Mapping State Reach:

Territorial Segregation, Cultural Penetration, and the Ethnic Topography of Insurgency [§]

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ABSTRACT

Scholars of civil conflict have long recognized the importance of state strength in the production of civil peace. However, previous empirical investigations have generally focused on the coercive dimensions of state power, obscuring the critical role played by the generation of widespread voluntary compliance with state dictates through the dissemination of normative appeals. In contrast, in this paper we focus on elements of domestic "soft power" – territorial segregation and cultural penetration – that condition state capacity by constraining the reach of state communications. Using newly compiled data on the geographic location of politically relevant ethnic groups, and geo-coded indicators of territorial segregation and cultural penetration, we conduct a global disaggregated analysis of the relationship between territorial segregation, cultural penetration, and civil conflict mobilization at the level of specific ethnic groups. The results reveal that groups living in peripheral regions, especially those with terrain that generates difficulties for the deployment of mass communication infrastructure, face a dramatically heightened likelihood of violent rebellion.

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Introduction

Scholars have long recognized the importance of state strength in maintaining domestic peace (Buhaug 2006; Buhaug, Gates, and Lujala 2009; Collier and Hoeffler 2004; Gleditsch 2007; Fearon and Laitin 2003; Fjelde and De Soysa 2009; Hendrix 2010; Lacina 2006; Thies 2010; Sobek 2010). Efforts to study both the coercive reach and the extractive capacities of states have spawned a number of productive advances in our understanding of the processes underlying the emergence of civil conflict, by focusing on measures aggregated at the national level. However, it is important to recognize that state strength is rarely uniform across territory or across ethnic groups. While much has been learned through such approaches this focus on national aggregates has made it difficult to subject specific mechanisms to empirical testing, especially those mechanisms rooted in mobilizational processes occurring at the level of individual rebel organizations. Especially in weak and developing states, it is frequently the case that lines of state penetration flow along group-based cleavages, successfully integrating some groups into the state-making project, while leaving other groups outside the reach of state coercion, public goods, and communications. The result of this incomplete incorporation is that such groups serve as convenient targets for the mobilization of collective violence against state forces.

Moreover, previous work indicates that this process of incorporation is not accomplished through coercion alone, but rather through the transmission of images, myths, and other symbols designed to characterize state rule as beneficial and just (Warren 2011). That is, in modern states influence is also achieved through the widespread dissemination of political messages through technologies of mass communication (Anderson 1991; Deutsch 1953; Gellner 1983; Mann 1986; Snyder 2000). This form of normative influence, what we might call *domestic soft power*, allows states with more well developed mass media systems to more effectively resist violent divisions. Here we extend this work by disaggregating the

measurement of state cultural penetration --i.e. domestic soft power -- at the level of politically relevant ethnic groups. Combining newly geo-coded estimates of group settlement patterns with geographically disaggregated measures of state penetration and terrain difficulty, we demonstrate that the relationship between geography and state reach is more nuanced than has commonly recognized in the quantitative literature on civil conflict. In doing so, we show that by combining geographically disaggregated data from multiple sources, it is possible not only to increase the accuracy of our measurements but also to gain new insights into the mechanisms underlying the emergence of civil conflict.

As Boulding (1962) recognized, the ability of states to project influence into remote peripheries can be strongly constrained by rough (especially mountainous) terrain. Of course, states are not powerless in the face of territorial disadvantages, especially in the modern age. By installing roads, electrification, and most importantly, technologies of mass communication, states extend their abilities to provide goods and project influence in previously remote locations. In the contemporary world, we find a whole spectrum of states at different stages in this process. In some states, all politically relevant groups are fully incorporated into the state-making project and respect the legitimacy of state dictates, while others find themselves in the midst of incomplete projects of nation-state creation. Studying within-country variation in state capacity is therefore especially important in weak and developing states, which, because of their inability to pacify all, are forced to integrate some while ostracizing others (Wimmer 2002). Indeed, this tension at the heart of nation-state creation has driven much of the conflict dynamics of the post-Cold War world (Wimmer & Min 2006).

II. Territory and Capacity in the Study of Civil Conflict

Many have noted the importance of state capacity in understanding the emergence of armed conflict, both within and between states (Arbetman and Kugler 1998; Benson and Kugler 1998; Buhaug 2006; Buhaug, Gates, and Lujala 2009; Collier and Hoeffler 2004; Gleditsch 2007; Fearon and Laitin 2003; Fjelde and De Soysa 2009; Hendrix 2010; Lacina 2006; Thies 2010; Sobek 2010). However, the approaches to defining and measuring this concept have varied widely. Early treatments tended to rely on measures of economic development (i.e. GDP per capita) measured at the level of national aggregates (Collier and Hoeffler 2004). Fearon and Laitin (2003) in particular have argued that GDP per capita is a useful proxy of a state's capacity to project coercive force. This approach has been criticized for relying on proxies that are too distant from the concept we are seeking to measure. Collier and Hoeffler (2004), for instance, argue that GDP per capita is actually capturing, not state coercive capacities, but rather competition for the labor of rebel recruits. Such difficulties have led others to propose the use of "relative political capacity"—which captures the degree to which tax revenue exceeds what would be expected given a states level of development and natural resources—as a measure of state effectiveness in extracting resources from its citizens (Arbetman and Kugler 1998). This measurement strategy has the advantage of being closer to the concept of state capacity than a pure reliance on GDP, but it nevertheless implicitly assumes that state capacity is evenly distributed across a state's territory.

