

The curse of ethno-federalism? Ethnic group regions, subnational boundaries and secessionist conflict*

Christa Deiwiks
ETH Zurich

December 30, 2009

Abstract

In ethnically divided societies, devolving power to subnational units as done in ethnofederal systems is a common strategy for conflict prevention and resolution. At the same time, in ethnofederal states the risk for secession might be relatively higher since ethnic groups have their own latent state, which arguably gives them reason and opportunity to eventually fight for secession. Crucially, ethnofederal states differ in terms of how ethnic groups are distributed over subnational units: They may be spread over several subunits, share a subunit with others or exclusively inhabit a single unit. While a lot has been said on power devolution, there has been no systematic study yet on how this variation in the relation between group and administrative boundaries affect the risk of secessionist conflict. The paper addresses this gap in the literature. I argue that the better the match between group boundaries and subnational units, the higher the political salience of territory-based ethnicity since ethnic outbidding becomes more likely. This results in a higher mobilization of resources for nationalist purposes, and thus a higher likelihood of secessionist conflict. In order to test this argument, the paper presents a new geographical dataset on subnational boundaries from 1946 to 2009. Using Geographic Information Systems, data on group settlement is matched with the subnational units. Results indicate that the degree of correspondence between group location and subnational units is positively correlated with secessionist conflict.

*Paper presented for presentation at the Annual Meeting of the Swiss Political Science Association, Geneva, Jan 7-8, 2010. For helpful comments I would like to thank Prof. Lars-Erik Cederman, Prof. Simon Hug, Prof. Nicholas Sambanis, Nils B. Weidmann and the members of the ICR research group at ETH Zurich as well as participants of the *Science lunch* organized by poliNet at University of Zurich. Mistakes and omission remain my own responsibility. I gratefully acknowledge financial support by the European Science Foundation through a grant by the Swiss National Science Foundation (116795). For questions and comments I can be reached at deiwiks@icr.gess.ethz.ch.

1 Introduction

Ethnofederalism has a mixed track record with regard to conflict regulation in multi-ethnic societies. On the one hand, examples like Belgium or Canada show how the territorial devolution of power on the basis of ethnicity can provide interethnic peace; on the other hand, the former Soviet Union and the former Yugoslavia are two examples where the state's ethnofederal structure did not prove to be stable but possibly conflict-fueling and eventually leading to secession and complete state-breakup.

In ethnofederations, administrative boundaries often tend to coincide with ethnic group boundaries creating latent states for groups. This characteristic alone might leave ethnofederations particularly vulnerable to secessionist conflict rather than, e.g. conflict about more power on the national level since secessionism by definition needs a reference to a particular territory, a slot which is readily filled by an administrative unit with clear political boundaries (Sambanis and Milanovic, 2005). While ethnofederalism might allow the accommodation of various ethnic groups through the regional distribution of power, within these arrangements ethnic groups may find exactly those conditions that are conducive to secessionism. To cite only one example, in former Yugoslavia many ethnic groups had their 'own' administrative unit, e.g., Croats in Croatia and Slovenes in Slovenia, which made it easy for leaders to play the ethnic card in an escalating conflict. Clearly, the special relationship between the spatial distribution of ethnic groups and the arrangement of subnational boundaries seems to be one of the most salient features of federations with a multitude of ethnicities (Sisk, 1996).

The research question I will deal with in this paper is embedded in the debate I just sketched: Do coinciding administrative and ethnic group boundaries indeed increase the risk of secessionist conflict? The paper is structured as follows: In the second section, I will review the main literature on ethnofederal political systems and their relation to secessionist conflict. In the third section, I will establish a simple theory why exactly secession is more likely in ethnofederations before I present my hypotheses and the data I use to test these hypotheses in the fourth section.

2 The effect of ethnofederal political systems on secessionist conflict

Ethnofederations are a special subset of federations, namely those where the borders of jurisdictions tend to fall together with the boundaries of ethnic group settlements. According to a definition of Hale (2002, 4),

an ethnofederal state is a federal state in which at least one constituent territorial governance unit is intentionally associated with a specific ethnic category

Ethnofederations include, e.g., India, Russia, Belgium, and Nigeria.

