Contagion of Ethnic Conflict:
Uncertainty in a Widened Strategic Setting*

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ABSTRACT. This paper examines the conditions under which ethnic conflict may be contagious. Since ethnic conflict and ethnic groups overlap international boundaries, this paper argues that they should be analyzed using a widened notion of a strategic setting. It is suggested that regions encapsulating each conflict and its neighboring states provide such an environment. From a general notion of uncertainty as a key characteristic of the strategic environment, two explanations are outlined. Firstly, it is suggested that the existence of ethnic kin between conflict actors and groups across the borders of the state in conflict is associated with an increased risk of onset of ethnic conflict in the state at risk of contagion. Secondly, if the conflict state and a neighboring state are similar in terms of the factors commonly associated with the onset of violent conflict, here indicated by the level of democracy and economic wealth, the likelihood of ethnic conflict is heightened in the state at risk. The hypotheses are evaluated statistically with new data on the ethnic constituency of actors as well as measures of structural similarities. While the ethnic kin hypothesis is supported in all models tested, the impact of structural similarities cannot be confirmed.

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**Introduction**

Is ethnic conflict contagious; i.e. does it under certain conditions spread from one state to another? Scholars and policy-makers alike have pointed out the contagious feature of political behavior. For instance, it has been noted that patterns of democratization have manifested themselves in “waves,” indicating dependency structures in time as well as in space. Unlike e.g. democratization the type of political behavior examined in this paper - ethnic conflict - should by its character typically be self-limiting in the sense that it is usually confined within the region inhabiting the ethnic constituency of the actors involved. Whereas it has the potential of spreading across states it should be delimited by smaller geographical localities than, for instance, ideological and religious conflict (Lake and Rothchild 1998). Hence, this paper attempts to identify a relevant context for studying conflict contagion and suggests that regions encapsulating each conflict and its immediate surrounding provide such an environment. Broadening the strategic setting of civil conflict is in line with recent arguments and findings within the civil war literature. It has been observed, and empirically substantiated, that the onset and prevalence of armed strife are connected in geographical clusters. This so-called neighborhood effect of conflict has in fact been identified as one of the most robust predictors of intrastate conflict (Hegre and Sambanis 2005). State level characteristics may hence be insufficient to provide a general understanding of what causes civil conflict.1

Although the neighborhood effect is considered a strong predictor of civil conflict, it has been a finding in need of an explanation. One question that arises is whether the geographical clustering of conflict is due mainly to a corresponding clustering of the causes of conflict (making the appearance of conflict correlate without actually affect each other) or if there are also contagion effects. Recently, Buhaug & Gleditsch (2005) examined precisely this issue and concluded that after removing the impact of the causes being clustered, there are indeed contagion effects of intrastate conflict to neighboring states. They highlight one area for future research: links between transnational ethnic groups.

The purpose of this paper is to examine the conditions under which ethnic conflict in one location can be linked to the onset of a new ethnic conflict in its proximity. The paper attempts to contribute to this research field by taking each instance of ethnic conflict as the point of departure and concentrating on the relative effects it potentially has on neighboring states in terms

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1 Not only do conflicts clearly manifest themselves in spatial clusters, civil wars in general, and perhaps ethnically mobilized or motivated strife in particular, are almost never fought in a whole country. Rather, many conflicts are confined within a more or less clearly defined part of a state’s territory. See, for instance, Buhaug, Halvard, and Scott Gates. 2002. The Geography of Civil War. *Journal of Peace Research* 39 (4):417-433.
of the likelihood of ethnic conflict being initiated there. It should, hence, be noted that this paper
does not intend to answer the question whether the onset of ethnic conflict in a state is or is not
casted by ethnic conflict in a neighboring state – the “source” of conflict is treated as constant.
Rather, it examines conditions making states more or less receptive to contagion of conflict. The
actors and the conditions examined are framed within a bargaining perspective. This implies that
the actors possess asymmetrical information, and that the actors’ decisions are mutually interde-
pendent and taken under uncertainty. I attempt to identify a relevant setting for which all observ-
vations under study can be considered at risk of conflict contagion, at least to some degree. From
a general notion of a widened strategic setting characterized by uncertainty, two explanations are
elaborated upon.

First, if the actors involved in ethnic conflict have kin living in a proximate state, there is a
possibility that the decision calculus of the kin group is altered in such a way that a violent con-
flict erupts. Secondly, if the structural conditions of a state in conflict are similar to those of a
proximate state, ethnic actors in the proximate state are faced with similar informational struc-
tures and may, hence, make the same decision about initiating war. The first explanation is as-
essed empirically using new data on the ethnic constituency of actors involved in ethnic conflict
and actors in their proximity, while the second explanation identifies two indicators of structural
similarities: the economic wealth of the country with conflict resembles that of and a neighboring
state and the level of democracy between the two states is similar.

The hypotheses are evaluated with a survival model (Cox regression) and with logit regression
on two different subsets in the post-1989 period. The first subset is formed by dyads of all con-
flict states and all their neighbor states. The second subset is somewhat smaller as it includes dy-
ads with all conflict states and only the neighbors that are in direct proximity to the zone of con-
flict. The two subsets are included to evaluate whether contagion is limited to only the neighbor-
ing states bordering the conflict zone or if it also extends to neighbors beyond the area of fight-
ing.

The different regressions suggest the same pattern in both subsets; while the results provide
support for the ethnic kin explanation, the hypotheses on structural similarities cannot be con-
firmed. The results are very similar for the two subsets, indicating that conflict contagion may
occur also to neighbor states away from the zone of conflict.

The outline of this paper is as follows. After a brief review of previous literature on contagion,
the theoretical argument and hypotheses are presented. Then follows a discussion on the research
design applied in the paper. The results from the statistical evaluation of the hypotheses are then
presented. By way of conclusion, the findings are then summarized.
**Previous Contagion Studies**

Traditionally, contagion processes have been studied extensively in disciplines not directly relevant for conflict studies, such as in sociology or medicine. When it comes to conflict studies, contagion has been examined with regard to e.g. coups (Li and Thompson 1975), riots (Horowitz 2001), ethnic dissimilation/radicalization (Kuran 1998), protests (Hill, Rothchild, and Cameron 1998; McAdam and Rucht 1993), interstate conflict and war (Siverson and Starr 1990; Siverson and Starr 1991), and military intervention (Hammarström and Heldt 2002).