In contrast, the trend in recent work quantitative work in the civil conflict literature has been towards greater disaggregation of both the independent and dependent variables. Such studies have substantially deepened the quantitative analysis of civil conflict by replacing country-years with units of analysis defined by individual groups, center-periphery dyads, and sub-national geographic units (e.g. Buhaug, Cederman, and Rød 2008; Cederman,

Buhaug, and Rød 2009; Cederman and Girardin 2007; Cederman, Girardin, and Gleditsch 2010; Cederman, Cunningham, Gleditsch, and Salehyan 2009; Fearon, Kasara, and Laitin 2007; Hegre and Raleigh 2007; Urdal 2008; Weidmann 2009; Wimmer, Cederman, and Min 2009; Wimmer and Min 2009). In particular, the recent efforts of Wucherpfennig et al. (2011) and Cederman, Gleditsch, and Weidmann (2011) have pioneered the use of geo-coded polygons of group settlement patterns. This approach allows researchers to connect group-level processes to direct measurement on a number of dimensions that have previously been impermeable to direct observation. In the next section, we show how such disaggregated approaches can provide new insights into the study of state capacity and domestic soft power.

III. State Strength as Cultural Penetration

Sate capacity, as we use the term here, can be defined by as a state's ability to both project coercive force where needed in order to ensure the security of its citizens, while at the same time, generating sufficient nationalist sentiments so as to render internal coercion largely unnecessary. As Wintrobe (1998) argues, state power exists at the intersection of "loyalty" and "repression." Different theories of state strength have emphasized these two dimensions to different degrees. Some theorists focus on the coercive instruments of surveillance, deterrence, and outright force in the development of effective state institutions (Herbst 2000; Tilly 2003). Others emphasize the use of public goods to gain support from politically relevant communities (Azam 1995; Bueno de Mesquita et al. 2002; Gandhi and Przeworski 2006) or the broader development of sympathies and attachments that lead citizens to willingly sacrifice for an imagined "nation" (Anderson 1991; Gellner 1983; Levy 1988; 2006).

Scott (2009) reminds us that there is frequently substantial resistance against state encroachment on the part of peripheral populations. Seen from this perspective, state

capacity is not a static quantity, but rather a continual process of *state-making*. At a basic level this process of state-making is fundamentally corporeal, as it has always involved the aggregation and coordination of human physical activities. Successful state-making projects are constituted by a positive feedback loop, in which greater provision of internal order allows greater efficiency in extracting the products of human labor, which in turn allows for even greater levels of order and stability. In the contemporary world, states exist at various stages along this spectrum. Some states have successfully incorporated all politically relevant groups into the state-making project, while others find themselves in the midst of incomplete projects of nation-state creation.

Many have recognized that this process of state making is powerfully constrained by the forces of geography (Buhaug 2010; Buhuag and Gates 2002; Buhaug, Gates, and Lujala 2009; Buhuag and Rød 2006; Lemke 1995; Raleigh and Hegre 2009; Weidmann 2009). As Boulding (1962) recognized, state strength must extend itself over physical space and is therefore subject to a "loss of strength gradient" in which capacity is a negative function of distance from the state's center. In extending state power, the cost of such efforts is not simply a direct function of physical distance, but rather a function of the cost of projecting influence. Rough, especially mountainous, terrain dramatically increases the cost of transportation, communication, and all variety of physical services (Lemke 1995). As a result, states face greater costs in extending their control to groups that are settled in remote terrain. Especially in weak and developing states, this often results in an uneven extension of state influence and the provision of state goods (Kalyvas 2006).

Moreover, it is important to remember that state influence is achieved, not just through material penetration, but also through cultural penetration, and the production of voluntary compliance. As a result, effective state capacity requires not just physical access, but *communicative* access, to the relevant populations (see Warren 2011). In addition to

constraints on the material and coercive dimensions of state influence, rough terrain also generates substantial constraints on mass communication, and thus on the cultural penetration of state legitimacy.

