Conflict Diffusion:
Ethnic Kin as a Transmitter of Internal Conflict*

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ABSTRACT

Is intrastate ethnic conflict contagious; that is, can ethnic conflict in one country increase the likelihood of the onset of ethnic conflict in a nearby country? This diffusion aspect of ethnic conflict has not been examined systematically in previous studies. The paper considers the role of ethnic kinship as a conflict transmitter. Using a strategic interaction perspective, it is argued that ethnic conflict in one state, in combination with ethnic kin between states, may generate uncertainty in one or more neighboring states. Under certain conditions this uncertainty and fear about the future may compel actors in one or more neighboring countries to use violence. For instance, a conflict involving an ethnic group in one state may inspire kin groups in neighboring countries to reevaluate the stability of their own arrangements and challenge the existing power balance. Thus, it is hypothesized that ethnic conflict in one state, in interaction with the existence of shared ethnic kin between two states, increases the likelihood of ethnic conflict erupting in the second state. This hypothesis is assessed using a new global dataset of directed dyads of all neighboring countries in the time-span 1989-2002. The data is analyzed using logistic regression and the findings lend preliminary support for the hypothesis.

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Introduction

It is well known that internal armed conflicts come in clusters; the risk of conflict in any given country appears to a certain extent depend on in what region the country is located (Gleditsch 2003; Gleditsch and Walter 2003; Gleditsch 2002a; Sambanis 2001; 2002). However, the main reason behind this clustering of conflict, and of peace, is yet to be determined. One reason might be that factors that cause the conflicts, such as poverty or regime types, are also clustered geographically. It could also be due to diffusion effects, i.e. a process whereby an event, in this case internal conflict, is conditioned by similar events elsewhere at prior points in time. It is this latter scenario which is the focus of this project. Using a strategic interaction approach, this paper explores how and why ethnic kin has the potential to work as a conflict transmitter and then makes a preliminary empirical evaluation of that argument. It is proposed that the interplay of conflict in one state and ethnic kin between two states can capture the conflict diffusion aspect of ethnic kin.

One can easily imagine that an intrastate armed conflict in general, and ethnic conflict in particular, may have transnational dimensions and transcend international borders. States are not hermetically sealed entities; rather, in many regions states share porous borders. Examples include the crossing of borders by arms, armed groups, and refugees that potentially could be mobilized and used for political purposes. Findings also suggest that states proximate to a country at war are affected economically in a negative way (Murdoch and Sandler 2002; 2004). Thus, if a state is ravaged by violent ethnic conflict, it is likely to affect its neighboring states in some way or another. As mentioned previously, the focus here is whether the existence of ethnic kin can work as a condition of conflict diffusion. There is indeed such an assumption found in previous studies. For instance, to quote Michael Brown: “internal conflicts are most likely to spark con-

1 The diffusion of intrastate armed conflict may obviously come in different forms and may not necessarily have ethnic dimensions. However, since the main argument of this paper relates to ethnic kin, the study is limited to ethnic conflict.
flicts in neighboring states when ethnic groups straddle formal international frontiers: divided ethnic groups are particularly effective conflict transmitters” (Brown 1996:595). However, although ethnic kin has been emphasized as an effective conflict transmitter, this has not been properly examined empirically.

When thinking about empirical examples of ethnic kin as a transmitter of conflict, some cases rapidly come to mind, such as the links between the conflicts in Kosovo and Macedonia involving Albanians, or the interlinked ethnic relations between Rwanda’s and Burundi’s Hutus and Tutsis. However, there are also several much less well-known, and less researched, cases of conflicts clearly being linked by ethnic kinship. For instance, Chad and Niger share ethnic kin since both countries harbor significant Toubou minorities. Following a coup d’etat in Chad in the early 1990s, many Chadian Toubous fled to Niger. This led to tensions rising in Niger, between members from the ethnic groups Toubou and Fulani. The tensions eventually led to the emergence of a Toubou-mobilized rebel group in Eastern Niger, Front démocratique du renouveau (FDR), which ended up in armed conflict with the Nigerien government after having demanded first federalism and then autonomy for the Toubous residing in Eastern Niger (UCDP).