Of closer relevance to this project are those studies that examine when one intrastate (ethnic or not) armed conflict under certain conditions can be linked to the onset of another intrastate conflict. However, this research area is much more recent and less developed than, for instance, that of the spread of interstate conflict. Oftentimes, the salience of ethnic kinship is discussed in this literature. For instance, Brown claims “internal conflicts are most likely to spark conflicts in neighboring states when ethnic groups straddle formal international frontiers: divided ethnic groups are particularly effective conflict transmitters” (Brown 1996:595). Gleditsch & Walter (2003) argue that to explain civil war, one has to take into account factors both within and outside a state. As an example of an outside factor they emphasize the role of transnational links between groups in the decision to initiate a civil war. In an empirical application, Gleditsch (2003) finds support for the argument that the existence of transnational ethnic kin influences the probability of civil war. The logic behind the finding is argued to be that transnational ethnic groups increase the potential for support to insurgencies. In addition, Sambanis finds that having a neighbor at war is a very robust predictor of the onset of ethnic civil wars, whereas it cannot explain the onset of revolutionary and other civil wars (Sambanis 2001). If ethnic wars are linked in space, while revolutionary wars are not, that must indicate that ethnic wars have traits not found in the latter. For instance, it may because the actors involved in the conflicts are linked by ethnic kinship across borders.

The recent contribution by Buhaug & Gleditsch (2005) mentioned previously also contributes to the field of contagion processes in intrastate conflict. The study is particularly relevant for this project, for several reasons. They approach the question whether dependence among observations of intrastate war is an artifact of the clustering of what predicts war, such as poverty and poor governance. Buhaug & Gleditsch conclude that after removing the impact of the clustered causes of conflict, there are indeed contagion effects of intrastate conflict to neighboring states.

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The area they emphasize for future research, links between transnational ethnic groups, is evaluated in this paper.

The salience of such links has been emphasized by many scholars. One potential diffusion effect of the presence of ethnic kin is a situation when a domestic violent conflict triggers an international crisis or conflict. This question has been discussed and evaluated empirically by several researchers, including Davis et al (Davis, Jaggers, and Moore 1997; Davis and Moore 1997; Moore and Davis 1998) and Trumbore (2003). Transnational ethnic kin has also been shown to increase the likelihood of armed conflict between states (Davis, Jaggers, and Moore 1997; Davis and Moore 1997; Moore and Davis 1998). Saideman (2001; 2002) studies the international aspects of ethnic kin in a slightly different way. His focus is on intervention and he finds support for the argument that if a group has ethnic ties with an external actor, it is more likely to receive outside support in the form of intervention.

In previous papers, I tested the role of ethnic kin as a transmitter of conflict, though in a slightly different manner. When examining dyads of all neighboring states in the world, i.e. extending beyond taking conflict states or zones as points of departure, the interaction of ethnic conflict in one state and ethnic kinship between states was found to increase the likelihood of ethnic conflict in a neighboring state (Forsberg 2005a; 2005b).

**Contagion in a Bargaining Perspective**

The bargaining approach is frequently employed to account for both inter- and intrastate conflict, in all of its phases: onset, continuation and dynamics, resolution, and consequences. At the core of models within the bargaining perspective of war is the puzzle of the *ex post* inefficiency of violent conflict; i.e., given the costs involved in war the actors would be better off locating non-violent bargains. Any explanation within the bargaining approach, hence, must account for why the actors nevertheless under certain conditions fail to reach a pre-war bargain and end up fighting (Fearon 1995).

A few scholars have applied the bargaining perspective to a contagion context, notably Lake & Rothchild (1998), and Fearon (1998). Lake & Rothchild categorize the spread of ethnic conflict into two phenomena: escalation (more actors are drawn into an existing conflict) and diffusion (one conflict increases the likelihood of another conflict). While the first category consists of a

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quite different phenomenon than the one in focus of this paper, the second is highly relevant and provides a basis for this study. While stating that the causes of the diffusion of ethnic conflict is similar to those that explain internal ethnic conflict, Lake & Rothchild argue that for conflict diffusion to transpire, the conflict in the first locale must exacerbate one or more of the strategic dilemmas advanced in the bargaining theory of war: the information failure, the problem of credible commitment, or the security dilemma.\(^4\) With these dilemmas as a point of departure, Lake & Rothchild propose four different paths by which ethnic conflict may spread; ethnic conflict may affect other countries directly by altering the ethnic composition of those countries (e.g. through refugees); ethnic conflict in one place may inspire or force actors in other states to increase their demands; ethnic conflict may prompt groups to reevaluate the effectiveness of existing ethnic contracts; or groups may reconsider both how costly it would be to challenge existing structures and the likelihood of such a challenge ending successfully. In common for all four explanations is that they rest on the notion of changes in beliefs and increased uncertainty of the actors involved.

This paper maintains that the bargaining approach is applicable to the study of contagion in that actors (ethnic groups) in conflict states and their neighbors are part of the same strategic setting. Taking a larger strategic environment into consideration is in line with recent arguments and findings by Walter (2006). In predicting the onset of ethnically advanced demands for self-determination, she claims that one should not only consider the capabilities and grievances by each conflicting dyad (i.e. a government and an ethnically mobilized group) but also a widened notion of strategic setting, both temporally (earlier challenges) and spatially (other potential challengers present within a state at the same time). This is also in accordance with recent critiques of studies that regard intrastate conflict as a phenomenon delimited within a nation-state and explained by state-level measures, which may be an oversimplified way of viewing conflict (Buhaug and Gleditsch 2005; Gleditsch 2003; Gleditsch and Walter 2003).

If one assumes the transnational dimension is crucial when analyzing the behavior, preference structures, and beliefs of the actors involved, one should incorporate such aspects in the analysis. Actors make choices and update their beliefs corresponding to the strategy that best fulfills their goals based on what they observe in the environment embedded in their strategic setting (Lake and Powell 1999). Therefore, events and processes within a strategic setting affect the decision calculus of actors, sometimes compelling them to initiate war, also in cases when the strategic environment straddles international boundaries.

\(^4\)These are the three dilemmas discussed by Lake & Rothchild. They differ slightly from those proposed by Fearon (1995) since he does not discuss the security dilemma but pinpoints issue indivisibility as a third dilemma, in addition to the information failure and the problem of credible commitments.
A defining characteristic of a strategic setting is uncertainty. While the opportunity structures and willingness of the actors may explain why actors have conflicting goals and opposing interests, it cannot explain why they end up pursuing their goals using violent means (Öberg 2000). To end up in violent ethnic conflict, an element of uncertainty is required (Öberg 2003). Uncertainty may influence the likelihood of success should conflict be initiated, and groups would only commit to risking violent conflict if they perceived a reasonable chance of success, regardless of the amount of grievances (Hill, Rothchild, and Cameron 1998). Lake & Rothchild (1998) discuss uncertainty in terms of fear, i.e. group-level fears of the future. It is when groups begin to fear for their safety that they may face the strategic dilemmas outlined above. Observing events within their strategic setting may, hence, exacerbate a group’s perception of uncertainty.

From this general statement of uncertainty, two sets of implications framed within the bargaining perspective are drawn. Firstly, transborder links between actors in the same strategic environment indicate a potential for processes in which a group in one state inspire a kin group in another state to increase demands and initiate armed strife. Secondly, if actors in a state without conflict are facing similar structural conditions as actors in their environment which have chosen to initiate conflict, they may make the same decision. The remaining part of this section briefly elaborates on each of these paths by which conflict may spread and subsequently formulates testable hypotheses.