Furthermore, group settlement patterns tend to be constrained by these same basic geographic forces. As a result of this combination of partially segregated settlement patterns and difficulties in the deployment of mass communication infrastructure, the reach of state cultural penetration tends to be strongly constrained along group lines. We should therefore expect that groups that find themselves outside this reach will face lower costs in mobilization of rebellion against the state. This implies further that the arrival of mass communication technology will dramatically alter the implications of territoriality for ethnic groups. Groups with territorially segregated settlement patterns should be less likely to receive messages transmitted through national-level mass media systems. Moreover, groups living in regions areas of where the shape of the mountainous terrain generates difficulties for line-of-sight communications present particularly high costs for the deployment of broadcast media -- i.e. television and radio -- precisely those technologies which have been most successful in penetrating peripheral regions of weak and developing states.

Drawing on the theory sketched above, we thus have the following main hypotheses:

1. Groups living in countries with stronger mass media systems will be less likely to engage in anti-state collective violence.

2. Territorially segregated groups will be less likely to experience the pacifying effects of strong mass media systems.

3. Territorially segregated groups living in areas where terrain creates high costs for mass media infrastructure will be more likely to engage in anti-state collective violence than other territorially segregated groups.

IV. Data and Methods

Testing these hypothesis requires measures of three key concepts: national-level mass media strength, territorial segregation, and the terrain-based costs of deploying broadcast communication technologies (i.e. barriers to lines-of-sight). Following previous work, the first factor is measured using the ***Broadcast Density Index*** (BDI) , which is equal to the per capita sum of radio and television receivers, measured on a country-year basis (Warren 2011).

To better capture within-country variation in state communicative reach, we combine newly geo-coded estimates of group settlement patterns with geographically disaggregated measures of terrain difficulty. In doing so, our first task is to define the relevant set of ethno-nationalist groups from which challenges against the state could be launched. Here we draw on the Ethnic Power Relations (EPR) data set, which identifies all politically relevant ethnic groups around the world from 1946-2005 (Wimmer, Cederman, and Min 2009). An ethnic group is defined as politically relevant if at least on significant political actor claims to represent its interests in national politics or if it is subject to systematic state-based discrimination. These data allows me to exclude from the analysis groups that hold dominant political positions in their home countries as such populations are unlikely to stage rebellions against themselves.

These data also allow us to define group-based measures of territorial segregation and the cost of broadcast penetration. To code territorial segregation, we rely on the GeoEPR dataset, which provides a comprehensive coding of the settlement patterns of all EPR groups

with geographically circumscribed group boundaries (Wucherpfennig et al. 2011). In order to qualify as territorially segregated, a majority of the group's members must live within a circumscribed region of the country. Each territorially segregated group's settlement pattern is characterized as a geo-referenced multi-polygon. In an advance over previous approaches, the dataset also utilizes expert surveys to record changes in group settlement patterns over time.

To measure the cost of broadcast penetration at the level of individual ethnic groups we rely on the ***Broadcast Cost Index*** (BCI), which seeks to capture line-of-sight difficulties on the basis of a global grid of 10 kilometer squares.[1] The index is coded for each grid square by first drawing a circle around the focal cell with a radius of 150 km, which corresponds to the transmission range of high-powered FM signals under ideal conditions (FCC 2010). Drawing on the UN's Gridded Population of the World dataset, we sum the number of people living within this radius. Call this value $\boldsymbol{P_{total}}$. We then separately sum the number of people within this radius in cells that can be "seen" from the focal cell, meaning that there are no mountainous barriers to line-of-sight between the two locations. Call this value $\boldsymbol{P_{sight}}$. The cost index for each grid cell is then given by:

$$BCI = \frac{log(P_{total}) - log(P_{sight})}{log(P_{total})}$$

reflecting the logic that greater proportionate differences between $\boldsymbol{P_{total}}$ and $\boldsymbol{P_{sight}}$ are indicative of areas where it will be more difficult to achieve cost-effective deployment of broadcast infrastructure.

[1] The line-of-sight maps giving values of ***P****total* and ***P****sight* for each grid cell were generated by Sebastian Schutte, who generously allowed me early access his data. See Schutte (2011).

To transform these values into a group-level variable, a given group's settlement polygon is overlaid on this grid, marking any grid squares whose centroid is within the group's boundaries. The BCI is then averaged across these cells to generate a group average, $\boldsymbol{BCI_{group}}$.[2] An analogous procedure also allows me generate a country average, $\boldsymbol{BCI_{country}}$. To generate the group-level ***Broadcast Cost Ratio*** (BCR), each group's relative cost of broadcast accessibility is then measured as the logged ratio of the group average to the country average:

$$BCR = log\left(\frac{BCI_{group}}{BCI_{country}}\right)$$

This generates a variable which is zero when the group's broadcast accessibility is equal to the country average, positive when the group faces higher barriers than the country as a whole, and negative when the group faces lower barriers than the country as a whole. In this way, the *Broadcast Cost Ratio* seeks to capture the intuition that certain regions of a country will be dramatically less likely to receive broadcast messages, due to the high costs of providing mass communication infrastructure in regions where the population has a greater tendency to be 'hidden' behind mountainous obstructions.[3]

The GeoEPR settlement polygons also allow me to define geographically specific measures of other quantities at the group level as control variables. To ensure that the broadcast accessibility measure is not merely serving as a proxy for high-elevation regions that create difficulties for physical transportation, we measure the (logged) ***Average Elevation*** and ***Maximum Elevation*** within each group's polygon. To ensure that BCR is not merely serving as a proxy for urban wealth and population, we follow the efforts of Brian

[2] For groups which are not territorially segregated, and which therefore lack a well-defined settlement region, this value is set to the country average.
[3] As Briggs and Burke (2002) note, the line-of-sight barriers created by mountainous terrain represent the single most powerful barrier to the successful transmission of electromagnetic signals across space. See also Mughan and Gunther (2000).

