state will need to extend more resources to protect a large population while a terrorist group will, inversely, need to extend fewer resources due to the availability of targets.[[20]](#footnote-20) We use the PRIO-GRID’s measure of cell population, adapted from the Gridded Population of the World Dataset (CIESIN 2005). Because this variable is available in five-year increments (beginning in 1990), we interpolate across the missing values. We drop the 27,786 cell-years that had no population and, to account for population outliers, we log the final variable.

**RESULTS**

[Insert Table 1 Here]

In order to best present our results, we divide Table 1 between a full model comprised of all regime types, one of democracies, and a final one comprised of autocracies. Our models suggest that regional ethnic diversity can, to some degree, contribute to the likelihood of domestic terrorism. In particular, similar to the ethnic constructivist argument, we find that ethnicity becomes salient – contributing to terrorist violence - in those states, namely democracies, where allegiance to an ethnic identity can have political consequences. The attribution of this violence – whether it is directly related to diversity – or merely serves as a proxy for more common explanations of terrorist violence remains an area for future study.

[Insert Table 2 Here]

Regarding our hypotheses, we find support for our first hypothesis; domestic terrorism is more likely to occur in regions that are characterized by political exclusion and, with the exception of autocratic regimes, in areas of political dominance. While the overall probabilities are small, indicating the relatively random nature of terrorism, movement from the 5th to the 95th percentile has a distinct, and substantial, effect on attack risk. As expected, the greatest increase is found in democratic states. Once again, this suggests that ethnic identity, and exclusion from power, has the greatest effect in systems where political access is important. The specific causal mechanism for this finding remains elusive; are excluded ethnicities using terrorism to strike against more politically connected ethnicities? Such an explanation would be in line with more traditional understandings of terrorism; a “weapon of the weak” argument. On the other hand, it may be that the excluded ethnicity is using terrorism as a means of enforcement, preventing moderates from establishing ties with other, more powerful ethnicities. Or lastly, dominant ethnicities can be conducting terrorist activities against excluded groups in these areas. This finding begs further research.

