Explaining Violent Intra-Ethnic Conflict: Group Fragmentation in the Shadow of State Power

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Abstract
Despite significant advances in the disaggregation of the study of civil conflict and intra-ethnic violence, intra-ethnic violence remains understudied. In this article, we present the first systematic, cross-national analysis of the conditions that promote violent, fragmentary conflict within politically active ethnic minorities. We propose a model of intra-ethnic conflict in which collective violence is produced by the interaction between subgroup entrepreneurs and the suppressive actions of the state. This two-level model predicts a curvilinear relationship between the relative size of an ethnic minority and its probability of experiencing large-scale intra-ethnic conflict. Additional hypotheses based on the proposed causal mechanism are also posited. These hypotheses are tested with data drawn from a global sample of politically active ethnic minorities, for the period 1990 through 2006, using a combination of parametric and semi-parametric regression techniques. The results strongly confirm the predicted curvilinear relationship while also demonstrating that the specific shape of this relationship shifts in predictable ways under varying social and political contexts.

Keywords
political violence, ethnic conflict, group size

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In recent years, political science has produced a rich literature examining the causes and characteristics of violence *between* ethnic groups (Horowitz 1985; Varshney 2001; Wilkinson 2004). However, a second type of conflict—the emergence of violent fragmentation *within* an ethnic group—has received comparatively little attention. Despite the notable occurrence of coethnic factional violence in several high-profile conflicts, including between Hamas and Fatah in the Palestinian territories and between the Kurdish Democratic Party (KDP) and the Patriotic Union of Kurdistan (PUK) factions in Iraqi Kurdistan, very little is known about the general conditions under which such violent intra-ethnic struggles become more likely. That is, why do some groups maintain internal peace and coherence despite enormous external pressures, while other groups erupt into violent internal fragmentation between warring factions?

A better understanding of these conditions would advance our understanding of conflict dynamics in at least three ways. First, intra-ethnic conflict is an important phenomenon in its own right, generating thousands of deaths and displacements throughout the world. Second, conflict within groups is intimately connected to conflict between groups. Intragroup dynamics such as extremist outbidding and flanking have frequently been noted as some of the largest obstacles to domestic peace in divided societies (Horowitz 1985). A complete understanding of ethnic conflict processes will thus be impossible without a better grasp of the forces generating intra-ethnic cohesion and fragmentation. Finally, the study of intra-ethnic conflict provides a useful perspective on the nature of group identities, highlighting the mutable character of group boundaries and the need for theory that moves beyond assumptions of fixed cleavages.

To the best of our knowledge, this is the first study to systematically examine the causes of intragroup violence across a global sample of both conflictual and peaceful ethnic groups. Although a fully general account of the conditions favoring group cohesion and fragmentation is beyond the scope of this article, as a first step we develop a simple model of the cross-pressures acting on the production of internal violence within *politically relevant ethnic minorities*. We focus on this subcategory of ethnic groups—who are politically mobilized but societally subordinated in terms of demographic weight—as we believe this category faces a common set of incentives and pressures that allow for productive generalizations across groups and across countries. Drawing on previous models of politicized ethnic groups as instrumental providers of "group goods," we argue that such groups find themselves subject to cross pressures both from below and from above. From below, the group must contend with subgroup entrepreneurs who face strong incentives to mobilize factional violence, either to secure their own leadership positions or to seize a greater portion of the group's resources. From above, the group must contend with state forces that face strong incentives to buy off or suppress this factional violence, especially if it threatens security in the society at large.

We then show that this account generates the counterintuitive prediction that a group's relative size will have a curvilinear relationship to its likelihood of experiencing internal violence. Subgroup entrepreneurs in relatively small minority groups face an absence of *internal opportunity* for the mobilization of intragroup violence due to the suppressive actions of the group's leadership, whereas subgroup entrepreneurs in

relatively large minority groups face an absence of *external opportunity* for the mobilization of intragroup violence due to the suppressive actions of the state. It is therefore in the middle ranges, where both of these pacifying forces are at their weakest, that we should expect the greatest proportion of internal violence to be observed.

The remainder of the article proceeds as follows. In the second section, we review the current literature on civil conflict, ethnic violence, and group fragmentation. In the third section, we develop our account of intra-ethnic violence within politicized minorities; and in the fourth section, we derive a number of observable implications linking group size, demographic characteristics, and institutional constraints to the likelihood of intra-ethnic conflict. We then test these hypotheses with data drawn from a global sample of politically active ethnic minorities, for the period 1990 through 2006, using a combination of parametric and semi-parametric regression techniques. Finally, we conclude by discussing the broader implications of this account for the study of collective violence in hierarchical settings.

Progress in the Study of Civil Conflict

In the past decade, great strides have been made in the quality of cross-national analyses of civil conflict. As opposed to earlier studies that generally aggregated the units of analysis into pooled country-years (Collier and Hoeffler 2004; Ellingsen 2000; Fearon and Laitin 2003), the trend in recent work has been toward 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 subnational geographic units (e.g., Cederman and Girardin 2007; Buhaug, Cederman, and Rød 2008; Fearon, kasara, and Laitin 2007; Urdal 2008; Cederman, Buhaug, and Rød 2009; Cunningham, Gleditsch, and Salehyan 2009; Hegre and Raleigh 2009; Weidmann 2009; Wimmer, Cederman, and Min 2009; Cederman, Girardin, and Gleditsch 2010; Cederman, Gleditsch, and Weidmann 2011; Asal, Brown, and Dalton 2012; Fjelde and Nilsson 2012; Staniland 2012). However, while this literature has greatly expanded our understanding of the micro-level processes that underlie the emergence of civil conflict, the project of disaggregation is not yet complete, as analysis of intra-ethnic violence remains almost entirely absent from the cross-national quantitative literature on civil conflict.[1]

This stands in stark contrast to the qualitative literature on civil conflict, which has long recognized that intra-ethnic dynamics are a critical component of the processes that generate broader forms of collective violence. As Jinadu (2004) notes,

> ethnic groups are oftentimes polarized among themselves, over, for example, strategies to pursue in competitive situations with other ethnic groups, over leadership succession, all leading to fractures and, in many cases, the emergence of subethnic or even newly constructed ethnic groups within them. We, therefore, need to study intra-ethnic conflict, as a micro-level of analysis within the larger kaleidoscope of inter-ethnic relations and conflicts. (p. 8)

This literature has developed several key insights into the nature of ethnic groups and the conflicts they experience. First, ethnic groups are generally not internally homogeneous and cannot be expected to have uniformly distributed political preferences (see Kalyvas 2003). As Akinteye (1999) shows in his study of the Igbo-Ora in Nigeria, groups are frequently beset by crosscutting political and economic cleavages that can form the basis for the mobilization of collective violence at the subgroup level. Such internal cleavages may be based on more narrow ethnic markers, but they may also be rooted in clan or tribe-based loyalties that do not map neatly onto ethnic boundaries, as Riphenburg (2005) discusses in the context of tribal politics in Afghanistan. Moreover, the salience of subgroup cleavages can be manipulated by opportunistic political entrepreneurs even in the absence of any overt preexisting tensions (see Fearon and Laitin 2000). As a result of these factors, there can be a great deal of internal variation in how strongly putative members of an ethnic group feel connected to their group identity.[2]

The second key insight to draw from this literature is that ethnic groups are not static. Rather, the boundaries of ethnic group membership are the subject of constant contestations, through which political entrepreneurs struggle to define membership in terms that will be favorable to their interests. The salience and composition of ethnic identity categories can therefore be expected to change substantially over time (Barth 1969; Anderson 1991; Brass 1997). As Kalyvas (2008) argues, the occurrence of "multi-directional identity transformations, as opposed to just consolidation, is more widespread than commonly assumed" (p. 1045). He finds evidence of "ethnic defection"—whereby members of an insurgent ethnic minority join forces with the dominant state—in the Algerian War of Independence, the Mau Mau insurgency in Kenya, the Greek Civil War, and recent conflicts in Lebanon, East Timor, India, Chechnya, and Iraq (pp. 1053-1055; see also Staniland 2012). Such work has also shown that fears of such defection, and the need to shore up crumbling loyalties, can help explain the brutality of the massacres that rebels become willing to inflict on their ethnic brethren (Kalyvas 1999).