Min (2008; 2009) in using satellite recorded images of nighttime light emissions to capture the degree of ***Urbanization*** within a settlement region as the (logged) average value of the pixel brightness recorded for each cell. Prior theory also leads us to expect that groups with greater size and greater power will find it easier to resist state encroachment. To capture this dynamic, we rely on the EPR dataset to measure each group's ***Population***, each group's ***Size*** (the group's population divided by the total country population), and each group's ***Relative Power*** (the group's population divided by the total population of the ethnic groups included in the government). We also include a dummy variable, ***Inclusion in Government***, which equals 1 if member's of the group in question are represented as junior or senior partners in the central government

In the results reported below, we also control for a number of country-level factors that have figured prominently in the quantitative literature on civil conflict.[4] ***GDP Per Capita*** is included as a measure of aggregate economic development. ***Democracy*** is coded using the "Scalar Index of Polities" from Gates et. al (2006). ***Land Area***[5], ***Population***, and ***%Mountainous*** are included as measures of the aggregate difficulties faced by governments seeking to control large populations across broad and difficult terrain. As in most previously reported models, these variables are log-transformed because they are expected to have diminishing effects as they grow larger.[6] ***Oil Exporter*** is a dichotomous indicator which equals 1 if a country derives at least one-third of its export revenues from fossil fuels. Finally, to capture the effects country-level ethnolinguistic diversity, we include a count of the ***Number of Languages*** spoken within the country, along with a measure of ***Linguistic Dominance***, which records the proportion of the country's population which speaks its most common language.

[4] Unless otherwise noted, data for these variables were taken from Fearon and Laitin (2003) and Sambanis (2004).
[5] Data taken from Banks (2002).
[6] See Fearon and Laitin (2003) and Sambanis (2004).

The dependant variable is coded by combining information on non-state actors from Cunningham, Gleditsch, and Salehyan (2009) with the group definitions from EPR (see Cederman, Gleditsch, and Weidmann 2011). ***Conflict Onset*** equals 1 for any group-year in which a rebel organization claiming to represent the group launches an anti-state conflict in which a significant number of the group's members participate, and which causes at least 25 battle deaths. This results in a dataset of 24,200 group-years, in which 167 instances of conflict onset are observed. We also utilize natural cubic splines of peace years to control for duration dependence, along with standard errors clustered by country.

V. Results

The results are presented sequentially in Table 1. Model 1 is a baseline specification which includes the control variables measured at both the group and state levels, along with the *Broadcast Density Index*. Model 2 adds the dichotomous indicator of *Territorial Segregation*, and Model 3 adds a multiplicative interaction term between these two factors, *Territory * BDI*. Model 4 further conditions the effects of group territoriality by including a second interaction term, *Territory * BCR*. The results derived from these models are strongly supportive of Hypotheses 1-3. The statistically significant ($p = 0.007$) and negative coefficient for the *Broadcast Density Index* in Model 4 indicates that groups living in countries with strong mass media systems are far less likely to engage in anti-state collective violence, provided that they are not subject to territorial segregation. At the same time, the statistically significant ($p = 0.012$) and positive coefficient for *Territory * BDI* indicates that this pacifying effect of broadcast density is strongly attenuated for territorially segregated groups. Furthermore, the statistically significant ($p = 0.013$) and positive coefficient for *Territory * BCR* indicates that these effects are further conditioned by the precise shape of the territory on which the group is settled.

Such effects can be more easily visualized through simulated probabilities of conflict onset, as shown in Figure 1. These probabilities are generated by systematically varying the factors of interest, while holding all other factors constant at their means. As can be seen in the plot, segregated groups living in territories that pose relatively greater barriers to the penetration of broadcast technologies are substantially more likely to engage in anti-state violence, whereas groups living in areas that pose lower barriers to broadcast technologies behave similarly to groups that lack territorial segregation altogether.

To check the robustness of these results, Model 5 adds additional controls for properties of the group's settlement that could be confounding the effects described above: *Average Elevation*, *Maximum Elevation*, and *Urbanization*. As can be seen, while urbanization has a significant negative effect ($p = 0.001$), the alternative measures of mountainous terrain are far from significance. Moreover, the statistical and substantive significance of *Territory*, *BDI*, *BCR*, and the associated interaction terms are unchanged by the addition of these controls. This represents strong evidence that our measure of line-of-sight accessibility is not simply serving as a proxy for the presence of high elevation terrain or the absence of urban development. Rather, it is specifically those areas in which the terrain that generates difficulties for broadcast communication technologies that are most likely to witness the mobilization of anti-state collective violence.