Viewed from the group perspective, in an ethnofederal state one or more ethnic groups enjoy territorial autonomy with regard to (a certain type of or complete) decision-making.¹ Autonomy can be defined as "device to allow ethnic or other groups claiming a distinct

¹However, this situation is not only found in ethnofederations. Where only one or two minority groups need to be accommodated, the introduction of federalism may be regarded as unnecessary. In this case,

identity to exercise direct control over affairs of special concern to them, while allowing the larger entity those powers which cover common interests" (Ghai, 2000, 8), and territorial autonomy is the result if the ethnic group in question is concentrated in a particular region.

The literature on ethnofederalism is divided with regard to the performance of ethnofederations in governing multi-ethnic societies. Both on the theoretical and empirical front scholars disagree on whether ethnofederalism is a useful conflict-prevention or conflict-management tool. There are those scholars who propose that granting autonomy on a territorial and ethnic basis is rather beneficial for peace, and those who propose that it is detrimental. In the following, I will discuss these positions in detail.

On the one hand, ethnofederalism is viewed as being able to peacefully accommodate diverse interests, and, hence, to reduce conflict (Gurr, 2000; Hechter, 2000*b*; Lijphart, 1977; Lustick, Miodownik and Eidelson, 2004). Lijphart (1977), as one of the best-known proponents of group autonomy, suggest to delegate rule-making and rule-application, in other words legislative and executive power, to lower levels, and federal institutions are in his view an "excellent opportunity" to establish group autonomy (Lijphart, 2002, 51). Ethnofederal arrangements concerning, e.g., educational autonomy may protect a group's identity; control over judiciary and law enforcement even can protect a group's physical survival; and last but not least economic self-determination can preserve a group's prosperity. So, if minority groups do not have to worry about encroachment on their rights as ethnic group by the government, the commitment problem is eased (Fearon, 1998; Hartzell, Hoddie and Rothchild, 2001). In fact, it could be shown that decentralization, in particular in combination with proportional representation, increases the likelihood of protest but decreases the likelihood of violent rebellion (Cohen, 1997; Hechter, 2000*a*; Saideman et al., 2002). Other empirical evidence comes from Hoddie and Hartzell (2005), who find that territorial autonomy provisions increase the length of time that the parties remain at peace. Others (Stepan, 2001) point to the federal nature of long-standing multinational and multilingual democracies, and Bermeo (2002, 108) states that "no violent separatist movement has ever succeeded in a federal democracy".

On the other hand, there are reasons to expect a conflict-fueling effect of territorial decentralization on the basis of ethnic group boundaries. First, regional autonomy arrangements short of complete partitioning may not only leave identity incompatibilities in place (Chapman and Roeder, 2007) but will 'harden' them, i.e. the administrative setting enhances a group's legitimacy to get an own state, ethnic identities are being forged, 'politicized' and get attached to the territory, the administrative unit, and growing demands and secessionist conflict are likely (Brubaker, 1996; Bunce, 2004; Gorenburg, 2000; Nordlinger, 1972; Roeder, 2007; Sisk, 1996; Snyder, 2000). Second, Brancati (2006) argues that decentralization may strengthen regional parties, which increases the mobilization capacity for secessionist agendas in the future. Hence, the mere existence of state institutions on the regional level provides ethnic groups with the resources to make a secession feasible and look legitimate for the international community (Bunce, 2004; McGarry and O'Leary, 2003; Roeder, 2007). Third, territorial decentralization will entail the creation of new minorities since segmented states are never completely homogenous, and these, in turn, may fear being disadvantaged and suppressed (Duchacek, 1975). Forth, Sambanis and Milanovic (2005) argue that the concentration of an ethnic group in an administrative unit

regional or territorial autonomy is granted to certain areas of the country, and the region does not play a big political role in the national level (Ghai, 2000).

increases the level of differentiation of that unit compared to the rest of the country, at least concerning ethnicity, and this would increase the demands for sovereignty. Finally, on a more abstract level, autonomy means an improvement of the bargaining position of the minority, which can give rise to increased demands (Treisman, 1997). Empirical evidence that ethnofederal institutions may be more conflict-prone comes, e.g., from Hale (2002) and Christin and Hug (2006). Roeder (2007) finds that so-called 'segmented states', which are exactly those states where ethnic group boundaries and administrative boundaries coincide, have an increased propensity to experience secessionist conflict.