These examples demonstrate that intra-ethnic conflicts are frequently nested in broader political struggles vis-à-vis the state. Faced with the pressure to compete for scarce social, political, and economic resources, intragroup divisions can become hardened and polarized. In the resulting context of mistrust and suspicion, there can be strong incentives for political entrepreneurs to engage in "flanking" behaviors, in which they attempt to maximize their base of support by adopting ever more extreme postures regarding the group's boundaries and their willingness to resort to violence to defend the group's "true" members (see Horowitz 1985; Lake and Rothchild 1996; Hislope 1997; Caspersen 2008). These dynamics can generate a spiral of intragroup collective violence—ranging from urban riots to outright intercommunal warfare—along newly hardened subgroup lines. Of course, this outcome is far from inevitable. Many ethnic groups face severe economic and political pressures while remaining internally peaceful. The key question, then, is whether we can develop an understanding of the conditions under which episodes of violent internal fragmentation become more likely to occur.

A Two-level Theory of Group Fragmentation

In contrast to accounts that claim that ethnic groups persist naturally due to the immalleability of the markers used to define their boundaries (Geertz 1973; Smith 1986; Connor 1994; Shils 1995), we characterize ethnic groups as instrumental providers of "joint goods" (Hechter 1987) or group goods (Hardin 1995; Lichbach 1995), whose boundaries are subject to frequent internal contestation. Seen from this perspective, ethnic groups function primarily as sociopolitical coalitions that pool members' resources, both to provide goods directly to their group and to extract further benefits from the state on their group's behalf (Bates 1983; Chandra 2004). These benefits can range from the direct transfer of resources, such as infrastructure, policing, or social services, to policies that grant the group autonomy in particular cultural or political domains. Such benefits are defined as group goods because they generally can only be enjoyed by the members of the group (i.e., they are *jointly excludable*) and because their enjoyment by one member does not reduce their enjoyment by other members (i.e., they are *jointly supplied*). Ethnic groups, then, are like "clubs" that demand sacrifices from their members in exchange for desired goods that are not forthcoming from the state and cannot be obtained on an individual basis (Hechter 1987, 177).[3]

However, the fact that group goods are jointly provided does not mean that they will come to be evenly distributed among the group's members. Although an idealized group good would be characterized by perfectly nonrival consumption, and hence would necessarily be equally available to all group members, more recent formal work has recognized that most of the goods pursued by collective actors represent a mixture of rival and nonrival consumption (Esteban and Ray 2001). As a result, various forms of intragroup heterogeneity—geographic, demographic, economic, and so on—will tend to generate noticeable differences in how group goods are distributed internally (Azam 2001). Such differences create opportunities for subgroup entrepreneurs to challenge extant arrangements by claiming that group boundaries should be constituted along alternative lines. By doing so, subgroup entrepreneurs can act to secure their own leadership positions, weaken the influence of their opponents, and alter the internal allocation of group resources.[4] For instance, when the inequality of social service provision fueled rising dissatisfaction with the Palestinian Authority in Gaza, this created space for the emergent Hamas movement to advance an alternative definition of group boundaries rooted in extreme religious piety, as a contrast to the secularism of Fatah in the West Bank (Brynen 1995; Berman and Laitin 2008; Minorities at Risk Project [MAR] 2009).

Although most existing models of ethnic politics have simply assumed away the problem of intragroup dynamics,[5] some recent formal work has begun to explicitly tackle the difficulties associated with overcoming intragroup divisions in the production of group goods (Garfinkel 2004; Münster 2007). The central message of this work is that distributional problems are frequently the driving force behind both conflict between groups and conflict within groups (see Azam 2001). We adopt this

view here and argue that the observation of collective internal violence is generally the result of distributional conflict between emergent intragroup factions mobilized by subgroup entrepreneurs on the basis of politically activated aspects of intragroup heterogeneity. Although frequently concealed in convenient rhetoric by subgroup entrepreneurs seeking to drape their machinations in an aura of collective legitimacy, the forces underlying such conflict are fundamentally rooted in the pursuit of resources and power.

In the case of Fatah and Hamas, a preexisting geographic divide also provided fodder for political entrepreneurs seeking to promote a novel subgroup cleavage on the basis of religious fundamentalism (MAR 2009). However, it is important to recognize that subgroup entrepreneurs can manipulate the salience of subgroup cleavages even in the absence of any overt preexisting tensions (see Fearon and Laitin 2000). Lin, Wu, and Lee (2006) find evidence of this phenomenon in Taiwan, where the majority Han Chinese ethnicity has been divided into Minnanese, Hakka, and Mainlanders by politicians seeking to "mobilize electoral support in subethnic terms" (p. 37). In a similar vein, Banjo (1998) argues that intra-ethnic violence among the Ogoni of Nigeria was precipitated as competing factions mobilized along novel lines in an attempt to restrict access to newly discovered oil wealth. It is the potential for such rewards that creates an incentive for subgroup political entrepreneurs to heighten the salience of internal cleavages, even where none were previously apparent.

Among the tactics that subgroup entrepreneurs can utilize in their attempts to solidify an emergent division, none are more potent than the production of collective violence. By convincing followers to collectively attack coethnics on the basis of an internal cleavage, the entrepreneur ensures that the new line will be viewed as socially and politically relevant by members on both sides, while also ensuring feelings of antagonism between the emergent subgroups. In the resulting context of mistrust and suspicion, there are strong incentives for rival entrepreneurs to engage in escalating reprisal attacks, polarizing the group into opposing camps and generating a spiral of collective violence along newly hardened subgroup lines (Hislope 1997; Caspersen 2008). Seen from this perspective, intra-ethnic violence is simply a tool wielded instrumentally by subgroup entrepreneurs to cement the overturning of previous lines of solidarity.

If we wish to fully understand the conditions under which collective violence will be observed within groups, however, we must expand our focus beyond the internal dynamics of subgroup factionalism. Kalyvas (2003, 475) reminds us that "it is the convergence of local motives and supralocal imperatives," which renders civil conflict such a complex phenomenon. As Wilkinson (2004) shows in the context of ethnic riots in India, collective violence is not produced in a vacuum but rather through strategic interactions between ethnic extremists and the forces of the state. In general, the state's most basic interest lies in the preservation of domestic order and (at least the appearance of) a monopoly on the large-scale deployment of armed force (Weber 1964; Krasner 1999). We should therefore expect state influence to be employed in the suppression of collective violence, especially if that violence

could be of a sufficient scale to call into question the state's capacity to provide security for its citizens.[6] This suppression can take several forms. The state may impose order through overt physical force, it may covertly sabotage violent factions from within, or it may find ways to make side payments to buy off opponents (Davenport 2007a). Regardless of the specific tactics employed, the key point is that state efforts can exercise powerful influence over the ability of subgroup entrepreneurs to mobilize collective violence in the pursuit of their political aims. As a result, intragroup distributional bargaining, and the conflicts that sometimes arise from it, necessarily takes place in the shadow of state power.

This is particularly true for politically relevant ethnic minorities—groups that are politically mobilized along ethnic lines, but disadvantaged in terms of demographic weight—which necessarily find themselves in subordinate positions vis-à-vis the state. Such groups are neither so quiescent as to pass beneath the state's notice nor so strong as to be able to ignore the state's influence. This is precisely why they represent such a convenient target for empirical analysis, as they are subject to a common set of internal pressures and external constraints that allow us to make cross-national generalizations about their behavior. We turn now to the derivation of those hypotheses.

Group Size and the Production of Internal Violence

The account presented above argues that internal collective violence among politically active ethnic minorities is produced at the intersection of the mobilizational efforts of political entrepreneurs operating at the subgroup level and the suppressive efforts of state forces operating at the supra-group level. The key difficulty faced in testing this account lies in the fact that the actions of the critical players are frequently unobservable. Attempts by subgroup entrepreneurs to mobilize factional violence will generally only be observable if and when they produce collective violence, and the fragmentation may occur along lines that previously appeared irrelevant to the group's politics. Moreover, the suppressive actions of the state will frequently be covert in nature, either to limit the reaction to violent repression or to avoid the political inconvenience of generating visible side payments to subordinate ethnic minorities.

Thus, while we have strong reasons to suspect that both internal pressures and external constraints are acting on the propensity of groups to experience internal violence, in testing this conjecture we cannot rely on direct observation of the micro-level dynamics. Instead, our empirical strategy rests on deriving a number of testable implications concerning macro-level relationships that should be observed if our theory is correct.