**Links between kin groups across state boundaries**

Ethnic groups often straddle international borders. The extent to which a group can be considered as one unit across those borders obviously varies, but in many cases kin across states assist each other directly in, for example, mobilization, providing safe haven, or they (more indirectly) make decisions based on the position and behavior of kin across borders. As mentioned previously, many studies have also emphasized the salience of such groups in predicting intervention (Saideman 2001; 2002) or as a trigger of international dispute (Davis, Jaggers, and Moore 1997; Davis and Moore 1997; Moore and Davis 1998). It is plausible that if an ethnic group rebels or joins an ongoing war in one state, it generates uncertainty among kin in neighboring states. Faced with a change in the bargaining position and behavior of kin, group members across borders are confronted with a new decision calculus. Should the group replicate the behavior of its kin, pay no heed to it, or even downplay its own demands fearing brutal countermeasures by the government in their home state? Given the uncertainty in information about relative strength in the bargaining position vis-à-vis the government, the group is faced with an arduous decision.
The kin group may reevaluate the situation in its home state and potentially act on it by increasing its demands and/or challenge the government. Such potential for inspiration and demonstration effects should be ever present among kin groups, but is hazardous to observe. Hill, Rothchild & Cameron state that “Learning that another group has achieved an important victory by applying mass pressure against a particular government, for example, can provoke similar behavior.” (1998:66). Hence, given ethnic conflict in a state, kin groups across borders may get inspired to increase their own demands, which enhances the risk of armed strife (Brown 1993; 1996; Lake and Rothchild 1998). Kuran (1998) discusses processes of ethnic dissimilation, i.e. ethnification leading to sharper divisions between ethnic groups in society (its antonym being assimilation). He furthermore argues that such a process under certain circumstances takes on international dimensions, by what he refers to as a demonstration effect. Another alternative is that groups adjacent to a conflict state involving kin experience heightened uncertainty by being forced to reevaluate their own security arrangements and use force. For instance, if one group believes that the other group will be affected by the armed conflict and challenge the existing power relations, a preemptive strike may be the most rational outcome, i.e. before the adversary has grown stronger or becomes more mobilized (Lake and Rothchild 1998:26).

Based on this discussion on the role of ethnic kin, the following hypothesis is formulated:

**H1:** Given ethnic conflict in a state, if any of the conflict actors has kin in a neighboring state, the probability of ethnic conflict onset in the neighboring state is increased.

**Similar conditions among states and actors in the strategic environment**

Structural similarities are often forwarded in different types of studies when trying to discriminate between cases that adopt contagious behavior and cases where it does not occur. Similarities among actors and circumstances has also often been put forward when attempting to identify between which actors conflict behavior spread, see for instance Hammarström & Heldt (2002). The bargaining perspective of war is no exception. The extent to which actors within a strategic environment have access to similar information varies. Hill et al (1998) argue that groups which share political goals and are faced with similar informational and structural conditions are likely to make similar choices and generate similar outcomes. Hence, an ethnic group which has access to similar information as another ethnic actor who has initiated armed conflict within a shared strategic environment is more likely to violently promote their cause than an ethnic group faced with different conditions. The obvious question one can raise is why similarity alone is associated with actors replicating each other’s behavior. Hill et al (1998) claim that: “Information on political
opportunity will spread and promote further conflict within and across groups only when it offers the individuals who receive it a reasonable prospect of further net gains[...]. Individuals who have common goals and who have access to the same information will make the same choices about participation” (page 68).

The type of informational structures that can be similar (or different) among the actors in the strategic setting can be separated into the classical division of grievances/willingness and capabilities/opportunities (Gartzke 1999). Clearly, states may be different in many other respects, but only when there are similarities with regard to the sources of conflicting interests there is reason to believe that the similarities would matter. Potential conflict parties require both capabilities and opportunities to initiate conflict (Gartzke 1999; Hill, Rothchild, and Cameron 1998), but, as mentioned previously, uncertainty is also a prerequisite to account for a violent outcome. Similarities regarding capabilities and opportunities between actors in conflict and other actors within a shared strategic surroundings generate uncertainty as the actors at risk observes a violent outcome involving groups who are in the same situation. Put differently, when faced with similar circumstance, the threat of conflict becomes real as one group may fear that the opponent will perceive the same benefits as another group in a similar situation did when initiating conflict. Groups in a state lacking the same conditions concerning capabilities and grievances would, on the other, rarely compare themselves to the situation emerging in a neighboring state and the level of uncertainty would be smaller.

When it comes to observing grievances and capabilities, one problem is that many of the ways of observing actors’ material capabilities are only known ex ante, both for the actors involved and the researchers attempting to observe and measure them. Thus, one runs the risk of being tautological if, for instance, trying to assess the resolve of the actors based on their conflict behavior. However, there are structural conditions of capabilities and grievances which are less problematic from this perspective. Economic wealth, usually measured by GDP/capita level, is often proposed as a circumstance which generates both willingness and capabilities. Hence, the following hypothesis is formulated:

H2a: Given ethnic conflict in a state, a neighboring state which is similar in terms of economic wealth is more likely to experience onset of ethnic conflict.

Another condition is the level of democracy of a state. In highly autocratic states, groups are assumed to have a large amount of grievances, yet lacking the opportunity to initiate armed strife. In stable democracies, on the other hand, actors may have the opportunity to pursue their de-
mands but democracies are less likely to generate enough grievances to promote violence. Hence, the following hypothesis is formulated:

H2b: Given ethnic conflict in a state, a neighboring state which is similar in terms of the level of democracy is more likely to experience onset of ethnic conflict.

**Implications for Application: Data and Methodology**

**Risk and survival: identifying relevant observations**

The theoretical argument builds on the notion of a widened strategic setting characterized by uncertainty and this has been the key concern identifying a relevant empirical domain and setting up a data structure that accurately reflects this. The point of departure is the state which has an ethnic conflict at any point in the time frame analyzed (1989-2004) and the dataset includes yearly dyads of all those conflict states, with the states that are in their proximity. Thus, the first state of the dyad has an ongoing ethnic conflict and the second state is considered at risk of contagion. The first state, however, may experience ethnic conflict on and off from one year to another in the time period examined. In addition, there may be a lag in the conflict inducing effect it may have on proximate states. Thus, continuous spells of ethnic conflicts in the first state was identified by including all active conflict years plus an additional five years after the end of the conflict, or until the end of the observation period (usually 2004, unless the state ceases to exist). These sets of conflict spells will also treat conflicts being inactive for a few years as a continuous spell of conflict. For instance, the conflict over Casamance in Senegal is active (according to the Uppsala Conflict Data Project) 1990, 1992-1993, 1995, 1997-2001 and 2003 but is recorded here as a continuous spell from 1990 until the end of the observation period (2004).