By focusing on ethnic kin as a potential mechanism of conflict diffusion, the aim is to contribute to previous studies in two ways. Firstly, the salience of ethnic kin as a transmitter of internal conflict has not been evaluated empirically using quantitative methods. To my knowledge, there are no studies with a diffusion approach which examines the salience of ethnic kinship with regard to intrastate ethnic conflict. The studies that have evaluated transnational dimensions of ethnic kin and conflict either focus on international crises/war or study countries as the unit of analysis. With the latter approach, one cannot evaluate separate diffusion effects, as the variable examined for each country is a combination of factors present in all proximate states. In this study, potential diffusion effects are intended to be captured by a directed dyad approach of all

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2 For example, for each country one then has a variable indicating whether or not there is e.g. armed conflict in any neighboring state.
pairs of states that are neighbors (sharing land borders). No previous study of the transnational dimensions of ethnic conflict has employed such a data structure. Secondly, both dependence and diffusion of internal conflict are research areas given little attention in previous studies, and to my knowledge, a diffusion approach has not been systematically applied to internal conflict. Direct spill-over of armed conflict through a region may be rather uncommon; however, previous studies do corroborate that the onset of armed conflict in one state to a certain extent is dependent on armed conflict in other states. Hence, it would be worth examining how much of this dependence is due to diffusion effects in general and the existence of transnational ethnic kinship in particular.

The outline of this paper is as follows. Firstly, after a brief review of the previous research on ethnicity and diffusion effects, a strategic hypothesis related to an ethnic kin argument of conflict diffusion is outlined. This is followed by a discussion of some of the issues related to the research design. I then carry out and present some preliminary empirical (statistical) applications and discuss how they relate to the theoretical framework. By way of conclusion, some implications for future research are drawn.

Theoretical Framework

Previous Research: Ethnicity and Diffusion Effects

In several different research areas, probing somewhat different research questions, the salience of transnational ethnic groups has been emphasized. Ethnic kin between two states is proposed to under certain conditions both affect the domestic power relations of those states and in some cases affect the international relations between the states.³

³ Another related topic is the diffusion of ethnic riots, see e.g. Horowitz, Donald L. 2001. Location, Diffusion, and Recurrence. In The Deadly Ethnic Riot, edited by D. L. Horowitz. Los Angeles: University of California Press. However, since the focus of the study is to examine the conditions under which ethnic riots spreads, rather than examin-
The majority of the studies focus on ethnic kin as an important predictor of international conflict. 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 Davies et al (Davis, Jaggers, and Moore 1997; Davis and Moore 1997; Moore and Davis 1998) and Trumbore (2003). Transnational ethnic kin has 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. Trumbore finds support for the hypothesis that governments with ongoing ethnic insurgencies are more likely to be aggressors in international disputes (2003). It remains to be evaluated if kin also has an effect on the spread of internal armed conflict.

When it comes to ethnic kin and the diffusion effect of closest relevance to this project, i.e. internal armed conflict, there are few studies conducted thus far. 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, but not
revolutionary wars, 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.

The approach of Gledistch’s and Sambanis’ studies is, however, different from the one applied in this paper. The focus in their studies is each country (or country-year) and its dependence upon international factors in explaining onset of civil war. This differs slightly from the emphasis on diffusion taken in this paper. As mentioned previously, conflict diffusion is defined here as a situation whereby one intrastate armed conflict affects (i.e. increases) the likelihood of the onset of intrastate armed conflict in a neighboring state. Thus, an event occurring in place A at time t increases the likelihood of an event of the same type to happen in place B at time t+1. However, such a process is occasionally referred to as armed conflicts being dependent of each other. I would like to stress, however, that the approach of dependence studies is different from that of diffusion studies. When studying dependence, one typically takes each state as the point of departure and includes events in neighboring states as one independent variable. If one finds support for a neighborhood effect with such an approach, (a) one cannot know which conflict or country-specific variable affected which (since events or conditions in all neighbors are grouped together into one variable), and (b) one cannot evaluate whether the dependence between conflicts are due to diffusion effects or if the causes of conflict are clustered, making conflicts appear to correlate. Diffusion studies differ from such an approach by taking a different point of departure, namely the state which has an armed conflict. In other words, each conflict has the potential of diffusing to several other countries, and each country can be exposed to several sources of diffusion. To evaluate this empirically, one has to find a research design that can take this complexity

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4 The definition parallels the definition used in the traditional literature of conflict diffusion which focused on international diffusion. See, for example, Most, Benjamin A., and Harvey Starr. 1980. Diffusion, Reinforcement, Geopolitics, and the Spread of War. *American Political Science Review* 74 (4):932-946.

5 Adding to the conceptual confusion, other concepts such as conflict spread, contagion, dependence, and expansion are sometimes used to describe different phenomena and at other instances used interchangeably.

into account. As a final clarification, a note on what actually diffuses is warranted. The focus is only on the behavior (i.e. armed conflict behavior) and not necessarily the same issues, actors, etc.