The most basic of these relationships concerns r, the relative size of the group. Much previous work has recognized that the demographic weight of a group, relative to the country as a whole, is a key indicator of societal power and an important determinant of conflict behavior (Bhavnani and Miodownik 2009; Buhaug, Cederman,

and Rød 2008; Reynal-Querol 2002; Montalvo and Reynal-Querol 2005; Esteban and Ray 2008; Forsberg 2008; Cederman, Buhaug, and Rød 2009). In analyzing intra-ethnic conflict, relative group size provides a particularly useful lens through which to examine the likelihood of violence, as variations in relative group size can be expected to generate quite different effects on the incentives operating at the subgroup and supra-group levels.

Consider first the incentives operating at the subgroup level. We can assume that in any group of sufficient size, there will be potential subgroup entrepreneurs who would like to see the group organized along alternative lines. What varies between groups is not the presence of such actors, but the incentives and constraints they face in pursuing their interests. Theorists of collective action have recognized for some time that internal cohesion becomes more difficult to maintain as group size increases (Olson 1965; Black 1974; Lichbach 1995), an insight confirmed by classic experimental results on cooperation in *n*-person prisoner's dilemmas (Hamburger, Guyer, and Fox 1975; Bonacich et al. 1976; Fox and Guyer 1977). There are a number of reasons for this relationship. As group size increases, so too does the internal heterogeneity of the group's sociopolitical preferences (Alesina and Spolare 2003), multiplying the number of crosscutting cleavages along which subgroup entrepreneurs can seek to mobilize factional violence. Moreover, we can expect that larger groups will contain a higher number of viable subgroups, thus increasing the difficulty of managing distributional conflicts between them. In addition, Rohner (2007) shows that intragroup tensions will increase with group size due to the decreased reputational costs of defection. Thus, as shown in Figure 1, we should expect the internal (centrifugal) pressures promoting the production of intra-ethnic fragmentation, F, to be an increasing function of the group's relative size, r. We should also expect that this relationship will be somewhat attenuated as $r \rightarrow 0.5$, as larger minorities are generally more successful at extracting resources from the state (DeNardo 1985; Esteban and Ray 2001), and group leaders are likely to invest a portion of those increased returns in efforts to foster greater internal cohesion. Hence, if we considered only the incentives operating at the subgroup level, we would expect a monotonically positive, concave relationship between a group's relative size, r, and its likelihood of experiencing internal collective violence (see Figure 1).

However, this picture changes dramatically when we consider the incentives facing the state. As we argued previously, the state's most basic interest lies in the preservation of domestic peace and stability. Large-scale collective violence threatens perceptions of domestic security, creating a strong incentive for states to buy off or suppress factional conflicts before they become visible. Of course, all states face limitations in the resources they can devote to such efforts. Given the impossibility of suppressing *all* potential conflicts, states are forced to decide which threats are most dire.[7] All else being equal, we should therefore expect that efforts to buy off or suppress conflict will be directed more toward larger groups than toward smaller groups, as these are the groups whose violence poses the greatest threat to perceptions of general stability.[8]
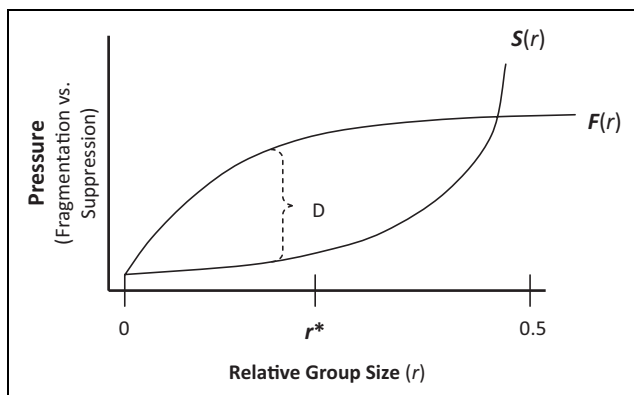
Figure 1. Two-level model of fragmentation.

Thus, looking again to Figure 1, we should expect the external (centripetal) pressures promoting the suppression of intra-ethnic fragmentation, S, to be an increasing function of the group's relative size, r. In contrast, however, to the centrifugal pressures operating at the subgroup level, this centripetal relationship should experience none of the same attenuation as $r \to 0.5$. If anything, the relationship should strengthen as $r \to 0.5$, as each step closer to societal parity implies not only a further increase in the potential scale of violence within the group in question but also a corresponding decrease in the probability that there exist any additional groups of equal or greater size in the same country that could split the allocation of state suppressive efforts.

In summary, we expect the internal pressures promoting the production of intragroup fragmentation to be an increasing function of r, such that $F'(r) > 0, F''(r) < 0$, and $F(0) = 0$ for $0 \leq r \leq 0.5$; and we expect the external pressures promoting the suppression of intragroup fragmentation to be an increasing function of r, such that $S'(r) > 0, S''(r) \geq 0$, and $S(0) = 0$ for $0 \leq r \leq 0.5$.[9] Let us suppose further that the probability of intragroup violence is proportional to the difference in strength, D, between these two opposing pressures:

$$\Pr[\text{Violence}] \propto D = F(r) - S(r)$$

Then, as long as $F'(0) > S'(0)$, the logic of Figure 1 makes clear that there must be a unique value, r^*, at which the probability of internal violence is maximized.[10]

Taken together, these two levels of analysis thus allow us to generate the counterintuitive prediction that the likelihood of internal collective violence among politically active ethnic minorities is not a simple positive function of relative group size, r, but rather a concave curvilinear function of r. Relatively small minority groups face little distributional heterogeneity and thus offer little opportunity for subgroup entrepreneurs to promote factional violence. At the other extreme, relatively large

minority groups are more likely to have their internal conflicts suppressed by the state before they become visible to outside observers. In other words, subgroup entrepreneurs in relatively small groups face an absence of internal opportunity for the mobilization of intragroup violence, whereas subgroup entrepreneurs in relatively large groups face an absence of external opportunity for the mobilization of intragroup violence. It is therefore in the middle ranges, where both of these pacifying forces are at their weakest, that we should expect the greatest proportion of internal violence to be observed (see Figure 1). Hence, we have our first observable implication:

> **Hypothesis 1:** Among politically active ethnic minorities, the likelihood of internal violence has a curvilinear relationship to relative group size, with minima at $r = 0$ and $r = 0.5$, and a maximum at r^*.

The logic of internal and external cross-pressures depicted in Figure 1 also allows us to generate additional predictions concerning variation in the relationship between group size and internal conflict in different social and political contexts. Considering first the supra-group level of analysis, it is important to note that states differ greatly in the freedom with which they can devote resources to the violent or nonviolent suppression of factional violence. In fully consolidated democracies, the combination of competitive elections and institutional constraints on executive actions can greatly increase the difficulty of buying off factions through side payments or repressing their activities through force. Indeed, the literature on state repression consistently finds that democracies are less likely to use repression when faced with domestic unrest (Davenport 2004, 2007b; Davenport and Armstrong 2004; Bueno de Mesquita et al. 2005). In the language of our model, this reduction in the provision of suppressive force by the state amounts to a downward shift in the S curve, such as the shift from S_0 to S_{Dem} shown in Figure 2. While this shift clearly predicts an increase in the aggregate probability of intra-ethnic violence, Figure 2 makes clear that such a shift also generates the counterintuitive prediction that democratic institutions should generate higher values of r^*. In other words, because they inhibit the application of suppressive force by the state, democratic constraints on executive action should be expected to raise the relative size at which intragroup violence is optimally produced. Hence, we have our second hypothesis:

> **Hypothesis 2:** In states with strong democratic constraints on executive action, (a) the probability of intra-ethnic violence will be higher, and (b) the value of r^* will be higher.