In operational terms, this paper tests two slightly different ways of identifying the strategic setting. Using the spells of conflict in the first state of the dyad as the point of departure is the same for both alternatives, but the number of states at the second end of the dyads differ slightly. The first data composition includes dyads consisting of the conflict state and all its neighboring states, i.e. one cross-section for each dyad, observed annually. This gives a total of 2392 observations. The second alternative relies on the notion that treating a conflict as a phenomenon on an aggregated state-level may be inappropriate since many ethnic conflicts are limited to a small part

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5 Having 1989 as the starting point of the time-period is a consequence of data availability. The data on armed conflict provided by UCDP are disaggregated on the dyadic level from 1989 onwards.
of a state’s territory and may hence be far away from some of the neighbor states. For instance, for many of the years examined, Russia has one active conflict, namely the one in Chechnya. It may be rather farfetched to assume that the conflict in Chechnya has serious implications for some of Russia’s neighbors, such as China. Hence, the second data structure includes dyads of all states with conflict and the neighbors that are in direct proximity to the actual conflict zone. The primary reason for incorporate both subsets in the empirical analysis is that they may capture different types of contagion processes. Contagion as such is unobservable and we thus have to rely on testing the covariates’ impact on the onset of ethnic conflict in the state at risk of contagion. If the empirical analysis yield support for both subsets, one has reason to believe that contagion processes are not limited to the direct proximity to the conflict zone by e.g. the transfer of arms. It would also provide preliminary evidence that contagion, for instance, can be a process of groups replicating the behavior of kin groups in the conflict state.

All hypotheses are tested with both alternative sets of observations. Again using the example of Senegal, the first method incorporates dyads of Senegal and Gambia, Guinea-Bissau, Guinea, Mauritania, and Mali, respectively, whereas including only direct neighbors to the conflict area involves only the dyads with Gambia, Guinea-Bissau and Guinea. Also, the number of neighbors to a conflict zone may vary over time as the size of the conflict zone grows larger, or shrinks. Identifying which neighbor states that are directly adjacent to each conflict zones in any given year was done by examining the maps and data part of the View Conflict Program, based on coding work by Halvard Buhaug. After removing those dyads where the second state is not a direct neighbor to the zone of conflict, the number of observations drops to 1693.

Variables and Measurements

Dependent variable

The dependent variable is the onset of intrastate ethnic armed conflict in the second state of the dyad, i.e. the one considered at risk. By intrastate armed conflict I adhere to the definitions and coding rules developed and used by the Uppsala Conflict Data Program (UCDP). Thus, an intrastate armed conflict is “a contested incompatibility that concerns government or territory or both where the use of armed force between two parties results in at least 25 battle-related deaths” in one year (Harbom 2005:28). Conflict onset is here operationally defined as either the onset of a new intrastate armed conflict, the onset of a new warring dyad (since each conflict can include more than one dyad), or the re-emergence of armed conflict or a warring dyad after at least three

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6 The View Conflict program can be downloaded at http://www.svt.ntnu.no/geo/forskning/konflikt/viewConflicts/
years of inactivity. Since the actors involved in conflict and in focus here are ethnically mobilized groups, the conflicts with an ethnic dimension were separated from other types of armed conflict. Data on type of conflict (e.g. ethnic vs. ideological) is, for instance, provided by Fearon & Laitin (2003) Licklider (1995) and Sambanis (2000; 2001). By cross-checking the conflicts listed as ethnic by those researchers (primarily Fearon & Laitin) with the conflict data provided by the UCDP I attempted to corroborate the data sources. The UCDP provides annual information on each warring dyad in an armed conflict (and one armed conflict can involve more than one warring dyad) which makes it possible to identify several onsets of violence in each armed conflict (and, of course, several conflicts in one country a given year). For consistency, I followed the coding rules of the UCDP to determine the years of conflict onset, whereas the other sources are used to identify which conflicts are ethnic. By ethnic conflict, I follow Fearon & Laitin’s coding: ethnic conflicts are those “in which the fighters were mobilized primarily along ethnic lines” (p. 79). Hence, each country-year with at least one onset of armed ethnic conflict as defined above is coded (1) whereas all other observations are coded (0) Also note that years of ongoing conflict past the year of onset are coded as (0), i.e. as non-onsets and are, thus, not censored. This decision was based on the importance of including all years when a country is considered at risk of contagion; in years following an onset the state are still at risk since each state can have more than one active ethnic conflict any given year. Hence, dropping those observations from the analysis is inappropriate.

Independent variables

Identifying a relevant empirical domain constituted a first cut. Next, the conditions that are proposed to explain varying outcomes among the cases (i.e. among proximate states) in empirical terms are elaborated. The hypotheses pinpointed three variables to be evaluated: ethnic kin existing between the state with conflict and a proximate state; a shared level of democracy between the two states; and, similarities in terms of economic wealth between the two states.

Ethnic kin

If at least one of the ethnic groups in conflict was also present in a proximate state, the variable was coded (1); otherwise (0). Coding this variable was conducted in several steps. First, the ethnic constituency of the conflict actors, i.e. the governments and the opposing rebel groups, in the conflict state was identified. The primary sources for coding the ethnic base of the opposition groups are the descriptions of the conflict and the actors incorporated in the Uppsala Conflict
Database⁷, the group chronologies and descriptions provided by the Minorities at Risk project⁸, and the World Directory of Minorities (1997). Coding the ethnic base of governments is significantly more intricate. Regimes do not typically admit to being the representative of only a portion of its citizenry, even when this is obviously the case. In addition, regimes change over time, often as a result of ethnic conflict (e.g. Rwanda). The main source for coding the ethnic base of governments was the Ethnic Groups in Power (EGIP) Project (Cederman and Girardin 2005).⁹ In addition, country specific sources as well as country experts were consulted on a case-by-case basis. Since each given year in a conflict state can involve several different actors, many different ethnic groups can be involved in conflict at the same time. For instance, in Myanmar/Burma in 1992, Arakanese, Kachin, Karenni and Karen were simultaneously involved in ethnic conflict.

After having identified the ethnic constituency of the conflict actors, the groups were compared year by year and for each proximate state to evaluate kinship. This was conducted by examining Fearon’s list of ethnic groups (2003). Fearon’s data is useful as a consistent list of ethnic groups, not suffering from the selection bias inherent in the Minorities at Risk data truncated the data, and is therefore the main source for determining ethnic kinship between actors in the strategic settings analyzed. Fearon’s list produced in accordance with his criteria of what constitutes an ethnic group includes 822 ethnic and ethnoreligious groups in 160 countries. All the groups included make up at least 1% of the population.