VI. Conclusion

The results presented here, while certainly not conclusive, are strongly supportive of the group-based account of state capacity articulated above. The evidence indicates that state strength is not uniform across territory or across ethnic groups. Especially in weak and developing states, it is frequently the case that lines of state penetration flow along group-based cleavages, successfully integrating some groups into the state-making project, while

leaving other groups outside the reach of state coercion, taxation, and cultural penetration. The result of this incomplete incorporation is that such groups find it easier to launch violent attacks against the state.

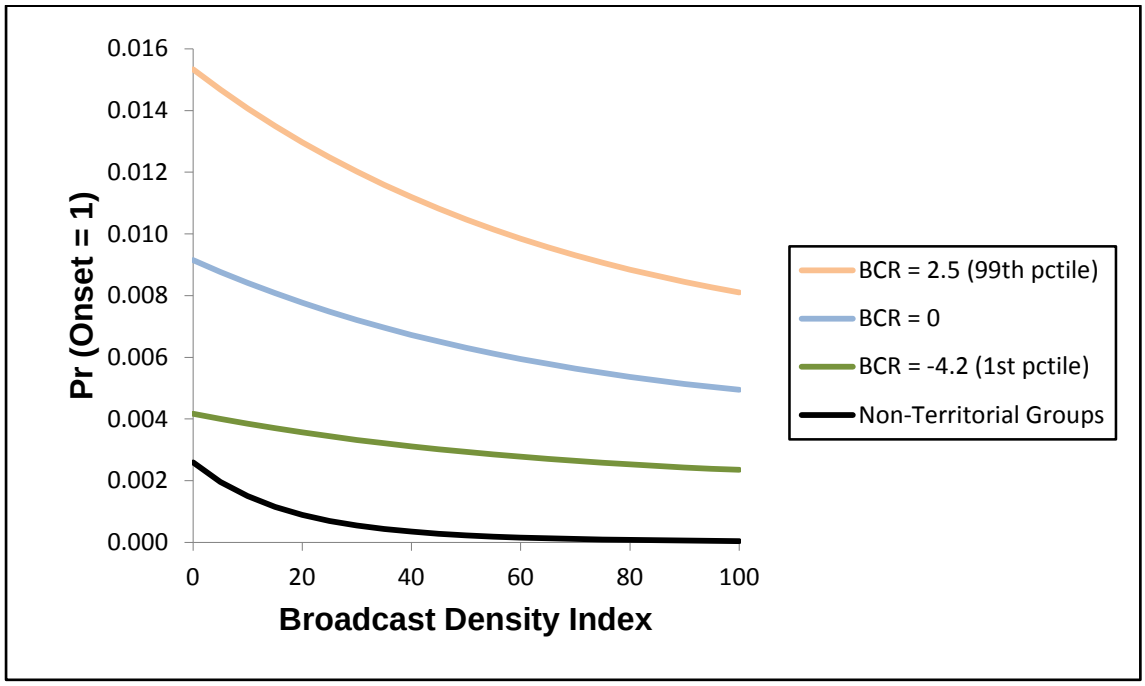
Furthermore, the strategy of combining geo-coded estimates of group settlement patterns with geographically disaggregated data on terrain difficulty to produce measures at the level of individual ethno-national groups, has been shown to provide valuable insights into the mechanisms underlying the generation of civil conflicts and improved predictive leverage over when and where such conflicts are likely to occur. The evidence is clear: if we wish to generate accurate predictions of conflict likelihood, national aggregates will be insufficient. This also suggests that the strategy pursued here may be useful for investigating a number of questions concerning quantities that have previously been difficult to directly observe at the group level. In future research, the models presented here could be extended to consider the impact of a wide range of state-making tools, including the provision of roads, electrification, and other public goods. The hope is that by layering findings from multiple sources and multiple levels of aggregation we can begin to more effectively disentangle the complex processes underlying the generation of ethno-national conflict.

Table 1.