Shifting to the subgroup level of analysis, it seems clear that we should also expect that ethnic groups would differ in their levels of cohesion and solidarity. While ethnic boundaries are always subject to contestation, groups whose boundaries are characterized by descent-based markers of ethnic distinction seem likely to present higher barriers to the machinations of subgroup entrepreneurs. Members
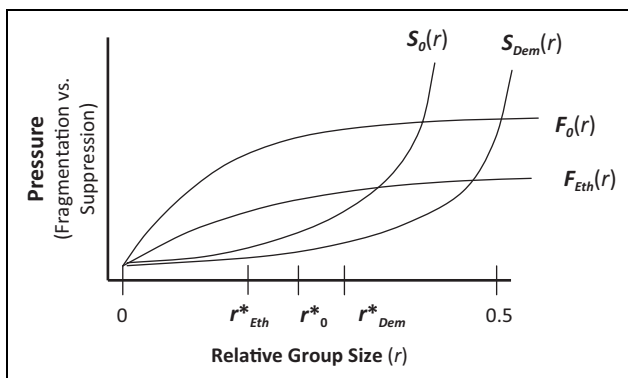
Figure 2. Fragmentation in context.

of groups distinguished from the broader society by the uniform presence of racial, religious, or linguistic markers may experience stronger ties of ethnic affinity, both because they provide a conveniently homogenous target for political entrepreneurs seeking to emphasize group unity (Geertz 1973), and because decreased opportunities for exit tend to increase the loyalties that members feel toward their group (Hirschman 1970). In the language of our model, this reduction in the ease with which subgroup entrepreneurs can foment internal fragmentation amounts to a downward shift in the F curve, such as the shift from F_0 to F_{Eth} shown in Figure 2. While such a shift clearly predicts a decrease in the aggregate probability of intra-ethnic violence, it also predicts a decrease in the value of r^*. That is, because stronger ethnic bonds inhibit the success of divisive mobilizational appeals, they also lower the relative size at which intragroup violence is optimally produced. This brings us to our final hypothesis:

> **Hypothesis 3:** In groups with high levels of ethnic cohesion, (a) the probability of intra-ethnic violence will be lower, and (b) the value of r^* will be lower.

Data and Methods

In order to test these hypotheses, we require measures of both relative group size and internal violence across ethnic groups. Among the data sets currently available to the discipline, the MAR Project (2009) stands alone in offering measures of both of these factors across a global sample of politically mobilized ethnic groups and therefore represents the ideal starting point for our analysis. However, this data source also carries important limitations that must be addressed before we can proceed. Rather than attempting to capture the full universe of ethnic groups worldwide, MAR imposes several key selection criteria that govern which groups are recorded. In brief, these criteria require that the ethnic groups be (1) politically relevant, in the

sense that they formulate demands vis-à-vis the state, (2) demographic minorities, and (3) subject to social or political discrimination. The first two criteria pose no difficulties, as they simply describe the domain to which our theory is intended to apply: politically relevant ethnic minorities. The third criterion, though, is more problematic. At first glance, it's quite possible that this selection rule is correlated with group size. If, for instance, smaller minority groups are more likely to face discrimination and thus are more likely to be included in the MAR sample, this could severely bias our inferences regarding the relationship between minority group size and internal conflict.

To ensure against this possibility, we draw information from the Ethnic Power Relations (EPRs) data set (Cederman, Min, and Wimmer 2010), which utilizes expert surveys to identify all politically relevant ethnic groups in the world, regardless of their status or power. While EPR does not record instances of intra-ethnic conflict, it does record each group's relative size—that is, the group's population divided by the total population of the country in which they reside. This means that we can use the EPR group list to construct a baseline distribution of minority group sizes against which to compare the MAR sample for potential bias. In 2005 (the most recent year available in both data sets), the EPR data identify 554 politically relevant ethnic minorities in 126 countries. In contrast, from the MAR data we identify only 276 disadvantaged ethnic minorities in 115 countries. However, while this makes clear that MAR represents only a subsample of the full universe of ethnic groups, we find that the distributions of group sizes in the two samples are nearly identical (EPR: $\mu = .095$, $\sigma = .113$; MAR: $\mu = .100$, $\sigma = .108$). Moreover, a Kolmogorov–Smirnov test of distributional equivalence fails to reject the null hypothesis that the two samples of group sizes were drawn from equivalent underlying distributions ($D = .0767$, $p = .248$). We thus conclude that "disadvantaged" ethnic minorities represent a subsample of "politically relevant" ethnic minorities drawn as-if at random with regard to group size, and that the MAR selection procedure is therefore unlikely to bias the results reported below. Hence, our key independent variable, *Relative Group Size*, is set equal to the group's population divided by the total population of the country in which they reside, as recorded in the MAR data set. Because our theory predicts a curvilinear relationship between relative group size and the likelihood of internal collective violence, all models also include a squared version of this variable.

Our dependent variable, *Fracture*, is measured dichotomously on a group-year basis and equals 1 for any group-year in which we observe *internal collective violence*, as recorded in the MAR data set over the period 1990 through 2006. We define internal collective violence as events in which (1) competing factions are explicitly organized along intragroup lines, (2) those factions pursue their aims through violence directed at group members, and (3) the violence is mobilized collectively in the form of large-scale riots or armed clashes. By requiring that the violence be organized and collective, this definition purposely excludes small-scale attacks perpetrated by lone individuals, as we are interested in the dynamics of

collective fragmentation rather than the isolated acts of a few disaffected outcasts (see Appendix A for details). In the seventeen-year period examined here, fifty-three of the groups in our sample experienced at least one episode of internal collective violence.

To test Hypothesis 2, we also require a measure of the strength of democratic institutional constraints. The standard approach in the civil conflict literature seeks to capture the effects of democracy using a twenty-one-point democracy–autocracy scale derived from the Polity IV data set, which combines measures of the strength of executive constraints, the competiveness of executive selection, and the degree of popular political participation (Marhsall, Jaggers, and Gurr 2009). However, Vreeland (2008) notes that the participation component of the Polity index is measured, in part, on the basis of whether civil violence has been observed in a given country. The standard Polity index may therefore generate spurious inferences regarding the relationship between democracy and civil conflict. Instead, we utilize the alternative *XPolity* index developed by Vreeland, which simply removes the problematic participation component from the estimation of the democracy-autocracy scale. This yields an index, ranging from -6 to 7, which captures more precisely the specific causal factor referenced in our second hypothesis: the degree to which executive action is constrained by institutional checks and competitive selection.

To capture the effects of ethnic cohesion referenced in Hypothesis 3, we code three dichotomous measures of the ethnic markers used to define group membership. In order to qualify, such traits must be markers of *ethnic distinction*. That is, they must be passed down primarily through kin relations, they must be nearly ubiquitous among members of the group, and they must be generally absent from the broader population. Drawing on information from the MAR data set, we set *Race* equal to 1 if the group is characterized by a distinct physical appearance, *Religion* equal to 1 if the group is characterized by distinct religious beliefs, and *Language* equal to 1 if the group is characterized by the use of a distinct language (see Appendix A for details).

We also derive a number of control variables from the MAR data set, intended to measure factors that, while not directly captured by our theory, may nevertheless be correlated with both group size and factional conflict and could therefore bias our main results if they were omitted from the analysis (see Appendix A for details). First, we note that though our theory assumed that states will generally devote their efforts to the suppression of factional conflict, this is certainly not always the case. In particular, when facing an armed insurrection by a specific ethnic group, states may instead devote their efforts to the *promotion* of factional splits within that group, as internal conflicts are likely to weaken the effectiveness with which the group can challenge state forces. Indeed, both Kalyvas (2008) and Lyall (2010) find that states can be quite strategic in promoting intragroup divisions when challenged by ethnic rebellions.[11] We therefore control for *Rebellion*, which equals 1 if the group was involved in collective violence against state forces in the previous five years.

Second, we note that while our theory focused exclusively on within-country dynamics, many ethnic groups also have close kin across an international border. Such groups can be expected to face heightened distributional tensions, as members from either side are likely to differ in their sociopolitical preferences, economic needs, and cultural practices (Posner 2004). The inevitable movement of kin across the border will therefore tend to generate imbalances in the degree to which group members are satisfied with the status quo that will be difficult to eliminate as long as the interstate border forces members into separate political regimes. This mechanism is highlighted by Chan (2004), Downman (2004), and Kim (2006) who each examine how the pressures of immigration can generate distributional tensions and factional conflict within ethnic groups. Thus, we include *Transnational Dispersion* as a control variable, setting it equal to 1 for groups that have close kin in a separate country that borders their own.

Third, we note that ethnic groups differ substantially in the kinds of organizations used to defend their interests vis-à-vis the state and the broader society. Groups whose interests are represented exclusively by lawfully organized political parties or social movements may find it easier to avoid internal factional violence, both because such organizations should make it easier for the group to settle internal distributional disputes peacefully and because such organizations should facilitate the monitoring and suppression of factional conflict by the state. In contrast, groups with militant armed wings should face lower barriers to internal conflict and higher barriers to state suppression. Hence, *Militant Organization* is set equal to 1 for any group that includes organizations that promote joint political action through violent means. Finally, because states differ in their capacities to monitor the activities of their citizens and exert coercive force over their behaviors, we also control for *GDP per capita* and the *Total Population* of the country (logged), as these have been found to be key indicators of state capacity and state reach (Fearon and Laitin 2003; Collier and Hoeffler 2004; Hegre and Sambanis 2006).