The ethnic kin explanation of conflict diffusion, as outlined in the theoretical section, does not necessarily assume that the ethnic group (or ethnically based government) being triggered to initiate conflict in the state at risk is the same as the one coded as kin. More groups could plausibly be affected. For instance, the dyad Afghanistan and Pakistan is coded as having ethnic kin since both countries have a Pashtun minority. It is possible that Pashtuns being involved in conflict in Afghanistan may generate uncertainty among several of the other groups in Pakistan and not being limited to affecting the Pashtun community. For instance, other groups in Pakistan may fear that in the future Pashtuns could challenge the power balance by being inspired by events involving its kin in Afghanistan.

**Structural similarities**

To generate a variable which captures similarities in terms of the level of democracy between the two states of the dyad, I used the polity2 variable of the Polity IV project.¹⁰ The variable ranges

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⁷ See [http://www.pcr.uu.se/database/index.php](http://www.pcr.uu.se/database/index.php). The conflict descriptions and warring party information for each conflict is found in the “Basic Search” part of the database.

⁸ The project website is located at [http://www.cidcm.umd.edu/inscr/mar/](http://www.cidcm.umd.edu/inscr/mar/)

⁹ I am grateful to Lars-Erik Cederman and Luc Girardin for sharing this data with me.

¹⁰ The website of the polity project is found at: [http://www.cidcm.umd.edu/inscr/polity/index.htm](http://www.cidcm.umd.edu/inscr/polity/index.htm)
from -10 (consolidated autocracy) to 10 (consolidated democracy). In accordance with previous studies, the variable was transformed into three categories based on cut-off points; democracy (7 through 10), autocracy (-10 to -7), and inconsistent regime (-6 to 6), and then compared pair-wise for the dyads. If the two states of the dyads are both either consolidated democracies, consolidated autocracies, or inconsistent regimes the variable is coded (1); otherwise (0). The point of comparison is, thus, that the two states differ in terms of polity status (e.g. one is a consolidated democracy and the other an inconsistent regime, etc).

The variable concerning similarities in economic wealth was generated in a similar manner, with GDP/capita as the indicator of economic wealth. Gleditsch (2002) provides GDP/capita data based on Penn World Tables (Heston, Summers, and Aten 2002) but cover more countries. The time-series covers the years up to 2000; hence, data for the remaining years of the times-series are extrapolated. First three categories were identified on the basis of the variable’s distribution in the dataset. The 90th percentile forms the cut-off point for high GDP/capita and the 10th percentile is the cut-off for low GDP/capita whereas the observations in between belong to an intermediate category in terms of economic wealth. If the two states of the dyads are coded as both having either high, low or intermediate GDP/capita, they are coded as structurally similar in terms of economic wealth (1); otherwise (0). To secure temporal order, the shared polity and shared GDP/capita variables are lagged one year.

Controls
This paper aims to isolate and evaluate whether ethnic groups and governments take strategic decisions to initiate and/or join ethnic conflict partly based on events outside their own state, yet within the same strategic environment. Hence, it is crucial to remove the impact of several structural and/or grievance-oriented variables that potentially, and simultaneously, have bearing on predicting the onset of ethnic conflict as well as on one or more of the covariates of the model. Even in the absence of links between ethnic actors and similarities across states, some states are more susceptible to conflict contagion as they face more uncertain conditions to begin with. Since the point of departure of this paper for studying conflict contagion is the identification and selection of strategic settings, a certain minimum degree of uncertainty is assumed. Some uncertainty is also presupposed by all rationalistic explanations of war (Gartzke 1999; Melander 1999:233). However, within a strategic setting, the level of uncertainty may vary substantially due to domestic conditions.

One such condition is the ethnic composition of the state, i.e. the number and relative sizes of the ethnic groups present in the state. The bargaining perspective adhered to in this paper as-
sumes power parity to be associated with more uncertainty, hence an increased likelihood of vio-
lar conflict (Reed 2003). In this paper, I control for situations where a state is characterized by
evenly matched ethnic groups in terms of the size of the constituency. In operational terms this
indicates the absence of a dominant group, in this case that there is no group which constitutes
more than 70% of the population. If the state is considered having power parity in terms of the
group sizes, it is coded (1); otherwise (0). The variable was coded on the basis of the group pro-
portions included in Fearon’s list of ethnic groups (Fearon 2003).

Apart from the parity variable, a set of standard controls for the study of onset of internal war
is included, and they all refer to domestic conditions in the state at risk rather than referring to
links to or similarities with the state in conflict. GDP/capita has been found to be negatively re-
lated to the onset of civil war, since wealth for instance should promote less, and poverty more,
incentives for insurgency. Population size is often included as a control variable in studies of civil
war, since one could argue – although less clear cut – that the larger the population, the more
opportunities for rebellion. Hence, population size is expected to have a positive effect on the
onset of ethnic conflict in this study. The data on GDP/capita and the size of the country’s
population are provided by Gleditsch (2002) up to the year 2000; data for the remaining years of
the times-series are extrapolated. Previous research suggests that the effects of GDP/capita and
population size are best captured as a decreasing function of diminishing return. Consequently,
these two variables are transformed using their natural log.

Lastly, this paper controls for the impact of the democracy score of the state at risk. The find-
ings about democracy and its effect on civil war suggest an inverted U-shaped relationship (Hegre
et al. 2001). Hence, in states with either a high autocracy or a high democracy score, the risk of
armed conflict is lower than in semi-democratic states. To capture this relationship, in addition to
the untransformed polity2 variable, a squared term of the variable is included in the model. Popu-
lation size, GDP/capita, and democracy score are lagged one year to secure temporal order. The
parity variable does not vary over time and is, hence, not lagged.

Estimation techniques

As mentioned previously, the observations evaluated here constitute a risk set under which con-
flict contagion is possible. The hypotheses are evaluated using duration analysis with discrete data
(i.e. annual). Each state which neighbors a conflict state/zone is considered at risk, i.e. are “pa-
tients,” each patient is given different “treatments” (i.e. the proposed covariates), and the pa-
tient’s survival time until failure (i.e. onset) is taken into account. Using Cox regression, the fol-
lowing question is evaluated: given that a number of states experienced failure out of the states
that were at risk, what is the probability that these failures occurred in these states and not in some other number of states in the risk set? This is equivalent to approximating the partial likelihood function. By using the Cox model, the form of the time dependency (i.e. the shape of the hazard rate) is left unparameterized. The duration dependence exhibited by the data is instead regarded as “nuisance” (Box-Steffensmeier and Jones 2004). This study has no prior theoretical notions on the form of the duration dependency of contagion processes; the real interest lies in the correlations between the covariates and the dependent variable; hence, Cox appears to be a more suitable model strategy for this study compared to parametric models.