Unfortunately, systematic large-N analyses on the effect of ethnofederal institutions on secessionist conflict are rare. Some scholars do large-N studies on the effect of federalism (Bakke and Wibbels, 2006*b*; Cohen, 1997; Saideman et al., 2002) or territorial decentralization (Brancati, 2006) on conflict, but usually the special case of ethnofederalism is only accidentally covered. E.g. while Brancati (2006) argues that decentralization may help regional parties to gain increased importance, which might lead to secessionism, she does not address group settlement patterns with relation to unit boundaries, which is the distinctive feature of ethnofederations.

There are notable exceptions however, which address ethnofederalism directly. Hale (2000), e.g. focusses on one ethnofederal state, the former USSR. He measures the time between the declaration of independence of Estonia (as the first of the former Soviet republics) and the independence of other republics. Unfortunately, the sample is restricted to cases from the Soviet Union, and his dependent variable is not secessionist conflict. Roeder (2007) develops an elaborate and comprehensive theory about why segment-states are more prone to secessionist conflicts, which is mostly informed by cases from the Soviet Union and the Russian Federation. His logit analysis regresses the occurrence of a nation-state crisis, i.e. secessionist crisis, on the presence of segmental institutions. Unfortunately, his dichotomous variable of access to segmental institutions in the statistical analysis does not capture the variations in political systems regarding the overlap between group and administrative boundaries.

Some of the other literature on the effect of ethnofederalism on secession suffers from the fact that the unit of analysis is a country-year (Bakke and Wibbels, 2006*a*; Christin and Hug, 2006).² Even if the ethnic makeup of the country is taken into account, these studies do not shed light on which regions (or which groups for that matter) are most conflict-prone. Among duration models, the analysis of Hartzell, Hoddie and Rothchild (2001) on the effect of peace settlements with provisions on territorial decentralization on the length of the following peace period is certainly interesting. While their study finds that territorial decentralization provisions increase the probability that the agreement survives in the following 5 year period, which can be considered short-term, we are left with the question whether or not secessionist conflict may be likely in the long-term. Hoddie and Hartzell (2005) do not limit their dependent variable in this way anymore but whether secessionist conflict is likely at some point in the future is still not being addressed.

Finally, some of the work that addresses ethnic groups directly, e.g. Brancati (2006), relies on the Minorities at Risk (MAR) dataset (Gurr, 1993). However, the MAR dataset suffers from fact that the inclusion of an ethnic group in the dataset may be correlated with the dependent variable, conflict. This does not allow any generalization beyond

²Sambanis and Milanovic (2005) as one of the rare works uses administrative units as the unit of analysis that correlates regional wealth, population and resource data with the demand for greater sovereignty.

ethnic groups that are already "significantly deprived" (Fearon and Laitin, 1999, 5).

To conclude, it is far from clear whether territorial decentralization on the basis of ethnicity as is the case in ethnofederalism is a good institutional choice, especially in states where a multitude of ethnic groups compete over power. This impression is confirmed by Treisman (2007) who notes that there is hardly any robust empirical finding that supports any general statement about the consequences of decentralization.

3 Why secession is more likely in ethnofederal states

How are ethnofederal institutions and secessionist conflict related? In order to answer this I will set the theoretical framework concerning the main actors in a contentious environment, their constellation towards each other, and the structures that make conflict more likely.

Along with Tilly's polity model (Tilly, 1978) I presuppose that a given state consists of a population and a government. The government, also called the polity, exerts control of the population, which lives in a jurisdiction. Members within the government as well as outside contenders are assumed to apply resources to influence the government. Hence, in the model, competition for executive power can occur between members of government themselves, as well as between members of government and challengers from outside. The latter is in line with standard civil war definitions, where one party to the conflict must be the government (Sambanis, 2004). One deviation from the model is that contenders who are not represented in government may not try to gain access to the polity but try to leave the state by seceding. Further, since there exists the possibility of several, hierarchically ordered jurisdictions within a state, competition for power can concern access to subnational institutions as well. Ethnic groups may not want representation and power in the central government but may settle for limited autonomy in a lower tier jurisdiction.