The main models are each estimated using logistic regression, with Huber/White robust standard errors adjusted for clustering by country. As a check against the potential bias produced by duration dependence each of these models also includes *Peace Years*, which measures the number of years since the last *Fracture* event in a particular group, along with a natural cubic spline of *Peace Years*, per the recommendations of Beck, Katz, and Tucker (1998).[12] In addition, all independent variables are lagged by one year to guard against the possibility of reverse causation.[13]

Because the central observable implication derived from our account concerns the curvilinear shape of the relationship between *Relative Group Size* and *Fracture*, we also conducted additional robustness checks in which we relaxed the functional form assumptions of the parametric specification. This was necessary due to the well-known difficulties associated with quadratic interaction terms, which can force a relationship to appear U-shaped even when the true data generating process does not have a quadratic form. To assess this possibility, we utilize thin plate regression splines, a variety of semi-parametric regression that is flexible with respect to the

nonlinear shape of the response function (Wood 2006). This approach allows the data to inductively inform the shape of the relationship between our variables of interest, allowing more precise estimation of the nature of the relationship between *Relative Group Size* and *Fracture*, unconstrained by the quadratic parametric form.[14] To optimize the selection of the smoothing parameter λ that governs the trade-off between maximizing the fit and maximizing the parsimony of the resulting functional form, we utilize an approach known as generalized cross-validation (GCV), which seeks to minimize prediction errors while penalizing overfitting (Green and Silverman 1994).[15]

Results

The results from the logistic regressions are reported in Table 1. Model 1 is a baseline specification, which includes only the effects of *Relative Group Size* and *Peace Years*. Model 2 adds the variables measured at the group level: *Race*, *Religion*, *Language*, *Rebellion*, *Transnational Dispersion*, and *Militant Organization*. Finally, model 3 adds the variables measured at the state level: *XPolity*, *GDP* per capita, and *Total Population*. All three models demonstrate strong confirmation of Hypothesis 1. Regardless of which control variables are included in the specification, the statistically significant coefficients for *Relative Group Size* ($p < .001$) and *Relative Group Size*^{2} ($p = .003$) show that that the likelihood of internal collective violence has a curvilinear relationship to the relative size of an ethnic minority, as predicted by our two-level theory of group fragmentation. This relationship can be more easily visualized by plotting the predicted likelihood of internal collective violence as a function of relative group size (see Figure 3). As the plot shows, the likelihood of fragmentation is lowest for both the smallest groups and the largest groups and reaches its peak in the middle ranges. This analysis also allows us to estimate the value of r^*, the point at which the sum of the pacifying forces stemming from the absence of internal opportunity at the subgroup level and the absence of external opportunity at the supra-group level are at their weakest. The results indicate that the most violence-prone configuration occurs when a group comprises approximately 25 percent of the total country population.

The evidence in Table 1 also provides strong confirmation of Hypothesis 2a. The coefficient for *XPolity* is positive and statistically significant ($p = .022$), lending credence to the argument that while states generally have strong incentives to suppress factional violence, they can be constrained in their freedom to do so by strong democratic institutions. The results also provide partial confirmation of Hypothesis 3a. Although the coefficients for *Race* and *Religion* are quite far from statistical significance, *Language* has a statistically significant ($p = .004$) negative effect in all specifications. Hence, while minorities marked by racial and religious boundaries apparently exhibit no additional capacities for maintaining group unity, the presence of a shared and distinct language dramatically improves the likelihood that factional violence will be avoided. This finding seems to echo the expectations of classical theorists of nationalism, such as Anderson (1991), Gellner

Table 1. Logistic Regressions: Internal Collective Violence.

	Model 1	Model 2	Model 3
Relative Group Size	9.6874**	10.0099***	14.5795***
	(3.8050)	(3.3747)	(4.0005)
Relative Group Size^2	−19.5257**	−24.0229***	−29.5826***
	(9.2138)	(8.8660)	(10.0948)
Race		−0.5008	−0.2657
		(0.3360)	(0.4103)
Religion		0.0286	0.2587
		(0.2303)	(0.2776)
Language		−1.0887***	−0.7949***
		(0.3041)	(0.2758)
Transnational Dispersion		1.0741***	0.8854***
		(0.3435)	(0.2952)
Militant Organization		1.8155***	1.8102***
		(0.3601)	(0.4157)
Rebellion		0.8238***	0.9710***
		(0.2298)	(0.3153)
XPolity			0.0837**
			(0.0365)
GDP per capita			−0.0040
			(0.1806)
Total population			0.2293***
			(0.0847)
Peace Years	−1.2772***	−1.2712***	−1.1159***
	(0.1759)	(0.1637)	(0.1378)
Spline 1	−0.0570***	−0.0585***	−0.0476***
	(0.0155)	(0.0153)	(0.0126)
Spline 2	0.0415**	0.0425**	0.0317**
	(0.0173)	(0.0173)	(0.0148)
Spline 3	−0.0164	−0.0166	−0.0105
	(0.0111)	(0.0112)	(0.0100)
Constant	−1.8356***	−3.9191***	−7.3282***
	(0.2936)	(0.5498)	(1.6407)
N	4,477	4,429	3,892

Note: Robust standard errors in parentheses.
**$p < .05$. ***$p < .01$.

(1983), and Deutsch (1953), who argued that communities are rendered more cohesive when members can communicate more effectively with each other than they can with outsiders.

The control variables generally behave as expected. The positive and significant coefficient for *Rebellion* indicates that states do not suppress factional violence uniformly but rather behave quite strategically in this regard, becoming more likely to allow or promote intra-ethnic violence rather than suppressing it when faced with an
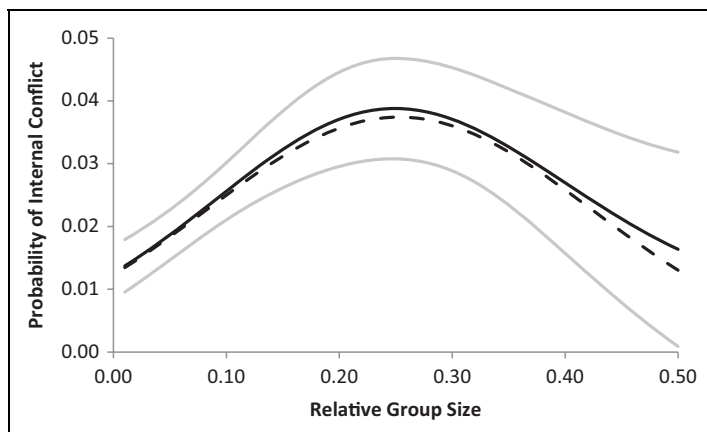
Figure 3. Probability of internal conflict: parametric versus semi-parametric regression.
Note: Black solid line shows predicted probabilities derived from Model 1. Gray solid lines show standard errors from Model 1. Black dashed line shows predicted probabilities derived from Model 5.

insurrection by a disadvantaged ethnic minority. The coefficients for *Transnational Dispersion* and *Militant Organization* are both statistically significant and positive, indicating that groups that straddle an international border and groups that include an armed militant wing are more likely to face internal collective violence.

The results from the semi-parametric spline regressions are also strongly supportive of Hypothesis 1 (see Table 2). The functional form estimated through the GCV procedure, which also includes a separate cubic spline for the effect of *Peace Years*, yields a highly significant effect for *Relative Group Size* ($p < .001$).[16] As shown in Figure 3, the predicted probabilities drawn from the semi-parametric model conform very closely with the inferences drawn from the parametric model, again demonstrating that the likelihood of conflict peaks for groups that comprise approximately 25 percent of the total country population. Moreover, the model shows that the effects of *Relative Group Size* are highly significant not only in statistical terms but also in substantive terms. Holding all else constant, shifting from $r = 0.01$ to $r = 0.25$ nearly triples the likelihood of observing internal collective violence. This is strong evidence that the curvilinear relationship estimated between *Relative Group Size* and *Fracture* is not a mere artifact of the functional form assumptions imposed by the quadratic interaction term, but rather is a real property of the data in our sample. Indeed, given the flexibility of the spline regression model, it is notable that such a simple functional form was selected. The model estimates the effective degrees of freedom in the relationship to be 1.923, which indicates that the function requires only a small number of "knots" (changes in the direction of the curve) to account for the observed patterns.