**Ethnic Kin and Strategic Interaction: A Preliminary Hypothesis**

The theoretical approach of this project is strategic interaction; i.e., it is argued that the presence of ethnic kin between two states can trigger strategic dilemmas which in turn account for conflict diffusion from one state to another. The core of the argument is that ethnic kin is salient only if it is perceived to alter the power relations in another state; I argue that in combination with a conflict in one state involving a kin group, such a situation may arise.⁷

The ethnic kin explanation of conflict diffusion, as outlined here, does not necessarily assume that the ethnic group (or ethnically based government) being triggered to initiate conflict in state B is from the *same* group as any of the groups in conflict in state A. Rather, I would argue that other groups may be affected as well. For instance, the dyad Afghanistan and Pakistan is coded as having ethnic kin since both countries have a Pashtun minority. Given a situation in which an opposition group based on the Pashtun minority (i.e. the Taliban movement) is involved in conflict in Afghanistan, other groups in Pakistan may potentially be affected since they may fear that Pashtuns in Pakistan in the future could challenge the power balance by being inspired by events involving its kin in Afghanistan. Although hypothetical, the example intends to substantiate why I should not at this stage exclude certain situations.⁸

I propose a correlation between the interaction of kin and conflict in state A and the onset of ethnic conflict in state B. However, I have an open approach as to what the underlying mechanism of diffusion accounting for this correlation is. Thus, in the following I outline a few differ-

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⁷ Throughout the paper the terminology used (lacking better names, suggestions are welcome!) refers to state A as the conflict with ongoing ethnic conflict and state B as the state being exposed to diffusion of conflict from state A.

⁸ In addition, given that this is a research topic with very little previous research done, we simply do not know much about what could potentially drive diffusion. Hence, at this early stage I focus on examining the overall correlation which is proposed to see whether there are any general patterns. Specifying the mechanisms and the specific conditions under which they could work will come at a later stage of this research project.
ent scenarios of how ethnic kin may work as a catalyst of conflict diffusion. Although I consider
several different mechanisms, they do have the focus on strategic dilemmas in common. They are
either based on (or inspired by) the logic of the commitment problem or the reputation argu-
ment. The dependent variable – the onset of armed ethnic conflict – indicates a dyadic approach;
it takes two warring parties to conduct a war (in this case a government and an ethnically-based
opposition group). However, the explanations are divided into situations where, given an ethnic
conflict in state A, the government in state B initiates conflict, or the initiating party is an opposi-
tion group in state B.

The situation of a government initiating conflict can be explained by the reputation argument.
The argument, developed by Walter (2003), has recently been applied to a context of transna-
tional dimensions of intrastate conflict (Gleditsch and Walter 2003). The core of the reputation
argument is that governments care about their reputation and may initiate armed conflict as a
long-term strategy to deter future challenges. Taking into account not only current challenges, but
also future potential disputants, is rather uncommon in most theories. However, a few different
studies point to a dynamic process where the decision by a government to use force is assessed in
line with an ongoing bargaining process over time, see e.g. Filson & Werner (2002). In an applica-
tion to a transnational context, Walter argues that governments should care about challengers
both from inside the state as well as from the outside. Thus, concerns about reputation can create
linkages between several different conflicts (Gleditsch and Walter 2003). In line with this argu-
ment, one could argue that if there is conflict in state A (involving an ethnic group), and given
that the ethnic group has kin in state B, the government in state B can start a conflict preemp-
tively to deter future challenges from that group (e.g. if the group grows stronger over time). Al-
ternatively, the government of state B may be faced with some kind of demand or challenge from
an ethnic group, and at the same time observes a conflict in state A having, or potentially having,
transnational dimensions by involving the same ethnic group. The government of state B can in
such a situation respond by fighting the group to invest in a reputation of toughness directed
towards the group both in state A and state B.

One could also explain how an ethnically based opposition group initiates armed conflict,
using the logic of the commitment problem as proposed by e.g. Fearon (1995a; 1995b; 1998),
Lake & Rothchild (1998), and Weingast (1998). Conflict involving a group in one state may con-
tribute to kin groups in neighboring countries reevaluating their own arrangements and end up
challenging the existing power balance by increasing its demands instead of upholding existing
agreements; thus, the presence of a commitment problem. My interpretation of the commitment
problem in this context is that the ethnic kin groups mainly can be affected in two different man-
ners. Firstly, given an armed conflict in state A involving an ethnic group, kin in another state
may get inspired to increase their own demands, which enhances the risk of armed strife (Lake and
Rothchild 1998). In these situations, the group hence takes on an offensive position. The second
alternative of this argument is that, in a situation of ethnic conflict in one state, a kin group in
another state is forced to reevaluate its own security arrangements out of defensive motives. In this
case the outcome may also be an increased likelihood to use force. For instance, if one group
believes that the other group will be affected by the armed conflict in the other state and chal-
lenge 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). Hence, armed conflict in one state may affect the incentives and opportunities of one
or more kin groups in other countries and may inspire or, alternatively, force such a group to take
up arms and challenge the government authority, either by not committing to the existing power
contract or out of fear that the government will renege on its commitment in the future.