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
Broadcast Density Index (BDI)	-0.0152*	-0.0157*	-0.0501***	-0.0502***	-0.0489***
	(0.0082)	(0.0080)	(0.0188)	(0.0189)	(0.0183)
Group-Level Factors					
Territory		0.9334***	0.3710	0.3809	1.5358
		(0.3209)	(0.3504)	(0.3496)	(1.1876)
Territory x BDI			0.0375**	0.0374**	0.0416**
			(0.0166)	(0.0166)	(0.0166)
Territory x BCR				0.1925***	0.1933**
				(0.0703)	(0.0782)
Territory x Avg. Elevation					-0.3248
					(0.2182)
Territory x Max Elevation					0.2615
					(0.2570)
Territory x Urbanization					-0.8287***
					(0.2995)
Inclusion in Government	-1.1608***	-1.2637***	-1.2720***	-1.2255***	-1.1920***
	(0.3240)	(0.3209)	(0.3127)	(0.3068)	(0.3195)
Group Size	-3.0103	-4.1565*	-4.2812*	-4.2806*	-5.0936**
	(2.3589)	(2.3629)	(2.3309)	(2.3165)	(2.3384)
Group Size^2	2.8437	3.9670*	3.9799*	3.9019*	4.1420**
	(2.0686)	(2.0716)	(2.0386)	(2.0543)	(2.0299)
Relative Power	2.1164**	2.0870**	2.1581**	2.2332**	2.7653***
	(1.0075)	(0.9625)	(0.9552)	(0.9165)	(0.8901)
Group Population	2.7545**	2.5345*	2.6746*	2.6185*	2.4105*
	(1.3312)	(1.3987)	(1.4096)	(1.3717)	(1.3119)
Country-Level Factors					
GDP per capita	0.2976*	0.3183*	0.3447*	0.3494**	0.3249*
	(0.1790)	(0.1716)	(0.1773)	(0.1755)	(0.1694)
Land Area	-0.1578	-0.2112*	-0.2264*	-0.2197*	-0.2807**
	(0.1083)	(0.1151)	(0.1196)	(0.1207)	(0.1302)
Total Population	0.0627	0.0477	0.0527	0.0334	0.0714
	(0.1249)	(0.1258)	(0.1251)	(0.1251)	(0.1297)
% Mountainous	0.1742	0.2141*	0.1919	0.1934	0.2005
	(0.1243)	(0.1238)	(0.1228)	(0.1205)	(0.1378)
Oil Exporter	0.7869***	0.8788***	0.8978***	0.9132***	0.9296***
	(0.3008)	(0.2975)	(0.2979)	(0.2964)	(0.2792)
Democracy	-0.1563	-0.0654	-0.1006	-0.1388	-0.0811
	(0.3859)	(0.3752)	(0.3743)	(0.3770)	(0.3781)
Linguistic Dominance	-1.7937**	-1.8750***	-1.8596**	-1.9876***	-2.0522***
	(0.7310)	(0.6979)	(0.7234)	(0.7228)	(0.7332)
Number of Languages	0.0349**	0.0340**	0.0353***	0.0342**	0.0308**
	(0.0138)	(0.0134)	(0.0133)	(0.0134)	(0.0128)
Constant	-9.4247***	-9.9065***	-9.7250***	-9.3059***	-9.7157***
	(2.8006)	(2.7094)	(2.7095)	(2.6801)	(2.7078)
Observations	24,228	24,179	24,179	24,032	23,100

Note: Robust standard errors in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$

Figure 1.



Note: Simulated probabilities of conflict onset based on coefficients and standard errors from Model 5, with all other factors held constant at their means.

References

Agnew, John, Thomas W Gillespie, Jorge Gonzalez, Brian Min. 2008. “Baghdad Nights: Evaluating the US Military Surge Using Night Light Signatures”. Environment and Planning A. 40(10)2285–2295.

Anderson, Benedict. 1991. Imagined Communities: Reflections on the Origin and Spread of Nationalism. 2nd ed. New York: Verso.

Arbetman, M., and J. Kugler, eds. 1998. Political capacity and economic behavior. Boulder, CO: Westview Press.

Azam, J. P. 1995. How to pay for the peace? A theoretical framework with references to African countries. Public Choice 83(1–2): 173–184.

Bates, R., A. Greif, and S. Sing. 2002. Organizing violence. Journal of Conflict Resolution 46(5): 599–628.

Benson, M., and J. Kugler. 1998. Power parity, democracy, and the severity of internal violence. Journal of Conflict Resolution 42(2): 196–209.

Boulding, Kenneth, 1962. Conflict and Defense. New York: Harper & Row.

Buhaug, Halvard. 2006. Rebel capability and rebel objective in civil war. Journal of Peace Research 43(6): 691–708.

Buhaug, Halvard, 2010. 'Dude, Where's My Conflict? LSG, Relative Strength, and the Location of Civil War', Conflict Management and Peace Science 27(2): 107–128.

Buhaug, Halvard, and Scott Gates. 2002. "The Geography of Civil War." Journal of Peace Research 39 (4):417-33.

Buhaug, Halvard, Scott Gates, Päivi Lujala. 2009. "Geography, Rebel Capability, and the Duration of Civil Conflict." Journal of Conflict Resolution 53 (4): 544-569.

Buhaug, Halvard, and Päivi Lujala. 2005. "Accounting for Scale: Measuring Geography in Quantitative Studies of Civil War." Political Geography 24:399-418.

Buhaug, Halvard & Jan Ketil Rød, 2006. 'Local Determinants of African Civil Wars, 1970-2001', Political Geography 25(3): 315–335.