Given these assumptions, what are the factors that let us actually observe ethnic groups or their organizations start an armed struggle for secession? One determinant for the occurrence of violent conflict is that collective action problems are overcome. Tilly (1978) assumes that collective action by outside contenders is a function of characteristics of the contender group itself;

1. the extent of shared interests (advantages and disadvantages likely to result from interactions with other groups),
2. the intensity of its *organization* (the extent of common identity and unifying structure amongs its members), and
3. its *mobilization* (the amount of resources under collective control) (p.84, italics in original)

Adding a fourth point to this list, it is a function of characteristics of the other actor, in this case the state: e.g., repression/facilitation by the central government will have an influence on collective action as well.

I argue that in ethnofederal political systems with lower-tier administrative units, homogenously populated and supplied with decision-making autonomy, many of these prerequisites for collective action are present.

In particular one mechanism, identified by several scholars cited above, is likely to be play out: If ethnic groups exclusively populate subnational administrative units, the importance of subnational borders by itself may stress a common identity (Knight, 1982) since the border separates one ethnic group from the other. This is captured by Tilly's item 2. While this mechanism remains a bit fuzzy, another way how regional autonomy may increase the likelihood of "political-identity hegemony" (Roeder, 2007) is as follows: Democratic competition lets leaders seek power by stressing the nationalist agenda in opposition to the host state, hence "politicians with stronger objections to remaining within the common-state are likely to come to dominate political life" (Roeder, 2007, 19). If this is the case, the strengthening of regional parties is the result, and 'ethnic outbidding', i.e., the use of an ethnicity-related agenda to recruit voters, is likely (Brubaker, 2002; Gorenburg, 2000; Horowitz, 1985), which may lead to conflict (Devotta, 2005). Regional autonomies provide exactly those opportunities that can induce leaders to push the nationalist agenda to stay in power.

Of course, this mechanism need time to develop, hence, ethnofederal political systems may fail only after some time has elapsed. Also, other mechanisms might be activate be activated simultaneously. For example, Tilly's item 3 together with my added forth one circumscribe an increase in resources on the subnational level, which induces a shift in the balance of power between the central government and the regional administration. From the perspective of the group, the devolvement of power to lower levels increases the resources under collective control and, hence, mobilization capacity.³ This is also likely to increase the risk for secessionist conflict but for the moment I leave this issue to future research.

To sum up, I start my assessment of ethnofederalism by joining the opponents of ethnofederalism. In doing this, I hope to improve on the literature's tendency to consider ethnofederal institutions as dichotomous; a state is either ethnofederal or not. Even if it is a distinctive characteristics of ethnofederations that group and administrative boundaries tend to coincide, a main premise of this paper is that ethnofederal political systems differ, and not only with respect to boundaries. This has been clearly articulated by Roeder (2007, 63), who stresses that a segmented state is not a binary concept:

Segmented states are not all alike. Most fundamentally, they are based on varying notions of sovereignty - that is, their answers to the question, *what population* possesses the power to allocate and reallocate decision rights? Second, they vary in the ways their constitutions have actually allocated decision rights - specifically, the extent to which they empower the people of each segment-state to design their own political institutions, to select their own political leadership, to participate in the governance of the common-state, and to make policy. (italics added)

In other words, ethnofederal institutions and regional autonomy arrangements vary along two dimensions, first, the degree of association between administrative units and

³The example of decentralization reforms in Columbia in the 1980s illustrates how this can happen. These reforms were intended to integrate the guerilla groups into the political system but the newly available funds at the subnational level as well as access to political power were then used to continue the armed struggle (Eaton, 2005).

ethnic groups, and second, the actual amount of power that is devolved to lower levels. As indicated, I will focus on the first dimension.