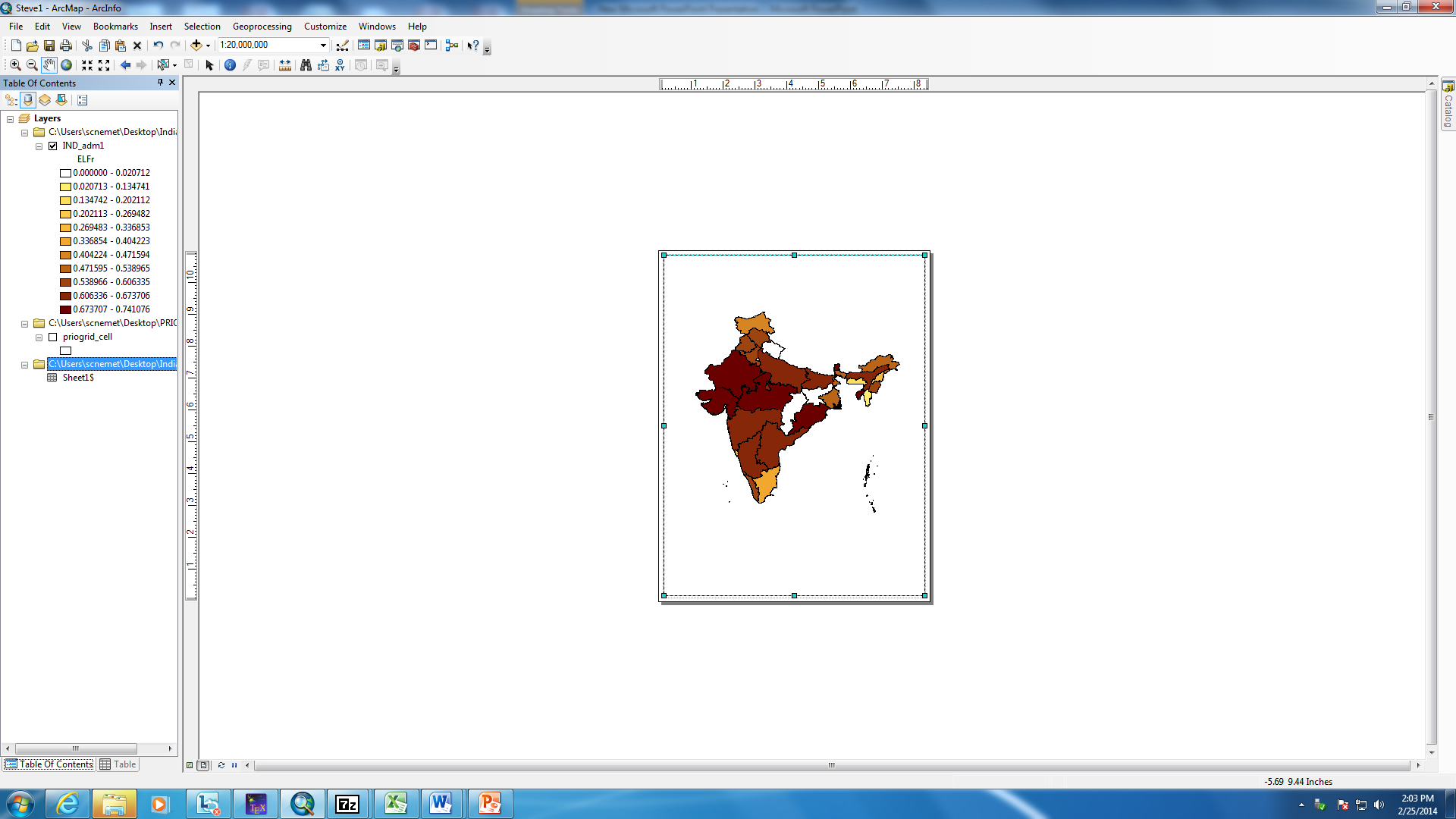
[Insert Figure 2 Here]

Before we discuss our second hypothesis, we note that we find mixed support for our third and fourth hypotheses. To assess these two, we turn to the grinter plots found in the second and third column of Figure 2. These plots show the marginal effect of economic development and population density as conditioned by increasing ethnic heterogeneity. Regarding our third hypothesis, the grinter plots show that, for our full model, the marginal effect of economic development on terrorist violence decreases as ethnic heterogeneity increases. This effect is attenuated for democracies and non-democracies. Once again, this suggests that ethnicity itself is not the negative force it is often described as. Instead, ethnic violence, terrorism included, is a function of a region’s economic development.

Our fourth hypothesis also finds mixed support, with democracies indicating the strongest effect. For democracies, we show that the marginal effect of population density on terrorist violence increases as ethnic heterogeneity increases. This suggests that ethnicity can become a negative force and contribute to terrorist violence in densely populated areas. In these areas, identities are mobilized, ethnic networks are utilized, and competition between ethnicities can become more intense. This effect is reversed in autocracies. Rather than suggesting that ethnicity is less salient in these types of states, this finding is most likely due to the lack of reliable data.

**Conclusion**

**Figure 1:** Regional ELF in India



Missing

0.02-0.13 (1st Decile)

0.13-0.20 (2nd Decile)

0.20-0.27 (3rd Decile)

0.27-0.34 (4th Decile)

0.34-0.40 (5th Decile)

0.40-0.47 (6th Decile)

0.47-0.54 (7th Decile)

0.54-0.61 (8th Decile)

0.61-0.67 (9th Decile)

0.67-0.74 (10th Decile)