The state at risk is followed over time from entering the data until it is no longer considered at risk of failure. In such a period it is possible that the state experiences more than one onset of ethnic conflict. Hence, in the regressions multiple failures are allowed for, in which the dependence between ordered failures are taken into account by stratifying observations according to the sequences of the spells in between onsets (i.e. a conditional risk set model with gap time). Subjects that never fail are right-censored. Also, in the dataset two or more subjects (states at risk) can fail at the same time. To account for this, the Efron method for tied events is applied (Cleves, Gould, and Gutierrez 2004:143).

Both versions of the data structure reflect that a state can simultaneously be part of several different strategic settings. The benefit of this design is that one is able to capture that states can be subjected to contagion from several different locations. However, there are also drawbacks since it creates much dependency across observations (which generates unbiased coefficients but make them appear more significant than they really are) especially among the states at risk of contagion. This is approached by clustering the standard errors on the conflict state.\footnote{I also ran all regressions with the standard errors clustered on the risk state and this did not alter the results in any substantive manner.}

As a robustness test, the results from replicating all models using logit regression are presented as well in the results section. To ease interpretation, the logit coefficients are also used to generate discrete and factor change coefficients and predicted probabilities. Two sets of logit regressions were run: pooled logit analysis with the standard errors clustered on the conflict state, and panel data logit analysis with random effects. The results did not differ in substance; hence, only the first set of logit regressions is reported.
Empirical Patterns and Analysis

This section starts with a presentation of basic summary statistics to get a grasp of the characteristics of the observations analyzed. Then follows the statistical evaluation of the hypotheses and a discussion about the substantial implications of the results for the theoretical framework. The hypotheses are evaluated first for the subset including the conflict states and all its neighbors, regardless of proximity to the actual conflict zones, followed by an evaluation of the same models using the smaller subset of conflict zone neighbors. All figures and tables referred to are located in the Appendix.

Descriptive statistics

Table 1 reports summary statistics for the variables, based on the observations of the larger sample. Regarding the three variables which were transformed for statistical analysis (population size, GDP/capita, and polity scores), the regular values rather than the log-transformed or squared term are included to get an idea of the distribution of the real values.

As can be seen from the standard deviations in Table 1, most of the variables have widely scattered distributions. One feature to keep in mind is that the values do not represent the actual mean characteristics of a state or a dyad, but the average of the observations. Since each state is usually included in more than one cross-section depending on the number of countries that can

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12 This GDP/capita represents the value for Burundi in 2004. negative number is a consequence of extrapolation. Burundi’s GDP/capita decreased during the 1990s; hence, when data for the years 2001-2004 were extrapolated, the last year generated showed up as a negative number. However, since the variable is log-transformed in all the models evaluated statistically, the negative number has no impact.
be the source of contagion (times the number of years of the times-series), states with many neighboring countries are overrepresented.

Almost twenty-two per cent (or 525) of the observations are coded as sharing one or more kin groups. Regarding the number of conflict onsets, 178 dyad-years are coded as having at least one onset of ethnic conflict in the state at risk. Cross-tabulating these two variables reveals that among observations with ethnic kin, 12% are coded as onset of ethnic conflict, while only 6% of the non-kin cases experienced conflict onset. The difference is significant at 99%.

The other two variables proposed by the theory is “Shared GDP/capita” and “Shared polity level.” About two-thirds of the observations consist of dyads which have similar GDP/capita levels, which indicates that economic poverty and wealth are clustered geographically. In terms of democracy, the distribution shows that less than half of the observations share similar levels of polity.

Evaluating the hypotheses

Table 2 – in Appendix – presents the results from Cox regressions based on the first subset; the conflict states and all its neighbors. Note that since the baseline hazard is left unparameterized, the Cox model does not estimate a constant term. A hazard rate larger than 1 indicates a positive relationship while a rate smaller than 1 imply a negative correlation. Model 1 evaluates the first hypothesis, i.e. that kinship between actors in the conflict states and its neighbors increases the risk of conflict onset in the state at risk of contagion. The table reports a statistically significant (99%) hazard rate of 1.510, which indicates that the presence of ethnic kin in the dyad increases the risk of failure/conflict onset with 51%, while holding the control variables constant. Models 2 and 3 report the results from the hypotheses about structural similarities between the state in conflict and its neighbor states. Although the hazard rates are positive, as proposed by the hypotheses, they are not statistically significant. However, both the shared polity and the shared GDP/capita variables are index variables composed by different types of similarities. Hence, there is a possibility that, for example, the effects of shared autocracy and shared democracy are in opposing directions and cancel each other out. Hence, the models were re-estimated with the three variables for shared polity (shared democracy, shared autocracy, and shared inconsistency in regime) in Model 3 and shared GDP/capita (high, low, and intermediate GDP/capita), in Model 2. In the case of Model 3, neither of the three polity variables were significant predictors of ethnic conflict onset while dividing GDP/capita levels in Model 2 into three variables produced a problem of a zero cell count and could not be estimated (there were no failures for the category of both the conflict state and a neighbor state having high GDP/capita). Lastly, Model 4 includes
all variables. The estimates corroborate the findings from Models 1-3, since no substantive changes are detected. When Model 4 is reestimated with the shared polity and shared GDP/capita variables divided into its three categories, one of the GDP/capita variables is significant. When the conflict state and the state at risk both have high GDP/capita, the risk of conflict onset is significantly decreased (at 99.9%). The hazard ratio is indeed so small (5.29e-16), that the risk is negligible.

In Table 3, the results from estimating the same covariates on the same subset are presented, this time based on logit estimates. Table 3 reproduces the same pattern; i.e. it supports the ethnic kin hypothesis, while lending no evidence to the second and third hypotheses. To ease interpretation, logit coefficients can be calculated into factor change coefficients. The estimation of the effect of the ethnic kin variable in the full model shows that having ethnic kin increases the odds of conflict onset in the neighbor state by a factor of 1.83, controlling for the other variables of the model. In addition, Figure 1 (in Appendix) illustrates the predicted effect of ethnic kin on the probability of ethnic conflict, over different values for GDP/capita while the other variables are held at their mean values. When the models 2-4 were re-estimated with the three variables for shared polity and shared GDP/capita, the polity variables were not significant while the GDP/capita levels could not be estimated simultaneously, due to collinearity and zero cell count problems.

Tables 4 and 5 report the results from the same regressions as in Tables 2 and 3 but exclude those cases not in direct proximity to the conflict zones. First, Table 4 presents the hazard rates from the Cox duration analysis. With regard to the explanatory variables, the pattern discovered in Tables 3 and 4 remains substantively the same when estimating the subset of conflict zone neighbors. The presence of ethnic kin in the dyad increases the risk of failure/conflict onset with 52%, while holding the control variables constant, and is significant at 95% (i.e. slightly less significant compared to Table 1). Structural similarities do not significantly predict the onset of ethnic conflict.