Further, as already indicated, the administrative unit as unit of analysis has been neglected. Compared to country-level analyses, unit-level analyses seem more adequate to answer the questions about secessionism since secessionist conflict includes per definition the reference to a particular piece of territory, which very often is a region or administrative unit. According to Bookman (1992, 5), "most cases of secession involve relatively large and clearly defined political and administrative units". In fact, in the 31 countries of the Administrative Unit dataset (see section 4.1.1) roughly 2/3 of the secessionist conflicts I identified involve a first-level administrative unit as geographical referent. Administrative boundaries seem to be the most likely breaking point since in case of partition the administrative reorganization would be minimal (Carter and Goemans, 2009). In group-level and country-level analyses, useful as they are, it is usually neglected which piece of territory is most prone to secessionism.

4 Empirical analysis

Relying on the theoretical considerations above, ethnofederal institutions are likely to facilitate collective action. As indicated, ethnofederal political systems differ in terms of the degree of congruence between settlement patterns of an ethnic group and lower tier jurisdiction borders. The congruence between group and administrative boundaries⁴ is high if, first, no other ethnic groups live in the administrative unit, and/or second, if the group extends to other administrative units.

Concerning the first point, if a unit is rather exclusively populated by one ethnic group, the likelihood increases that regional institutions are also exclusively governed by that ethnic group; other ethnic groups with whom multiethnic coalitions could be formed to counteract nationalistic politics (Horowitz, 1985) are simply not existent, hence,

H1: The more exclusively subnational units are populated by an ethnic group, the higher the risk for secessionist conflict.

Second, if an ethnic group is spread over several subunits where it possibly holds positions of representation, secession is less attractive since these power positions would have to be given up (Horowitz, 1985). Formulated in reverse,

H2: The less ethnic groups are dispersed over several subunits, the higher the risk for secessionist conflict.

As indicated by Roeder (2007), when powers are devolved to a subnational unit, groups get empowered to the degree they are concentrated in this unit. Hence, my last working hypothesis combines H1 and H2; both conditions might be necessary for secessionist conflict to occur:

H3: The more ethnic group boundaries coincide with administrative boundaries, i.e. the more homogenous a unit is and the less dispersed the groups are, the higher the risk for secessionist conflict.

⁴Sambanis and Milanovic (2005) use a similar measure but they use it to measure ethnic differentiation of an administrative unit compared to the rest of the country

4.1 Methodology

I intend to test these hypotheses statistically. I run two sets of analyses. In the first, the unit of analysis is the first-level administrative unit per year and the dependent variable is conflict onset in a year. With the second set of analyses, I intend to rule out the possibility of endogenous effects; it is not only possible but somewhat plausible that the overlap between group and unit boundaries is not random but possibly the consequence of a previous conflict. This would bias the results of the correlational analysis. Hence, in the second set, the unit of analysis is an administrative unit in the first year of its existence, and the dependent variable is whether the unit will experience conflict some during its lifetime. This does not completely exclude the possibility that the overlap between group and unit boundaries is due to previous violence since many administrative units existed even before 1946, the start year of my dataset, but reduces the chances.

I will first introduce the Administrative Units dataset before I elaborate on dependent and independent variables and present the results from the regression.

4.1.1 The Administrative Units dataset

The Administrative Units dataset contains data on the lifetime and geographical extension of first-level administrative units.⁵ It includes 31 countries⁶ and covers the years from 1946 to 2009.

For the definition of a first-level administrative unit I mostly rely on the FIPS PUB 10-4 standard.⁷ Since this standard was introduced only in 1970 other sources were needed to gather data from 1946 on. In these cases I relied on information from the Administrative Divisions of Countries project.⁸ Other sources such as *Wikipedia*, the *CIA World Factbook*⁹, and the *World Statesmen Encyclopedia*¹⁰ also assisted in the coding.

All the 31 countries included in the dataset have been federal or 'quasi-federal' for at least a year between 1946 and 2000 according to the definition of Bednar (2009). From Bednar's list of federations I deleted Comoros, Micronesia, St.Kitts and Nevis, and the European Union, since those federations are either too small in population or do not constitute a sovereign state.

Concerning the time coverage of each country, a country has of course a shorter time coverage if it became independent after 1946 or ceased to exist before 2009; the 'birth' and 'death' dates of the units are adjusted accordingly. More information on coding etc. can be found in the appendix.