The spline regressions also provide the ideal means of testing our secondary hypotheses, Hypotheses 2b and 3b. Recall that our model predicts that $r*$, the relative group

Table 2. Semi-parametric Spline Regressions: Internal Collective Violence.

	Model 5	Model 6 (Democracy subsample)	Model 7 (Language subsample)
S (Relative Group Size)			
EDF	1.923	2.367	1.836
χ^2	22.95	8.36	6.22
p	<.0001	.019	.034
Deviance explained	21.5%	21.6%	18.1%
N	4,477	1,556	754

Note: EDF = effective degrees of freedom. Each model represents a semi-parametric version of Model 1 estimated on a different subsample of the data. The χ^2 statistic tests the significance of the smooth of *Relative Group Size*, compared to the null hypothesis of no effect.

size at which internal violence is optimally produced, will vary across different social and political contexts. In particular, we expect r^* to be higher when state suppressive activities are inhibited, and we expect r^* to be lower in groups with greater levels of internal cohesion. To test these conjectures, we estimate spline regressions on separate subsamples of our data, allowing us to estimate changes in r^* at a far greater level of precision than would be possible with purely parametric approaches that enforce a quadratic functional form. For the first conjecture (Hypothesis 2b), we draw the subsample from upper end of the *XPolity* distribution (i.e., observations for which *XPolity* > 5), and for the second conjecture (Hypothesis 3b), we draw the subsample of linguistically distinct groups (i.e., observations for which *Language* = 1).

As reported in Table 2, the smooths of *Relative Group Size* remain statistically significant across each of the subsamples. However, the specific shapes estimated by the spline function vary greatly across these conditions. The relationships can be more readily visualized by plotting the predicted probability of internal violence as a function of *Relative Group Size* for each subsample, as shown in Figure 4. As predicted by our theory, the plot shows that the optimal production of internal violence occurs at much lower group sizes within the *Language* subsample and occurs at much higher group sizes within the *Democracy* subsample. Although this optimum point was estimated at $r^* = 0.25$ for the full sample, within the *Language* subsample we estimate $r^* = 0.11$ and within the *Democracy* subsample we estimate $r^* = 0.38$. This represents additional evidence that the specific mechanism we postulated—the two-level trade-off between internal pressures of fragmentation and external pressures of suppression—is actually driving the curvilinear relationship between *Relative Group Size* and the likelihood of internal collective violence that we observe in the data.

Conclusion

Taken as a whole, the evidence presented here lends substantial credence to our two-level model of group fragmentation, demonstrating that internal collective violence
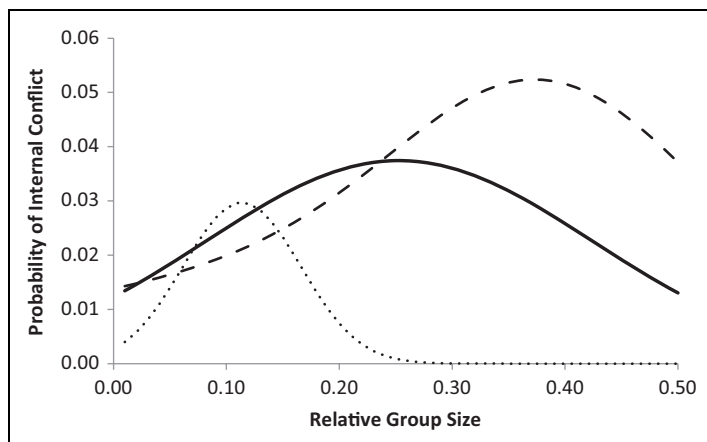
Figure 4. Probability of internal conflict: distinct language versus. democratic constraints.
Note: Predicted probabilities based on Models 5, 6, and 7. The solid line shows results from Model 5 (full sample), the dashed line shows results from Model 6 (*Democracy* subsample), and the dotted line shows results from Model 7 (*Language* subsample).

is produced through the efforts of subgroup entrepreneurs seeking leverage in intragroup distributional conflicts, while also demonstrating that such intragroup battles necessarily occur in the shadow of state power. This account allowed us to generate the counterintuitive prediction that the likelihood of internal collective violence is a curvilinear function of relative group size, while also successfully predicting how the specific shape of that relationship should change under varying sociopolitical contexts that alter the relative strengths of the internal and external pressures operating on the production of internal collective violence. The results thus clearly demonstrate the benefits that can be achieved by deriving predictions of conflict behavior from models that simultaneously incorporate forces operating at multiple levels of analysis.

Moreover, while we have focused on the category of politically relevant ethnic minorities as a convenient target for empirical analysis, the implications of our account reach far beyond this class of groups. Our model is premised on the observation that such groups find themselves operating at the intersection of cross pressures emanating from both the subgroup and supra-group levels. While this is certainly true of disadvantaged ethnic minorities, it is also true of any number of politically mobilized groups operating in the context of villages, states, or even firms. More generally, we might say that the patterns identified here are characteristic of conflict in *nested hierarchies*, in which key actors are operating at both lower and higher levels of aggregation. The results presented in the previous section are thus only a starting point. If our account is correct, we may find similar empirical patterns in other conflict settings characterized by nested hierarchies of power

relations. However, a more complete investigation of this possibility will have to await the efforts of future research.

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Notes

1. An important exception is recent work by Cunningham (2011) and Cunningham, Bakke, and Seymour (2012), which uses a random sample of twenty-two separatist ethnic groups to examine the consequences of intragroup divisions.
2. For instance, Gorenburg (2000) uses survey data to demonstrate the existence of significant variations in nationalist sentiments within ethnic minority groups in the Russian Federation.
3. See Duffy and Lindstrom (2002), Azam (2001), and Bahry et al. (2005) for discussions of the "solidary" incentives such organizations provide for membership.
4. See Liljaa and Hultman (2011) for an analysis of such dynamics in the Sri Lankan civil war, and Fotini (2008) for an examination of violence within the Bosnian Muslim community.
5. Notable exceptions are the examinations of in-group policing by Fearon and Laitin (1996) and Bhavnani and Miodownik (2009).
6. In the following section, we relax this assumption by examining circumstances under which states would have an incentive to promote factional violence rather than suppressing it.
7. Wilkinson's (2004) analysis shows that states can behave quite strategically in this regard, allowing some conflicts to boil over while actively suppressing others, depending on political context.
8. This conjecture is also supported by the sociological literature on perceptions of group threat, which consistently finds a positive relationship between the relative size of a group and the level of threat it is perceived to pose (King and Wheelock 2007; Meuleman, Davidov, and Billiet 2009).
9. The upper bound on group size, $r < 0.5$, is important here, as above this line our argumentation breaks down. In particular, we argue that $S''(r) > 0$ because the probability of the existence of another larger minority faction in the same country is decreasing in group size, but there is no reason to believe this relationship would hold for $r > 0.5$, where the probability of the existence of another larger minority is 0, and constant in group size. This limitation is also key to the logic of the F curve, as it excludes the possibility of super-majority groups, which may face additional political incentives for shrinking or splitting that would not be well captured by our model. Our model thus makes no

predictions concerning the conflict propensities of majority groups as such groups lie outside the domain of the theory.

10. Note that the condition $F'(0) > S'(0)$ simply eliminates the degenerate case in which external pressure exceeds internal pressure for all values of r. Note also that it is not strictly necessary that $F''(r) < 0$ and $S''(r) \geq 0$; as long as $F''(r) < S''(r)$, the argument still holds.

11. For an examination of the peace-building consequences of rebel fragmentation, see Driscoll (2012).

12. The results are unchanged if we instead use the "squared" + "cubed" approach recommended by Carter and Signorino (2010).

13. We also conduct a number of robustness checks to ensure that this particular specification is not driving our results. In particular, we tried modified versions of Model 3 with the addition of a lagged dependent variable, using the standard *Polity2* index to measure democracy instead of *XPolity*, and the use of alternative severity thresholds for *Rebellion*. In each instance, we find that the results are substantively equivalent to those reported here, and so we omit them in the interest of space.

14. For a discussion of the strengths and weakness associated with different approaches to the estimation of smoothing splines, see Hastie, Tibshirani, and Friedman (2001).

15. The model is estimated using the mgcv package in R; see Wood (2001) for details. For an interesting application of generalized cross-validation (GCV) to the study of international conflict, see Ramsay (2008).