Buhaug, Halvard, Lars-Erik Cederman, and Jan Ketil Rød. 2008. Disaggregating ethno-nationalist civil wars: A dyadic test of exclusion theory. International Organization 62 (3): 531.

Bueno de Mesquita, B., A. Smith, R. Siverson, and J. D. Morrow. 2003. The logic of political survival. Cambridge, MA; London, UK: MIT Press.

Cederman, Lars-Erik, Halvard Buhaug, and Jan Ketil Rød. 2009. Ethno-nationalist dyads and civil war: A GIS-based analysis. Journal of Conflict Resolution 53 (4): 496-525.

Cederman, Lars-Erik and Luc Girardin. 2007. Beyond fractionalization: Mapping ethnicity onto nationalist insurgencies. American Political Science Review 101 (1): 173-85.

Cederman, Lars-Erik, Luc Girardin, and Kristian Skrede Gleditsch. 2010. Ethno-nationalist triads: Assessing the influence of kin groups on civil wars. World Politics 61: 403-437

Cedermna, Lars-Erik, Kristian Gleditsch, and Nils Weidmann. 2011. "Horizontal Inequalities and Ethno-Nationalist Civil War." Forthcoming, *American Political Science Review*.

Cederman, Lars-Erik, Andreas Wimmer, and Brian Min. 2010. Why do ethnic groups rebel? World Politics 62 (1).

Collier, P., and A. Hoeffler. 2004. Greed and grievance in civil war. Oxford Economic Papers 56(4): 563–595.

Cunningham, David, E. Kristian Skrede Gleditsch, and Idean Salehyan. 2009. It takes two: A dyadic analysis of civil war duration and outcome. Journal of Conflict Resolution 53 (4): 570-97.

De Rouen, K. R., and D. Sobek. 2004. The dynamics of civil war duration and outcome. Journal of Peace Research 41(3): 303–320.

Deutsch, Karl W. 1953. *Nationalism and Social Communication: An Inquiry into the Foundations of Nationalism*. MIT Press.

Ellingsen, Tanja. 2000. "Colorful Community or Ethnic Witches' Brew: Multiethnicity and Domestic Conflict During and After the Cold War." *Journal of Conflict Resolution* 44 (2): 228-249.

Fearon, J. D., and D. D. Laitin. 2003. Ethnicity, insurgency and civil war. American Political Science Review 97(1): 75–90.

Fjelde, Hanne and Indra De Soysa. 2009. Coercion, co-optation, or cooperation?: State capacity and the risk of civil war, 1961-2004. Conflict Management and Peace Science 26 (1): 5-25.

Fukuyama, F. 2004. State-building: Governance and world order in the 21st century. New York: Cornell University Press.

Gates, Scott, Håvard Hegre, Mark P. Jones, Håvard Strand. 2006. "Institutional Inconsistency and Political Instability: Polity Duration, 1800–2000." *American Journal of Political Science* 50: 893–908.

Gandhi, J., and A. Przeworski. 2006. Cooperation, cooptation and rebellion. Economics and Politics 18(1): 1–26.

Gellner, Ernest. 1983. Nations and Nationalism. Ithaca, NY: Cornell University Press.

Gleditsch, Kristian Skrede. 2007. "Transnational Dimensions of Civil War." *Journal of Peace Research* 44 (3): 293-309.

Gould, Roger V. 1995. *Insurgent Identities: Class, Community, and Protest in Paris from 1848 to the Commune*. University of Chicago Press.

Hallin, Daniel C. and Paolo Mancini. 2004. *Comparing Media Systems: Three Models of Media and Politics*. Cambridge University Press.

Hegre, H., S. Gates, N. P. Gleditsch, and T. Ellingsen. 2001. Toward a democratic civil peace? Democracy, political change and civil war 1816–1992. American Political Science Review 95(1): 33–48.

Hegre, H., and N. Sambanis. 2006. Sensitivity analysis of empirical results on civil war onset. Conflict Management and Peace Science 50(4): 341–352.

Hendrix, Cullen S. 2010. "Measuring state capacity: Theoretical and empirical implications for the study of civil conflict." *Journal of Peace Research* (3): 273-285.

Herbst, Jeffrey. 2000. States and Power in Africa: Comparative Lessons in Authority and Control. Princeton, NJ: Princeton University Press.

Kalyvas, Stathis N. 2003. "The Ontology of 'Political Violence: Action and Identity in Civil Wars." *Perspectives on Politics* 1 (3): 475-494.

Kalyvas, Stathis, 2006. The Logic of Violence in Civil War. Cambridge: Cambrudge University Press.

Kern, Holger Lutz and Jens Hainmueller. 2009. "Opium for the Masses: How Foreign Media Can Stabilize Authoritarian Regimes." *Political Analysis* 17: 377–399.