**Table 1: Logit Estimation of Domestic Terrorist Attacks, 2000-2008**

|  |  |  |  |
| --- | --- | --- | --- |
|  | All States | Democracies | Autocracies |
| ELF | .769  (1.30) | 3.81\*\*  (1.72) | -2.95  (2.94) |
|  |  |  |  |
| ELF2 | 2.64\*\*\*  (.518) | 1.52\*\*  (.599) | 5.52\*\*\*  (1.17) |
|  |  |  |  |
| ELF x Pop Density | -.019  (.072) | .067  (.082) | -.172  (.169) |
|  |  |  |  |
| Population Density | .342\*\*\*  (.071) | .248\*\*\*  (.082) | .525\*\*\*  (.169) |
|  |  |  |  |
| ELF x GCP per capita | -.275\*\*  (.131) | -.540\*\*\*  (.166) | -.076  (.340) |
|  |  |  |  |
| GCP per capita | -.136  (.085) | .065  (.103) | -.332\*  (.180) |
|  |  |  |  |
| Exclusion | 1.31\*\*\*  (.125) | 1.51\*\*\*  (.144) | .784\*\*\*  (.288) |
|  |  |  |  |
| Dominance | .740\*\*\*  (.158) | .961\*\*\*  (.176) | .178  (.454) |
|  |  |  |  |
| % Mountainous | .092\*\*\*  (.009) | .061\*\*\*  (.010) | .160\*\*\*  (.019) |
|  |  |  |  |
| Border Distance | -.054\*\*\*  (.015) | -.066\*\*\*  (.016) | .052  (.039) |
|  |  |  |  |
| Capital Distance | -.012  (.033) | .023  (.037) | .021  (.073) |
|  |  |  |  |
| Population | .307\*\*\*  (.066) | .396\*\*\*  (.077) | .167  (.154) |
|  |  |  |  |
| N(States) | 348343(75) | 254345(51) | 93998(35) |
| Log Likelihood | -6193.79 | -4708.50 | -1430.09 |
| Wald χ2 | 3887.97\*\*\* | 3173.18\*\*\* | 718.78\*\*\* |

**Table 2:** Predicted Probabilities

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Predicted Probabilities, Full Model | | | Predicted Probabilities, Democracies | | | Predicted Probabilities, Autocracies | | |
|  | 5th percentile | 95th percentile | %∆ | 5th percentile | 95th percentile | %∆ | 5th percentile | 95th percentile | %∆ |
| Population Density | .0036 | .076% | 2011.11% | .003 | .059 | 1866.67% | .0039 | .191 | 4797.44% |
|  |  |  |  |  |  |  |  |  |  |
| GCP per capita |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Exclusion | .0064% | .031% | 384.38% | .0043 | .027 | 527.91% | .027 | .065 | 140.74% |
|  |  |  |  |  |  |  |  |  |  |
| Dominance | .015% | .042% | 180% | .012 | .038 | 216.67% |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| % Mountainous | .013% | .029% | 123.08% | .011 | .019 | 72.73% | .025 | .100 | 300% |
|  |  |  |  |  |  |  |  |  |  |
| Border Distance | .021% | .017% | -19.05% | .016 | .013 | -18.75% |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Population | .0029% | .086% | 2865.52% | .0018 | .095 | 5177.78% |  |  |  |