16. Note that the precise level of this significance test should be taken with a grain of salt, as the χ^2 test underlying it is only approximate in the context of the GCV approach used to select the smoothing parameter.

References

Akinteye, Akin. 1999. "Intra-ethnic Conflicts among the Yoruba: A Case of Igbo Ora." In *Community Conflicts in Nigeria: Management, Resolution and Transformation*, edited by Onigu Otite and Isaac Olawale Albert, 83-117. Oxford, UK: Spectrum Books.

Alesina, Alberto, and Enrico Spolare. 2003. *The Size of Nations*. Cambridge, MA: MIT Press.

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

Asal, Victor, Mitchell Brown, and Angela Dalton. 2012. "Why Split? Organizational Splits among Ethnopolitical Organizations in the Middle East." *Journal of Conflict Resolution* 56:94-117.

Azam, Jean-Paul. 2001. "The Redistributive State and Conflicts in Africa." *Journal of Conflict Resolution* 38:429-44.

Bahry, Donna, Mikhail Kosolapov, Polina Kozyreva, and K. Wilson Rick. 2005. "Ethnicity and Trust: Evidence from Russia." *The American Political Science Review* 99:521-32.

Banjo, "Wale" Segun. 1998. *Oil and Intra-ethnic Violence in South-eastern Nigeria: The Internationalisation of Ogoni crisis*. Ibadan, Nigeria: Emmi Press International.

Barth, Fredrik. 1969. *Ethnic Groups and Boundaries*. Boston, MA: Little, Brown.

Bates, Robert H. 1983. "Modernization, Ethnic Competition, and the Rationality of Politics in Contemporary Africa." In *State Versus Ethnic Claims: African Policy Dilemmas*, edited by Donald Rothchild and Victor A. Olunsorola, 152-71. Boulder, CO: Westview Press.

Beck, Nathaniel, Jonathan N. Katz, and Richard Tucker. 1998. "Taking Time Seriously: Time-series-cross-section Analysis with a Binary Dependent Variable." *American Journal of Political Science* 42:1260-88.

Berman, Eli, and David D. Laitin. 2008. "Religion, Terrorism and Public Goods: Testing the Club Model." *Journal of Public Economics* 92:1942-67.

Bhavnani, Ravi, and Dan Miodownik. 2009. "Ethnic Polarization, Ethnic Salience, and Civil War." *Journal of Conflict Resolution* 53:30-49.

Black, G. S. 1974. "Conflict in Community: Theory of Effects of Community Size." *American Political Science Review* 68:1245-61.

Bonacich, Phillip, Gerald H. Shure, James P. Kahan, and Robert J. Meeker. 1976. "Cooperation and Group Size in the N-person Prisoner's Dilemma." *Journal of Conflict Resolution* 20:687-706.

Brass, Paul. 1997. *Theft of an Idol*. Princeton, NJ: Princeton University Press.

Brynen, Rex. 1995. "The Neopatrimonial Dimension of Palestinian Politics." *Journal of Palestinian Studies* 25:23-36.

Bueno de Mesquita, Bruce, George W. Downs, Alastair Smith, and Feryal M. Cherif. 2005. "Thinking Inside the Box: A Closer Look at Democracy and Human Rights." *International Studies Quarterly* 49:439-57.

Buhaug, Halvard, Lars-Erik Cederman, and Jan Ketil Rød. 2008. "Disaggregating Ethno-nationalist Civil Wars: A Dyadic Test of Exclusion Theory." *International Organization* 62:531.

Carter, David B., and Curtis S. Signorino. 2010. "Back to the Future: Modeling Time Dependence in Binary Data." *Political Analysis* 18:271-92.

Caspersen, Nina. 2008. "Intragroup Divisions in Ethnic Conflicts: From Popular Grievances to Power Struggles." *Nationalism and Ethnic Politics* 14:239-65.

Cederman, Lars-Erik, Andreas Wimmer, and Brian Min. 2010. "Why Do Ethnic Groups Rebel?" *World Politics* 62:87-119.

Cederman, Lars-Erik, Halvard Buhaug, and Jan Ketil Rød. 2009. "Ethno-nationalist Dyads and Civil War: A GIS-based Analysis." *Journal of Conflict Resolution* 53:496-525.

Cederman, Lars-Erik, Kristian Gleditsch, and Nils Weidmann. 2011. "Horizontal Inequalities and Ethno-nationalist Civil War." *American Political Science Review* 105:478-95.

Cederman, Lars-Erik, and Luc Girardin. 2007. "Beyond Fractionalization: Mapping Ethnicity Onto Nationalist Insurgencies." *American Political Science Review* 101:173-85.

Cederman, Lars-Erik, Luc Girardin, and Kristian Skrede Gleditsch. 2010. "Ethno-nationalist Triads: Assessing the Influence of Kin Groups on Civil Wars." *World Politics* 61:403-37.

Chan, Angela Fuhn. 2004. "The Global Enclave Model: Economic Segregation, Intra-ethnic Conflict, and the Impact of Globalization on Chinese Immigrant Communities." *Asian American Policy Review* 13:21-60.

Chandra, Kanchan. 2004. *Why Ethnic Parties Succeed: Patronage and Ethnic Headcounts in India*. Cambridge: Cambridge University Press.

Collier, Paul, and Anke Hoeffler. 2004. "Greed and Grievance in Civil War." *Oxford Economic Papers* 56:563-95.

Connor, Walker. 1994. *Ethno-nationalism: The Quest for Understanding*. Princeton, NJ: Princeton University Press.

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* 53:570-97.

Cunningham, Kathleen Gallagher. 2011. "Divide and Conquer or Divide and Concede: How States Respond to Internally Divided Separatists." *American Political Science Review* 105:275-97.

Cunningham, Kathleen Gallagher, Kristin M. Bakke, and Lee Seymour. 2012. "Shirts Today, Skins Tomorrow: Dual Contests and the Effects of Fragmentation in Self-determination Disputes." *Journal of Conflict Resolution* 56:67-93.

Davenport, Christian. 2004. "Human Rights and the Promise of Democratic Pacification." *International Studies Quarterly* 48:539-60.

Davenport, Christian. 2007a. "State Repression and the Tyrannical Peace." *Journal of Peace Research* 44:485-504.

Davenport, Christian. 2007b. *State Repression and the Domestic Democratic Peace*. New York: Cambridge University Press.

Davenport, Christian, and David A. Armstrong II. 2004. "Democracy and the Violation of Human Rights: A Statistical Analysis from 1976–1996." *American Journal of Political Science* 48:538-54.

Deutsch, Karl Wolfgang. 1953. *Nationalism and Social Communication: An Inquiry into the Foundations of Nationality*. Cambridge, MA: MIT press.

DeNardo, James. 1985. *Power in Numbers: The Political Strategy of Protest and Rebellion*. Princeton: Princeton University Press.

Downman, Scott Andrew. 2004. "Intra-ethnic Conflict and the Hmong in Australia and Thailand." PhD diss., Griffith University Department of International Business and Asian Studies. Accessed November 22, 2009. http://www4.gu.edu.au:8080/adt-root/uploads/approved/adt-QGU20061024.120129/public/02Whole.pdf.

Driscoll, Jesse. 2012. "Commitment Problems or Bidding Wars? Rebel Fragmentation as Peace Building." *Journal of Conflict Resolution* 56:118-49.

Duffy, Gavan, and Nicole Lindstrom. 2002. "Conflicting Identities: Solidary Incentives in the Serbo-Croatian War." *Journal of Peace Research* 39:69-90.

Ellingsen, Tanja. 2000. "Colorful Community or Ethnic Witches' Brew? Multiethnicity and Domestic Conflict during and after the Cold War." *Journal of Conflict Resolution* 44: 228-49.

Esteban, Joan, and Debraj Ray. 2001. "Collective Action and the Group Size Paradox." *American Political Science Review* 95:663-72.

Esteban, Joan, and Debraj Ray. 2008. "Polarization, Fractionalization and Conflict." *Journal of Peace Research* 45:163-82.

Fearon, James D., and David D. Laitin. 1996. "Explaining Interethnic Cooperation." *American Political Science Review* 90:715-35.

Fearon, James D., Kimuli Kasara, and David D. Laitin. 2007. "Ethnic Minority Rule and Civil War Onset." *The American Political Science Review* 101:187-93.