To sum up, strategic arguments can help explain how an interaction effect of conflict in one
state in combination of ethnic kinship works to produce diffusion effects. Several different
mechanisms were outlined and divided into situations where the violence is initiated by the gov-
ernment (based on a reputation logic) and situations were the initiating party is an ethnic group
(building on the problem of credible commitment). However, regardless of who is initiating the conflict, the theoretical implication of what correlation is expected to be found empirically is the same. Thus, the following hypothesis is formulated:

\[ H1: \text{If there is an ethnic conflict in state } A, \text{ and state } A \text{ and state } B \text{ share ethnic kin, the probability of ethnic conflict in state } B \text{ is increased.} \]

**Research Design**

**Capturing Diffusion**

How can diffusion effects related to ethnic kin be captured? I argue that ethnic kin in some cases is a condition that increases the risk of diffusion of ethnic conflict. In and by itself, however, the presence of ethnic kin between two states is usually a rather stable phenomenon which varies little over time. Thus, it probably cannot in itself cause conflict to erupt. Instead I suggest an interaction effect of conflict and ethnic kinship. In other words, when state A has an ongoing armed ethnic conflict, and shares ethnic kin with state B, the probability of the onset of conflict involving a kin group in state B is increased (compared to proximate states without such kin groups, all else being equal). Consequently, if I find an effect of the interaction variable, which is separate from the effects of kin and conflict in A respectively, it should be a diffusion process at place.

**Matching Unit and Level of Analysis**

Since the theoretical argument is found on two levels of analysis – between states and between actors within states – it becomes challenging to find a research design that aptly captures the theoretical arguments. On the one hand, the argument relates to the relationship between states –
a situation or event (i.e. ethnic armed conflict) in one state is argued to affect a situation (the likelihood of the onset of armed ethnic conflict) in a state in its proximity. On the other hand, the argument also proposes that the likelihood of armed conflict in state B is affected because factors within that state work to produce one or more strategic dilemmas. Thus, is the unit of analysis dyads of states, states, dyads within states, or monads of groups within states? And does the theory mainly say something about the behavior of ethnic groups or how the relationship between such groups has transnational dimensions?

In this study, I decided to evaluate the hypothesis with a dataset composed of dyads of states. Capturing a particular event and delimiting the relevant population can be reflected not only in the selection of the unit of analysis. One can also address some of these issues by the way selection criteria are employed, or capture it by independent variables. Thus, I chose countries (and how countries affect each other) as the unit of analysis and the behavior and characteristics of the ethnic groups are intended to be evaluated by the variables. In previous research, interstate crisis and armed conflict have usually been tested using dyadic data, whereas the causes of intrastate conflict behavior have been probed using monadic data, such as aggregate characteristics of nation states. A common example is the country-year data structure. However, as proposed previously, with such a dataset the diffusion approach is not built into the structure but rather captures the spatial clustering of conflicts. Dyadic approaches are better equipped for diffusion studies, I would argue. One thing to consider in this regard is whether to limit the study to what can be referred to as relevant dyads (Bennett and Stam 2000). Distance between pairs of states inhibits interaction between those states. One of the main findings from the classical literature on the diffusion of international conflict established that sharing a border provided the opportunity for interaction (Siverson and Starr 1990; 1991). Countries that are proximate are thus more relevant to study from a diffusion context. In addition, some argue that ethnic conflict should be self-

limiting as opposed to ideological conflicts since ethnic conflicts should not extend beyond the brethren of the groups involved (Fearon 1995a). Since many neighboring states share kin groups, examining only such dyads could be a way of identifying a relevant setting which nevertheless has variation in the phenomenon being investigated. Lastly, to include all possible dyads in the world would also not be very efficient. For instance, it is not very likely that an armed conflict in Papua New Guinea could affect the likelihood of armed conflict in Finland. Apart from being extremely time consuming when it comes to data collection, including all possible dyads also creates methodological problems (King and Zeng 2001). Hence, dyads more relevant to study should be identified. One alternative is to include all dyads identified by the Minimum Distance Dataset (Gleditsch and Ward 2001). However, any cut-off point used to determine whether a dyad of states is proximate is arbitrary. Including only dyads of direct neighbors appears more straightforward and easier to motivate theoretically. Thus, all Minimum Distance dyads with a value of “0” on distance were selected as a starting point.