Lastly, Table 5 reports the logit estimates based on the smaller subset. Again, the presence of ethnic kin significantly increases the likelihood of the onset of ethnic conflict in the state at risk of contagion. In substantial terms, having ethnic kin increases the odds of conflict by a factor of approximately 1.80, when the other variables of the model are held constant.

Before further discussing the substantial meaning of the results regarding the hypotheses, a few words are dedicated to discussing the findings regarding the control variables. In most of the logit models, the polity variable is, together with the squared term, jointly significant (90-95%). However, the direction of the effect is not the anticipated as a higher polity score is associated
with an increased risk of ethnic conflict being initiated. In addition, the variables are not jointly significant in the Cox models.

The effect of GDP/capita is consistent and robust across model specifications; the higher the GDP/capita, the more it dampens the risk of conflict onset. The logit models estimate a decreasing effect of about 40% in the predicted probability of ethnic conflict, going from the lowest to the highest GDP/capita observed in the data. The effect of economic wealth, hence, corroborates the conclusions of most studies of the onset of ethnic conflict and civil war.

The variable for the natural log of the population size of the country at risk demonstrates a positive and significant effect in all models using the first subset. However, when decreasing the sample to only including the neighbors in direct proximity to each conflict area, the significance of the effect expires, regardless of model specification and estimation technique.

Most likely the most noteworthy result concerning the control variables involves the power parity variable. The indicator of power parity among the ethnic groups in the state at risk is highly significant. The Cox estimates report hazard rates that approximately double the risk of ethnic conflict when the state at risk is characterized by parity, compared to when it is not. Recalculating the coefficients from the logit models confirm a similar pattern: power parity increases the odds of ethnic conflict with approximately 160%.

Then, what are the implications of the tested models for the theory? One conclusion is clearly that kinship is more salient than similarities in structural conditions that groups are facing. Hence, the structural similarities explanation does not appear to be a trigger of contagious behavior. However, the way structural similarities were evaluated may not capture the contagion aspect of conflict behavior. As mentioned previously, Buhaug & Gleditsch (2005) pose the question whether dependence among observations of intrastate war is an artifact of the clustering of what predicts war, such as poverty and poor governance, which would indicate that the observed neighborhood effect has little to do with contagion. Although preliminary and only evaluated for two potential causes of conflict, this study indicates that clustering of causes may have a smaller impact than one may imagine.

A second interesting finding concerns the patterns of the two subsets. The results yielded from the statistical evaluation are very similar for the two subsets. One could interpret this as support for the notion that contagion does not appear to be limited to neighbors close to the conflict zone. This may indicate that contagion is not limited to being a consequence of the direct spill-over of e.g. weapons, mercenaries, and refugee warriors, but may also be the outcome of processes of inspiration, demonstration effects, and learning. The fact that the presence of ethnic kin was such a robust predictor of conflict onset may support this. Groups do not necessarily
need to reside in direct proximity to a territory where its kin is involved in fighting to be affected. To use a hypothetical example, even if Tuaregs were fighting in a part of Mali not actually bordering Niger, the decision calculus of Tuaregs in Niger is likely to be affected and increase the perception of uncertainty.

Thirdly, the impact of the power parity indicator is intriguing. In all models examined, a state characterized by power parity in terms of the composition of the ethnic groups was associated with a higher risk of experiencing ethnic conflict. Examining the ethnic composition of the state, i.e. the number and relative sizes of the ethnic groups present in the state, has become increasingly common when studying the onset of domestic conflict. Different measures of ethnic polarization, as well as measures of fractionalization and dominance, have been evaluated extensively as a determinant of the onset of domestic conflict and civil war. Whereas some researchers claim evidence that ethnically fractionalized or dominant societies are associated with an increased probability of conflict, the proponents of polarization put forward the non-monotonic relationship between the size and number of ethnic groups and the likelihood of conflict. Although the form, direction, and strength of the variable is yet to be specified, it has become common procedure to include the variable in some form as a standard control for the onset of domestic conflict. The result from this study, hence, contributes to the debate and is worth further examination.

The bargaining perspective adhered to in this paper assumes power parity to be associated with more uncertainty, hence an increased likelihood of violent conflict (Reed 2003). The idea of power parity is, however, grounded in the research on interstate war and thus refers to military capabilities, see for instance Lemke & Werner (1996) and Reed (2003). Translating power to an intrastate context, where not all groups possess military capabilities, is therefore not straightforward and there is much left to be done here. In the literature on the causes of ethnic conflict, the relative proportions of the groups and the number of groups are occasionally discussed in terms of capabilities and its relationship with the likelihood of conflict. Hence, in this paper I controlled for situations where a society is characterized by evenly matched ethnic groups in terms of the size of the constituency. The variable was included only as one of the controls for local determinants of ethnic conflict, but it is possible that there is a link to contagion. For instance, kinship across states may be especially salient as a trigger of conflict if the groups with kin also are in positions of parity, thus higher uncertainty.

Conclusions
The aim of this paper was to examine conditions which make states more susceptible to contagion of ethnic conflict. It was suggested that since ethnic conflicts are likely to have conse-
quences that go beyond the borders of the state in which it is fought, and since ethnic groups typically are not delimited to residing in only one state, the strategic setting of the involved actors should be widened. Hence, the states that are neighbors to a state with ongoing ethnic conflict are faced with an uncertain situation and considered at risk of contagion. Within the strategic environment there are factors that may explain variations in outcome among neighboring states. Three hypotheses were formulated for empirical evaluation. First, it is more likely that a neighboring states which share one or more ethnic groups with the conflict state experience ethnic conflict, compared to a state lacking such kin groups. Secondly, neighbor states that are very similar in terms of (a) economic wealth and (b) democracy level are more likely to adopt contagious behavior than are states lacking such similarities.

The hypotheses were evaluated on a global set of dyads since 1989, consisting of conflict states and their neighbors, defined in two slightly different manners. By using primarily Cox regression, the hypothesis regarding ethnic kin was supported while structural similarities had no significant bearing on explaining conflict contagion.