Fearon, James D., and David D. Laitin. 2000. "Violence and the Social Construction of Ethnic Identity." *International Organization* 54:845-77.

Fearon, James D., and David D. Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *American Political Science Review* 97:75-90.

Fjelde, Hanne, and Desirée Nilsson. 2012. "Rebels Against Rebels: Explaining Violence between Rebel Groups." *Journal of Conflict Resolution* 56:604-28.

Forsberg, Erika. 2008. "Polarization and Ethnic Conflict in a Widened Strategic Setting." *Journal of Peace Research* 45:283-300.

Fotini, Christia. 2008. "Following the Money. Muslim Versus Muslim in Bosnia's Civil War." *Comparative Politics* 43:461-80.

Fox, John, and Melvin Guyer. 1977. "Group Size and Others' Strategy in an N-person Game." *Journal of Conflict Resolution* 21 (2): 323-38.

Garfinkel, Michelle R. 2004. "On the Stability of Group Formation: Managing the Conflict Within." *Conflict Management and Peace Science* 21:43-68.

Geertz, Clifford. 1973. "The Integrative Revolution: Primordial Sentiments and Civil Politics in the New States." In *The Interpretation of Cultures*, edited by Clifford Geertz, 105-57. New York: Basic Books.

Gellner, Ernest. 1983. *Nations and Nationalism*. Oxford, UK: Blackwell.

Gorenburg, Dmitry. 2000. "Not with One Voice: An Explanation of Intragroup Variation in Nationalist Sentiment." *World Politics* 53:115-42.

Green, P. J., and B. W. Silverman. 1994. *Nonparametric Regression and Generalized Linear Models: A Roughness Penalty Approach*. New York: Chapman and Hall.

Hamburger, Henry, Melvin Guyer, and John Fox. 1975. "Group Size and Cooperation." *Journal of Conflict Resolution* 19:503-31.

Hardin, Russell. 1995. *One for All: The Logic of Group Conflict*. Princeton, NJ: Princeton University Press.

Hastie, Trevor J., Robert J. Tibshirani, and Jerome Friedman. 2001. *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*. New York: Springer.

Hechter, Michael. 1987. *Principles of Group Solidarity*. Berkeley: University of California Press.

Hegre, Håvard, and Clionadh Raleigh. 2009. "Population Size, Concentration, and Civil War. A Geographically Disaggregated Analysis." *Political Geography* 28:224-38.

Hegre, Håvard, and Nicholas Sambanis. 2006. "Sensitivity Analysis of Empirical Results on Civil War Onset." *Journal of Conflict Resolution* 50 (4): 508-35.

Hirschman, A. O. 1970. *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Cambridge, MA: Harvard University Press.

Hislope, Robert. 1997. "Intra-ethnic Conflict in Croatia and Serbia: Flanking and the Consequences for Democracy." *East European Quarterly* 30:471-94.

Horowitz, Donald L. 1985. *Ethnic Groups in Conflict*. Berkeley: University of California Press.

Jinadu, L. Adele. 2004. "Explaining and Managing Ethnic Conflict in Africa: Towards a Cultural Theory of Democracy." *African Journal of Political Science* 9:1-26.

Kalyvas, Stathis N. 1999. "Wanton and Senseless? The Logic of Massacres in Algeria." *Rationality and Society* 11:243-85.

Kalyvas, Stathis N. 2003. "The Ontology of 'Political Violence': Action and Identity in Civil Wars." *Perspectives on Politics* 1:475-94.

Kalyvas, Stathis N. 2008. "Ethnic Defection in Civil War." *Comparative Political Studies* 41: 1043-68.

Kim, Hyejin. 2006. "International Ethnic Networks and Intra-ethnic Conflict: Ethnic Trust and its Demise among Koreans in China." PhD diss., Rutgers Graduate Program in Global Affairs.

King, Ryan D., and Darren Wheelock. 2007. "Group Threat and Social Control: Race, Perceptions of Minorities and the Desire to Punish." *Social Forces* 85:1255-80.

Krasner, Stephen D. 1999. *Sovereignty: Organized Hypocrisy*. Princeton, NJ: Princeton University Press.

Lake, David A., and Donald Rothchild. 1996. "Containing Fear: The Origins and Management of Ethnic Conflict." *International Security* 21:41-75.

Lichbach, Mark Irving. 1995. *The Rebel's Dilemma*. Ann Arbor: University of Michigan Press.

Lilja, Jannie, and Lisa Hultman. 2011. "Intra-ethnic Dominance and Control: Violence Against Co-ethnics in the Early Sri Lankan Civil War." *Security Studies* 20:171-97.

Lin, Tse-Min, Chin-En Wu, and Feng-Yu Lee. 2006. "Neighborhood Influence on the Formation of National Identity in Taiwan: Spatial Regression with Disjoint Neighborhoods." *Political Research Quarterly* 59:35-46.

Lyall, Jason. 2010. "Ethnicity and Violence During Civil War: An Analysis of 'Sweep' Operations in Chechnya." *American Political Science Review* 104:1-20.

MAR (Minorities at Risk Project). 2009. *Minorities at Risk Dataset*. College Park, MD: Center for International Development and Conflict Management. Accessed April 26, 2011. http://www.cidcm.umd.edu/mar/.

Marshall, Monty G., Keith Jaggers, and Ted Gurr. 2009. *Polity IV Project: Political Regime Characteristics and Transitions, 1800-2002*. Version p4v2008 [Computer File]. College Park, MD: Center for International Development and Conflict Management, University of Maryland. Accessed May 11, 2013. http://www.cidcm.umd.edu/inscr/polity/index.htm.

Meuleman, Bart, Eldad Davidov, and Jaak Billiet. 2009. "Changing Attitudes Toward Immigration in Europe, 2002–2007: A Dynamic Group Conflict Theory Approach." *Social Science Research* 38:352-65.

Montalvo, José G., and Marta Reynal-Querol. 2005. "Ethnic Polarization, Potential Conflict, and Civil Wars." *The American Economic Review* 95:796-816.

Münster, Johannes. 2007. "Simultaneous Inter- and Intra-group Conflicts." *Economic Theory* 32:333-52

Olson, Mancur. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.

Posner, Daniel. 2004. "The Political Salience of Cultural Difference: Why Chewas and Tumbukas are Allies in Zambia and Adversaries in Malawi." *American Political Science Review* 98:529-45.

Ramsay, Kristopher W. 2008. "Settling it on the Field: Battlefield Events and War Termination." *Journal of Conflict Resolution* 52:850-79.

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

Riphenburg, Carol J. 2005. "Ethnicity and Civil Society in Contemporary Afghanistan." *Middle East Journal* 59:31-51.

Rohner, Dominic. 2007. "Reputation, Group Structure and Social Tensions". Unpublished manuscript, University of Cambridge, Cambridge, MA.

Shils, E. 1995. "Nation, Nationality, Nationalism and Civil Society." *Nations and Nationalism* 1:93-118.

Smith, Anthony. 1986. *The Ethnic Origins of Nations*. Oxford, UK: Blackwell.

Staniland, Paul. 2012. "Between a Rock and a Hard Place: Insurgent Fratricide, Ethnic Defection, and the Rise of Pro-state Paramilitaries." *Journal of Conflict Resolution* 56 (1): 16-40.

Urdal, Henrik. 2008. "Population, Resources, and Political Violence: A Subnational Study of India, 1956-2002." *Journal of Conflict Resolution* 52 (4): 590-617.

Varshney, Ashutosh. 2001. "Ethnic Conflict and Civil Society: India and Beyond." *World Politics* 53 (3): 362-98.

Vreeland, James Raymond. 2008. "The Effect of Political Regime on Civil War: Unpacking Anocracy." *Journal of Conflict Resolution* 52 (3): 401-25.

Weber, Max. 1964. *Theory of Social and Economic Organization*. New York: Free Press.

Weidmann, Nils B. 2009. "Geography as Motivation and Opportunity: Group Concentration and Ethnic Conflict." *Journal of Conflict Resolution* 53 (4):526-43.

Wilkinson, Steven. 2004. *Votes and Violence: Electoral Competition and Ethnic Riots in India*. Cambridge, MA: 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):316-37.

Wood, Simon N. 2001. "Mgcv: GAMs and Generalized Ridge Regression for R." *R News* 1: 20-25.

Wood, Simon N. 2006. *Generalized Additive Models: An Introduction with R*. Boca Raton, FL: Chapman and Hall.