King, Gary, Michael Tomz, and Jason Wittenberg. 2000. "Making the Most of Statistical Analyses: Improving Interpretation and Presentation." *American Journal of Political Science* 44 (2): 347–61.

Krasner, Stephen D. 1999. Sovereignty: organized hypocrisy. Princeton, NJ: Princeton University Press.

Lacina, B. 2006. Explaining the severity of civil wars. Journal of Conflict Resolution 50(2): 276–289.

Lemke, Douglas, 1995. 'The Tyranny of Distance: Redefining Relevant Dyads', International Interactions 21(1): 23–38.

Levi, M. 1988. Of rule and revenue. Berkley: University of California Press.

Levi, M. 2006. Why we need a new theory of government. Perspectives on Politics 4(1): 5–19.

Mann, Michael. 1986. *The Sources of Social Power: Volume 1, A History of Power from the Beginning to AD 1760*. Cambridge University Press.

Min, Brian. 2008. "Democracy and Light: Electoral Accountability and the Provision of Public Goods." Unpublished manuscript. University of California, Los Angeles.

Min, Brian. 2009. "Distributing Power: Public Service Provision to the Poor in India." Unpublished manuscript. University of California, Los Angeles.

North, D. C. 1990. Institutions, Institutional Change, and Economic Performance. London: Cambridge University Press.

Organski, A. F. K., and J. Kugler. 1980. The war ledger. Chicago: Chicago University Press.

Raleigh, Clionadh & Håvard Hegre, 2009. 'Population Size, Concentration, and Civil War: A Geographically Disaggregated Analysis', Political Geography 28(4): 224–238.

Reynal-Querol, Marta. 2002. "Ethnicity, Political Systems, and Civil Wars." *Journal of Conflict Resolution* 46 (1): 29-54.

Schutte, Sebastian. 2011. "Beyond Elevation: Modeling State Reach and Geographic Accessibility." Unpublished manuscript. ETH Zurich. Paper is available at: http://sebastianschutte.net/publications/. Data is available at: http://sebastianschutte.net/datasets/line-of-sight/.

Scott, James C. 2009. *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. Yale University Press.

Smith, Rogers. 2003. *Stories of Peoplehood: The Politics and Morals of Political Membership*. Cambridge University Press.

Snyder, Jack. 2000. *From Voting to Violence: Democratization and Nationalist Conflict*. New York: W. W. Norton & Company.

Socioeconomic Data and Applications Center (SEDAC). 2005. Gridded Population of the World. SEDAC, Palisades, NY 2005

Thies, Cameron G. 2010. "Of rulers, rebels, and revenue: State capacity, civil war onset, and primary commodities." *Journal of Peace Research* 47 (3): 321-332.

Tilly, Charles. 1992. *Coercion, capital, and European states, AD 990-1992*. Blackwell Publishing.

Tilly, C. 2003. The politics of collective violence. Cambridge: Cambridge University Press.

Tomz, Michael, Jason Wittenberg, and Gary King. 2003. CLARIFY: Software for Interpreting and Presenting Statistical Results. Version 2.1. Stanford University, University of Wisconsin, and Harvard University. January 5. Available at http://gking.harvard.edu/

Urdal, Henrik. 2008. Population, resources, and political violence: A subnational study of India, 1956-2002. Journal of Conflict Resolution 52 (4): 590-617.

Warren, T. Camber. 2011. "Communicating Strength: Mass Media, Civil War, and the Production of Domestic Soft Power." Unpublished manuscript. Available at: http://www.camberwarren.net/

Weidmann, Nils B. 2009. Geography as motivation and opportunity: Group concentration and ethnic conflict. Journal of Conflict Resolution 53 (4): 526-543.

Weidmann, Nils B., Jan Ketil Rød, and Lars-Erik Cederman. 2010. Representing Groups in Space: A New Dataset. Journal of Peace Research 47 (4).

Weinstein, Jeremy M. 2005. "Resources and the Information Problem in Rebel Recruitment." *Journal of Conflict Resolution* 49 (4): 598-624.

Wimmer, Andreas. 2002. *Nationalist Exclusion and Ethnic Conflicts: Shadows of Modernity*. Cambridge: Cambridge University Press.

Wimmer, Andreas, Lars-Erik Cederman, and Brian Min. 2009. Ethnic politics and armed conflict: A configurational analysis of a new global data set. American Sociological Review 74 (2): 316-337.

Wimmer, Andreas, and Brian Min. 2006. "From Empire to Nation-State. Explaining Wars in the Modern World, 1816–2001." American Sociological Review 71, no. 6: 867–97.

Wintrobe, Ronald, 1998. The Political Economy of Dictatorship. Cambridge: Cambridge University Press.

Wucherpfennig, Julian, Nils B. Weidmann, Luc Girardin, Lars-Erik Cederman and Andreas Wimmer. 2011. Politically Relevant Ethnic Groups across Space and Time: Introducing the GeoEPR Dataset. Forthcoming, *Conflict Management and Peace Science*.