The final step is to decide whether to include non-directed dyad-years (one observation per dyad per year in the time-series) or directed dyad-years (two observations per dyad per year in the time-series) (Bennett and Stam 2000). In other words, should the pair of e.g. the neighboring states Norway and Sweden have one cross-section or one for each direction of the dyad? With the diffusion approach of this project, to be able to include both state A’s effect on B and vice versa, the dataset clearly has to consist of directed dyads.

To summarize, the spatial domain of the dataset used in this project currently includes a global collection of directed dyads of all neighboring states. The temporal domain is 1989-2002\textsuperscript{10}, which was guided mainly on the basis of data availability. This gives a total of 8064 observations.

\textsuperscript{10} In some cases, the time-series is shorter. This is so because to be included as the first or the second state composing a dyad, the state has to be independent. Hence, for instance Eritrea is included from 1993. Also, the number of neighbors in some cases varies over time, due to countries gaining independence or changing its territory. For instance, in 1989 Namibia was still part of South Africa; thus, Angola and Zambia were coded as neighbors to South Africa for that year.
Operationalizing Central Concepts

The dependent variable is the onset of intrastate ethnic armed conflict in state B of the dyad. Following the Uppsala Conflict Data Program (UCDP), an intrastate armed conflict is defined as a contested incompatibility which concerns government and/or territory where the use of armed force between two parties – a government of a state and an opposition group – results in at least 25 battle-related deaths in one year.\textsuperscript{11} 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 years of inactivity. Since the actors involved in conflict and in focus here are ethnically mobilized groups, I will separate the conflicts with an ethnic dimension 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 with the conflict data provided by the UCDP I attempt to corroborate the existing data sources to maximize validity. The UCDP also 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 ethnic violence in each armed conflict (and, of course, several ethnic conflicts in one country a given year). Hence, each country-year with at least one onset of armed ethnic conflict as defined above is coded (1) whereas all other observations (country-years of non-ethnic conflicts as well as years of no armed conflict) are coded (0).\textsuperscript{12}

The main independent variable is the interaction of (a) ethnic conflict in state A and (b) shared ethnic kin between states A and B. Thus, the first step is to code these two variables. I first coded

\textsuperscript{11} For further information about the project and the separate elements making up the definition, see www.ucdp.uu.se.
\textsuperscript{12} For consistency, I follow the coding rules of the UCDP to determine the years of conflict onset, whereas the other sources are used to identify what 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) (Fearon, James D., and David D. Laitin. 2003. Ethnicity, Insurgency, and Civil War. \textit{American Political Science Review} 97 (1):75-90.)
ethnic kinship between each pair of states included in the dyad. However, to determine if two states share the same ethnic kin, it does not suffice to code whether they share the same ethnic minority according to e.g. the World Directory of Minorities. In fact, such a coding would end up with practically all dyads of the world sharing ethnic kin and would not capture the type of ethnic kinship relevant to the argument. Then, what kind of ethnic kinship is salient? Following the theoretical argument, there has to be some kind of political relevance, and potential transborder links between the groups. Thus, I chose to include only those ethnic minorities listed by the Minorities at Risk project, since the inclusion criteria to be part of that dataset imply some sort of political relevance of the group.\textsuperscript{13} The second part of the interaction effect is ethnic conflict in state A. One question in this regard is whether it is the onset or incidence of ethnic conflict in A that is predicted to affect the likelihood of ethnic conflict onset in state B. Theoretically, it seems more logical that the incidence of conflict is most relevant; there are no specific reason why it is only onset and the early phases of conflict that have the potential to diffuse. However, in the results section, the results of both alternatives are reported.

To recap, to capture the diffusion effect, an interaction variable of shared ethnic kin between states A and B and the existence of ethnic armed conflict in state A is tested as a determinant of onset of ethnic conflict in state B. By including in the same model the ethnic kin and the conflict in A variables, one can evaluate whether the interaction variable has an effect on its own, which would lend some support to the diffusion argument. To secure temporal order, the variable is lagged one year.

Another issue to discuss is how to choose control variables. Choosing control variables should be guided by whether or not a given factor could be argued to potentially affect both the independent and dependent variables: if a variable could only affect either an independent or the dependent variable then it could not affect the original finding with regard to the hypothesis.