The results from this study indicates several paths for future research, both in terms of new theoretical approaches and testing “old” hypotheses using new measures. In particular, the robust effect of the power parity indicators stimulates further research. In this paper, I controlled for situations where a society is characterized by evenly matched ethnic groups in terms of the relative size of their constituencies. The results indicated that states that are being subjected to a risk of contagion of ethnic conflict are especially prone to end up in conflict when the ethnic composition of the state is characterized by evenly matched groups and the absence of a predominant group. It would be interesting to evaluate the role it may have on contagion of ethnic conflict. Hence, a future development of this project may be to generate new measures of power parity across a strategic setting.
## Appendix: Tables and Figures

### Table 2: Cox hazard rates: all neighbor states

<table>
<thead>
<tr>
<th></th>
<th>(1) Ethnic kin</th>
<th>(2) Shared economic wealth</th>
<th>(3) Shared polity level</th>
<th>(4) Full model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic kin</td>
<td>1.510***</td>
<td>-</td>
<td>-</td>
<td>1.511***</td>
</tr>
<tr>
<td></td>
<td>(.236)</td>
<td>(.163)</td>
<td>(.212)</td>
<td>(.172)</td>
</tr>
<tr>
<td>Shared economic wealth</td>
<td>-</td>
<td>1.018</td>
<td>-</td>
<td>1.043</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.163)</td>
<td>(.212)</td>
<td>(.172)</td>
</tr>
<tr>
<td>Shared polity level</td>
<td>-</td>
<td>-</td>
<td>1.186</td>
<td>1.170</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(.212)</td>
<td>(.229)</td>
</tr>
<tr>
<td>Polity</td>
<td>1.026</td>
<td>1.026</td>
<td>1.024</td>
<td>1.024</td>
</tr>
<tr>
<td></td>
<td>(.016)</td>
<td>(.016)</td>
<td>(.018)</td>
<td>(.016)</td>
</tr>
<tr>
<td>Polity squared</td>
<td>.996</td>
<td>.996</td>
<td>.997</td>
<td>.996</td>
</tr>
<tr>
<td></td>
<td>(.005)</td>
<td>(.005)</td>
<td>(.005)</td>
<td>(.004)</td>
</tr>
<tr>
<td>Ln GDP/capita</td>
<td>.460***</td>
<td>.446***</td>
<td>.457***</td>
<td>.465***</td>
</tr>
<tr>
<td></td>
<td>(.060)</td>
<td>(.060)</td>
<td>(.061)</td>
<td>(.071)</td>
</tr>
<tr>
<td>Ln population</td>
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<td>1.156**</td>
<td>1.164***</td>
<td>1.150**</td>
</tr>
<tr>
<td></td>
<td>(.034)</td>
<td>(.066)</td>
<td>(.065)</td>
<td>(.068)</td>
</tr>
<tr>
<td>Parity</td>
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<td>1.787***</td>
<td>1.831***</td>
<td>1.932***</td>
</tr>
<tr>
<td></td>
<td>(.360)</td>
<td>(.349)</td>
<td>(.359)</td>
<td>(.369)</td>
</tr>
</tbody>
</table>

|                | -541.896       | -544.461                   | -544.020               | -541.476       |
| N              | 2255           | 2255                       | 2255                   | 2255           |

Cox regression stratified for multiple failures, Efron method for ties. Standard errors in parentheses (adjusted for clustering on the first state of dyad). * p < .1; ** p < .05; *** p < .01, two-tailed test.
<table>
<thead>
<tr>
<th></th>
<th>(1) Ethnic kin</th>
<th>(2) Shared economic wealth</th>
<th>(3) Shared polity level</th>
<th>(4) Full model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic kin</td>
<td>.606*** (.209)</td>
<td>-</td>
<td>-</td>
<td>.602*** (.212)</td>
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<tr>
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<td>-</td>
<td>-.043 (.252)</td>
<td>-</td>
<td>-.092 (.233)</td>
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<td>Shared polity level</td>
<td>-</td>
<td>-</td>
<td>.224 (.194)</td>
<td>.229 (.210)</td>
</tr>
<tr>
<td>Polity</td>
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<td>.034** (.016)</td>
<td>.031* (.017)</td>
<td>.032** (.015)</td>
</tr>
<tr>
<td>Polity squared</td>
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<td>.003 (.004)</td>
<td>.004 (.004)</td>
<td>.004 (.005)</td>
</tr>
<tr>
<td>Ln GDP/capita</td>
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<td>-1.030*** (.160)</td>
<td>-1.039*** (.157)</td>
<td>-1.097*** (.167)</td>
</tr>
<tr>
<td>Ln population</td>
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<td>.197** (.084)</td>
<td>.213*** (.080)</td>
<td>.187** (.085)</td>
</tr>
<tr>
<td>Parity</td>
<td>.937*** (.276)</td>
<td>.900*** (.287)</td>
<td>.953*** (.284)</td>
<td>.958*** (.279)</td>
</tr>
<tr>
<td>Constant</td>
<td>2.608** (1.100)</td>
<td>2.582** (1.036)</td>
<td>2.236** (1.105)</td>
<td>2.097* (1.231)</td>
</tr>
<tr>
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<td>N</td>
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<td>2255</td>
<td>2255</td>
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</table>

Standard errors in parentheses (adjusted for clustering on the first state of dyad). * p < .1; ** p < .05; *** p < .01, two-tailed test.
<table>
<thead>
<tr>
<th></th>
<th>(1) Ethnic kin</th>
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<th>(3) Shared polity level</th>
<th>(4) Full model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic kin</td>
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<td>-</td>
<td>-</td>
<td>1.532** (.271)</td>
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<td>-</td>
<td>-</td>
<td>1.239 (.342)</td>
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<td>Polity</td>
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<td>1.023 (.019)</td>
<td>1.022 (.020)</td>
<td>1.021 (.019)</td>
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<td>1.003 (.005)</td>
<td>1.002 (.005)</td>
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<td>Ln GDP/capita</td>
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<td>.386*** (.062)</td>
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<td>Ln population</td>
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<td>1.908*** (.404)</td>
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<tr>
<td>N</td>
<td>1546</td>
<td>1546</td>
<td>1546</td>
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* p < .1; ** p < .05; *** p < .01, two-tailed test.
Table 5: Logit estimates: neighbors to conflict zones

<table>
<thead>
<tr>
<th></th>
<th>(1) Ethnic kin</th>
<th>(2) Shared economic wealth</th>
<th>(3) Shared polity level</th>
<th>(4) Full model</th>
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<td>Ethnic kin</td>
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<td>.593** (.248)</td>
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<td>Shared economic wealth</td>
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<td>-</td>
<td>.152 (.232)</td>
<td>.177 (.257)</td>
</tr>
<tr>
<td>Polity</td>
<td>.033* (.017)</td>
<td>.033* (.017)</td>
<td>.032* (.019)</td>
<td>.033* (.017)</td>
</tr>
<tr>
<td>Polity squared</td>
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<td>.009** (.004)</td>
<td>.009** (.004)</td>
<td>.008* (.005)</td>
</tr>
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<td>Ln GDP/capita</td>
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<td>-1.183*** (.198)</td>
<td>-1.179*** (.061)</td>
<td>-1.151*** (.216)</td>
</tr>
<tr>
<td>Ln population</td>
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<td>.110 (.117)</td>
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<td>Parity</td>
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<td>.952*** (.326)</td>
<td>.978*** (.320)</td>
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<td>3.830** (1.494)</td>
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</tr>
<tr>
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<td>1546</td>
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</table>

Standard errors in parentheses (adjusted for clustering on the first state of dyad). * p < .1; ** p < .05; *** p < .01, two-tailed test.
Figure 1: Predicted probabilities of ethnic conflict, by ethnic kin and log of GDP/capita
References


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