**Figure 2:** Marginal Effects

Effect of ELF conditioned on Population Density

Effect of ELF conditioned on GCP

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**All States**

**Democracies**

**Autocracies**

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1. Denny and Walter’s estimate, based on PRIO Battle Deaths Data, is that 64% of all civil wars divide along ethnicity. Toft provides an even higher estimate, as she contends that “nearly two-thirds of all armed conflicts include an ethnic component” (2003, 3). [↑](#footnote-ref-1)
2. Sambanis (2008) is one of the only researchers to examine the link between ethnolinguistic fractionalization and *domestic* terrorism. In his model, he finds that ethnic diversity has no effect on the outbreak of terrorist violence; however, his level analysis was country-level, and we predict that domestic terrorism should be triggered by *sub*-nationalfactors. [↑](#footnote-ref-2)
3. An economic endowment refers to “the extraction of natural resources, taxation of local production, conduct of criminal business, or an external patron” while social endowments indicate “shared beliefs, common expectations, norms of behavior, and trust” (Weinstein 2005, 601). [↑](#footnote-ref-3)
4. A significant body of research in ethnic politics has argued that ethnicity is like any social identity-- the form of political behavior manifests depend greatly on societal context (Olzak 1992; Van Cott 2005; Wilkinson 2004; Birnir 2007; Hansen and Hesli 2009). [↑](#footnote-ref-4)
5. Aksoy and Carter distinguish between *within-system* groups, who seek policy change, and *anti-system* groups, who seek to completely overthrow the existing regime. They find that electoral rules impact the formation of *within-system* groups, but have no effect on *anti-system* groups. [↑](#footnote-ref-5)
6. In his work on ethnic rioting in India, Wilkinson (2004) argues that rioting and the resultant violence is triggered by party elites using polarizing anti-minority events to try to trigger a resulting counter-mobilization by the opposing ethnic group. These events *do not* escalate to violence, he contends, if the state is willing to intercede to prevent an escalation along such ethnic lines – something they are more likely to do when political representation is more fractionalized (more political parties are represented in the government), making them more reliant on non-co-ethnic voters. [↑](#footnote-ref-6)
7. Saideman et al. (2002) find that a country’s wealth has no impact on protest behavior. [↑](#footnote-ref-7)
8. In fact, Krueger and Malckova (2003) argue that the more economically advantaged – educated and employed individuals – are most likely to join terrorist organizations. [↑](#footnote-ref-8)
9. Other work does caution that the link between economics and rioting may be less straightforward (Horowitz 2001, Wilkinson 2004). [↑](#footnote-ref-9)
10. The riots would later spread to immigrant enclaves in other French cities. [↑](#footnote-ref-10)
11. Thomas Wagner. “Moderate Muslims in Britain Worry the Iraq War Makes Recruiting Disillusioned Muslim Youth by Extremists Easier,” Associated Press, 27 November 2004. [↑](#footnote-ref-11)
12. Many of our variables are only available from 1990, thus limiting the time span of our analysis. [↑](#footnote-ref-12)
13. The PRIO-GRID cells are high resolution. Each cell measures 0.5 decimal degrees on a side, translating into cells that are roughly 55 x 55 kilometers at the equator and that gradually decreases in size as one moves further from the equator (Tollefsen et al. 2012). The entire PRIO-GRID includes 64,818 terrestrial cells per year. [↑](#footnote-ref-13)
14. Of our total number of cases, 99.45% are 0 while .35% are 1. [↑](#footnote-ref-14)
15. For a detailed overview of the methodological and theoretical drawbacks of the ethnolinguistic fractionalization (ELF) index, see Chandra and Wilkinson (2008). [↑](#footnote-ref-15)
16. India is not the most diverse country in our dataset, but is perhaps one of the most famous cases of differences in regional diversity. [↑](#footnote-ref-16)
17. Alesina and Zhuravskaya’s (2011) ethnic diversity data encompasses 97 countries, with data being collected from either the 2000 census or the census closest to the year 2000. If the national census is not available, they utilize other available demographic information. [↑](#footnote-ref-17)
18. We drop power sharing as the baseline category. [↑](#footnote-ref-18)
19. We visually assess our interaction terms by using Boehmke’s (2006) Grinter data utility. This works by plotting the marginal effect of the primary independent variable on the conditional variable while holding the other variables constant [↑](#footnote-ref-19)
20. Given that PRIO cells are roughly the same size, we might think that population and population density should be highly correlated, making an analysis including both variables problematic. However, population density is calculated based on land area, which may vary from cell to cell. For instance, it is theoretically possible to have two cells with the same overall population, but if one is a coastal area and the other land-locked, they will have two different population density scores. As a result, population and population density are correlated at 0.09. [↑](#footnote-ref-20)