\textsuperscript{13} To be included in the Minorities at Risk project’s list (apart from a minimum size criteria) the group either “collectively suffers from, or benefits from, systematic discriminatory treatment vis-à-vis other groups in a society; and/or collectively mobilizes in defense or promotion of its self-defined interests” (MAR codebook, for more information consult the project website at http://www.cidem.umd.edu/inscr/mar/).
With the design of this study, the selection of control variables becomes a bit tricky. The dependent variable is observed in the second state making up the dyad; i.e. whether or not there was an outbreak of intrastate armed ethnic conflict in that state the coded year. The main independent variable on the other hand, the interaction effect of kin and conflict, includes factors relating to both states. Most of the control variables finally selected for the analysis refer to conditions in the second state, i.e. where the dependent variable is observed. These are also standard controls when examining the causes of intrastate armed conflict: democracy score, population size, and GDP per capita.

In previous studies, GDP/capita has been found to be negatively related 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 (2002b). The data covers the years up to 2000; hence, data for the remaining two 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.

A third control variable is the democracy score of state B. The findings 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, a squared version of the polity2 score provided by the Polity IV dataset is included in the model. Population size, GDP/capita, and democracy score are also lagged one year to secure temporal order. Since the data has a time-

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14 However, I am still not sure how to think in terms of control variables with a design such as this one; thus, any suggestions are greatly appreciated. Another question is whether a control for the number of neighbors each state B has: do I need to control for this with a variable or is it controlled for by having the design that I have?
series structure one can both follow events over time and ensure the correct temporal order. In essence, this is done by lagging the independent variables so that they are measured at a time prior to the dependent variable. However, there is no theoretical basis for how long the time lag is; it is difficult to discern how long it would take, given the start of conflict in state A, for the groups in state B being triggered to initiate a new conflict. The temporal unit of the dataset is the year; thus, the independent variables are lagged one year.\textsuperscript{15} Even though it is uncertain to what extent this is the correct time lag, it is at least possible to say that the temporal order was not reversed.\textsuperscript{16}

Finally, a variable measuring the length (in kilometers) of the shared border of the dyad is included. One could expect that sharing a very long border makes for a rather different situation than sharing a tiny stretch of territory. The source for this variable is the boundary dataset created by Furlong & Gleditsch (2003).

## Results

The dependent variable of the study is whether or not, for any given year, an ethnic armed conflict is initiated in state B. Thus, the variable is dichotomous, which implicates that the usual assumptions of ordinary least squares regression are not met. Thus, the statistical analysis is carried

\textsuperscript{15} I also test the models with the independent variables lagged two years.

\textsuperscript{16} Time is also of essence for another reason; the data may suffer from temporal autocorrelation. If this is not accounted for, I run the risk of accepting a false hypothesis by reporting too small standard errors (Beck, Nathaniel, Jonathan N. Katz, and Richard Tucker. 1998. Taking Time Seriously: Time-Series-Cross-Section Analysis with a Binary Dependent Variable. \textit{American Journal of Political Science} 42 (4):1260-1288. If the dependent variable is incidence of conflict, temporal autocorrelation is taken into account by including a lagged dependent variable as an independent variable in the statistical model. However, in this study the dependent variable is onset of armed conflict. Then one cannot lag the dependent variable since each onset of conflict is preceded by a year of peace. Thus, normally two other solutions are employed. Firstly, only the onsets of conflicts are observed and the years of ongoing conflicts are counted as non-conflict. However, there is also temporal dependence in the sense that peace begets peace, i.e. years of ongoing peace, and to deal with this problem, a set of cubic splines could be included in the analysis. However, in this study, all onsets of ethnic conflict are coded (1) whereas non-onsets are coded (0) rather than being censored (missing). By using splines, both ongoing years of peace and in some cases ongoing years of conflict would be taken as the first. Thus, I cannot use splines in this way. Any suggestions on how to deal with temporal autocorrelation with this design is hence greatly appreciated.

Taking the history into account should also be interesting for theoretical reasons, especially so if one adheres to the view that internal conflict may be seen as a long-term bargaining process.
out using logistic (logit) regression (Long 1997). The coefficients of logistic regression are not as straightforward to interpret as is ordinary least squared regression. However, at this stage I am more interested in whether or not there is a significant effect and in what direction the effect is, than the size of the effect. However, in the future, predicted probabilities of different combinations of variable values can be calculated. The remaining part of this section first presents some basic descriptive statistics to get a grasp of the characteristics of the observations being analyzed. Then follows the statistical evaluation of this paper’s hypothesis.

**Descriptive Statistics**

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<th>Variable</th>
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<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
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<tr>
<td>Onset of conflict in B (dep var)</td>
<td>8064</td>
<td>.055</td>
<td>.228</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Incidence of conflict A * kin</td>
<td>8064</td>
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<td>.215</td>
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<td>1</td>
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<td>.382</td>
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<td>.113</td>
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<td>1</td>
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<td>Kin A-B</td>
<td>8064</td>
<td>.248</td>
<td>.432</td>
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<tr>
<td>Population size B</td>
<td>8062</td>
<td>64841</td>
<td>204453</td>
<td>184</td>
<td>1276500</td>
</tr>
<tr>
<td>In population size B</td>
<td>7432</td>
<td>9.545</td>
<td>1.562</td>
<td>5.217</td>
<td>12.053</td>
</tr>
<tr>
<td>GDP/capita B</td>
<td>8062</td>
<td>6150.289</td>
<td>6776.25</td>
<td>208,999</td>
<td>49260.13</td>
</tr>
<tr>
<td>In GDP/capita B</td>
<td>7432</td>
<td>8.150</td>
<td>1.098</td>
<td>5.639</td>
<td>10.750</td>
</tr>
<tr>
<td>Polity B</td>
<td>7872</td>
<td>1.205</td>
<td>6.898</td>
<td>-10</td>
<td>10</td>
</tr>
<tr>
<td>Polity B, squared</td>
<td>7262</td>
<td>48.943</td>
<td>32.032</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Boundary length A-B</td>
<td>7980</td>
<td>728.086</td>
<td>810.674</td>
<td>0</td>
<td>7940</td>
</tr>
</tbody>
</table>

Regarding the three variables which were transformed for statistical analysis (population, GDP/capita, and polity scores), both the regular values and the transformed are included to get an idea also of the distribution of the real values. The variable population of state B is measured in thousands; the minimum value is Belize and the maximum China. The country with the lowest GDP/capita is Burundi (extrapolated for 2002) whereas Luxembourg has the highest. The mini-
mum boundary length of 0 km is the result of Saudi Arabia and Bahrain being coded as neighbors in the dataset used, while it is unclear whether they share an actual physical border.\textsuperscript{17} The longest border (7949 kilometers) is shared by Canada and the United States.

As can be seen from the standard deviations in Table 1, most of the variables have widely scattered distributions, not surprisingly since all states in the world are included in the dataset. One thing to keep in mind is that the values do not represent the actual mean characteristics of e.g. state B, but the average of the observations. Since each state is included in as many cross-sections as it has neighbors (times the number of years of the times-series), states with many neighboring countries are overrepresented.

Almost twenty-five per cent (or 1999) of the observations are coded as sharing ethnic kin. When it comes to the number of conflict onsets, 442 country-years are coded as having at least one onset of ethnic conflict in state B. However, these conflict onsets are found in only thirty-three different countries, indicating that many states have multiple onsets over the time-period examined. Since the dataset has directed dyads, the number of onsets in state A is the same. However, the number of country-years with incidence of ethnic conflict in state A is obviously higher, 1432, in forty-four different countries.

**Probing the Hypothesis**

Recall the hypothesis: If there is an ethnic conflict in state A, and state A and state B share ethnic kin, the probability of ethnic conflict in state B is increased. Thus, to capture this proposed correlation, the model includes three primary independent variables. The variable \textit{conflict}_A*kin combines Conflict\textsubscript{A} with Kin as the moderating variable. The implication of the suggested interaction effect is that the correlation between conflict in state A and conflict in state B varies dependent upon the moderating variable, that is whether or not there is ethnic kinship between states A and

\textsuperscript{17} Looking at maps, it appears they are connected by a bridge.
B. In Table 2 the results of the interaction effect, controlling for polity score, GDP/capita and population size of state B, as well as the length of the shared border of state A and B, are presented. Model 1 is the main model, in which it is proposed that it is the incidence of ethnic conflict in state A that produces diffusion effects (in combination with shared kin). However, the results when examining the effect of onset of ethnic conflict in state A are presented as well, in Model 2.

| Table 2: Logistic regression estimates of the onset of ethnic conflict in state B |
|-----------------|-----------------|
| Term             | Model 1         | Model 2         |
| Incidence of conflict A * kin | .603** (.263) | -               |
| Incidence of conflict A       | -.222 (.146)   | -               |
| Onset of conflict A * kin     | - (.383)       | 1.13*** (.238) |
| Onset of conflict A           | - (.129)       | -.349 (.238)   |
| Kin A-B                     | -.066 (.147)   | -.010 (.129)   |
| Polity B, squared            | -.009*** (.002) | -.009*** (.002) |
| ln GDP/capita B              | -.593*** (.065) | -.588*** (.064) |
| ln population size B         | .206*** (.035) | .208*** (.035) |
| Boundary length A-B          | (.000)* (.000) | .000* (.000)   |
| Constant                    | .131 (.540)    | .057 (.543)    |
| N                            | 7198            | 7198            |
| Pseudo R2                   | .0835           | .0844           |

The results of Model 1 indicate that the interaction effect is positive and significant and distinct from the two variables making up the variable. The effect of conflict in A, when kin is 0 (i.e. no
shared kin between states A and B), is non-significant and likewise the effect of kin, when conflict in A is 0 (i.e. no conflict), is non-significant. However, the interaction of the two variables is positive and significant. Hence, this should lend some preliminary support for the diffusion arguments, since it is only the combination of both ethnic kin and conflict in A that can predict conflict in B and it does not suffice with only kin or conflict.

Concerning the control variables, they all have significant effects on the likelihood of ethnic conflict in state B. The effects are in the direction predicted from previous studies. The effect of the democracy measure – i.e. the squared version of the polity score – indicates support for a curvilinear relationship between democracy and ethnic conflict onset. The variable measuring GDP per capita indicates that the higher its value, the lower is the probability of ethnic conflict in state B. In addition, the control for size of population has a positive and significant effect. Both concerning GDP/capita and population size, the results are consistent whether or not the absolute number or the natural logs are used. Lastly, the length of the shared boundary of state A and B has a positive effect on the likelihood of conflict in state B, although it is only significant at 90%. However, the nature of the proposed relationship between length of border and the probability of diffusion of ethnic conflict is uncertain. While it might be a difference between very short boundaries and very long ones, it is unclear whether the relationship is linear. It might be the case that differences do exist but without being captured as a linear relationship.

Another observation from Table 2 is that the results of Model 2 are very similar to those reported for Model 1. Conflict incidence and conflict onset in state A both have an effect (combined with shared kin) on the likelihood of ethnic conflict erupting in state B.

In addition, these two models where tested with several alternative specifications and the results were basically the same. The interaction effect had a positive and significant effect on the onset of ethnic conflict in state B in all specifications. Three of the control variables, GDP/capita, population size, and democracy score, were also significant throughout the specifications. The effect of the variable measuring the length of the border of each dyad was less ro-
bust and in some cases non-significant, and it never reached 95%. The different specifications evaluated included having the independent variables lagged at t-2 instead of t-1, two different measures of the GDP/capita variable, with and without transforming variables with their log, with and without robust standard errors, and with and without extrapolating data for missing values in the GDP/capita and population size variables.

Conclusions

What are the implications of the results concerning the theoretical framework of this paper? Although preliminary, the findings do lend support for the overall correlation proposed in this paper. However, it has not provided any more information about the underlying mechanisms. Having found preliminary evidence for the argument on the other hand opens up to the possibility that one or more of the proposed mechanisms may in fact be operating. Thus, the findings make it worthwhile to further explore the topic. In future studies, it is also crucial to investigate the robustness of the results. For instance, I need to find a way of conducting diagnostics for temporal dependence among the observations and take it into account when running regressions. In addition, several other variables should potentially be controlled for, such as location of conflict and multiple conflicts within the same country.

Another way forward is also to better specify the conditions under which ethnic kin is most salient as a conflict transmitter. The hypothesis assessed empirically in this paper is rather general and says little about which kind of ethnic relations are deemed most significant. For instance, certain conditions regarding the ethnic power balance of state B probably makes it more susceptible to conflict diffusion. In line with the strategic interaction perspective of this paper, it could be the case that if the ethnic relations in state B are regarded as a situation of power parity¹⁸, or

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approaching power parity, the state is more sensitive to being affected by events involving kin
groups in neighboring states. This is the case if a conflict in state A has the potential to result in a
shift of the real or perceived power balance between ethnic groups in state B. In contrary, in
cases where one group is very dominant and the other groups are very small, i.e. when there is
not power parity, it is unlikely that a power shift should take place or that an ethnic group would
be emboldened enough to challenge the existing power structure. Consequently, the interaction
effect of conflict and ethnic kin is more likely to generate conflict diffusion if the ethnic balance
of state B is closer to power parity.

Another type of situation highlighted in previous studies is that of double (or nested) minori-
ties. Double minorities exist when a group simultaneously is a minority in one context, and in
another context a majority. The classic example is the Tamils in Sri Lanka who is a minority on
the island, but a large majority relative to the Singhalese in Sri Lanka if one takes into account the
more than 60 million Tamils in the South Indian state of Tamil Nadu. Thus, a situation of double
minorities should be extra conflict prone, since all groups in such a region could feel insecure and
have incentives to preemptively start a conflict. For instance, Fearon (1995a) in fact emphasizes
situations of nested minorities as one of the most probable ways in which ethnic conflict could
spread. Consequently, it would be interesting to evaluate whether this assumption holds for an
empirical evaluation.

References