⁵First-level means one level below the national level

⁶Argentina, Australia, Austria, Belgium, Bosnia and Herzegovina, Brazil, Cameroon, Canada, Czechoslovakia, Ethiopia, Germany, India, Italy, Malaysia, Mali, Mexico, Myanmar, Nigeria, Pakistan, South Africa, Spain, Sudan, Switzerland, Tanzania, Ukraine, United Arab Emirates, United Kingdom, United States of America, USSR/Russia, Venezuela, and Yugoslavia/Serbia and Montenegro

⁷This standard defines "Countries, Dependencies, Areas of Special Sovereignty, and Their Principal Administrative Divisions" (<http://www.itl.nist.gov/fipspubs/fip10-4.htm>). The only case where I substantially deviated from the FIPS standard is the United Kingdom since here the first level beneath the national level is not the counties as listed in FIPS but indeed the four constituting countries England, Scotland, Northern Ireland, and Wales.

⁸<http://www.statoids.com>

⁹<https://www.cia.gov/library/publications/the-world-factbook/>

¹⁰<http://www.worldstatesmen.org/>

4.2 Main dependent and independent variable

The **dependent variable** is the dichotomous variable 'onset of secessionist conflict' as coded in the Extended Armed Conflict dataset (Cunningham, Gleditsch and Salehyan, 2009)¹¹. This dataset expands the Uppsala Armed Conflict Data (Gleditsch et al., 2002) about civil conflicts with information about the non-state actors involved in civil conflict. Armed conflict is defined as 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. Of these two parties, at least one is the government of a state. (p.618f)

For the main part of the analysis, a unit-year is coded as experiencing a conflict onset if the secessionist region was that particular administrative unit. Whether or not that was the case was determined by collecting information on the conflict itself. Here I mostly used conflict narratives from the Uppsala Conflict Database.¹² For all other years, conflict onset is coded 0. The date of the onset is determined by the entry of a non-state actor into the conflict. Since the same non-state actor can enter and exit the same conflict several times or many different non-state actors can participate in the same conflict, it is possible that there are several onsets per administrative unit. For the follow-up analysis, I slightly change the dependent variable to whether or not a 'just born' administrative unit will experience a conflict onset during its lifetime as indicated above.

The main **independent variable** is the degree of congruence between administrative units and ethnic group settlement areas measured in three ways to provide indicators for the three hypotheses. Data on ethnic group settlements comes from the EPR dataset (Min, Cederman and Wimmer, 2008) and its extension GeoEPR. EPR identifies politically relevant ethnic groups in 155 sovereign states between 1946 and 2005, and in particular list their level of access to central state power.¹³ GeoEPR adds the geographical dimension by providing the location of settlements. Whenever the group location changes through migration etc., a new observation is listed.

In a first step, I measure congruence dyadically: For every group living in a given administrative unit I determined the following measures:

1. **overlap A**: area of intersection of administrative unit area and group area / administrative unit area
2. **overlap B**: area of intersection of administrative unit area and group area / group area
3. **overlap C**: area of intersection of administrative unit area and group area / (administrative unit area + group area - intersection area)

The first measure operationalizes the degree to which the unit is 'covered' by a group and is, hence, suitable for testing H1. The second operationalizes the degree to which a group lives in the unit and is suitable for testing H2. The third measure puts the

¹¹ Available from <http://privatewww.essex.ac.uk/~ksg/eacd.html>

¹² <http://www.pcr.uu.se/gpdatabase/search.php>

¹³ The EPR dataset differs from MAR dataset by not only encompassing 'at-risk' groups but also majority groups.

intersection area in relation to both the unit area and the group area and operationalizes the overlap measure in H3.

For the statistical analysis I aggregate on administrative unit and use the mean overlap measure of all dyadic overlaps in a unit as final value of the independent variable.

The link between a non-state actor in a conflict and ethnic groups is provided by a collaborative research project of ETH Zurich and University of Essex¹⁴, which lists information on whether a rebel organization claims to act in the name of an ethnic group, whether it is supported by an ethnic group, and whether it recruits from an ethnic group. Whenever the first two conditions are given, I define that the ethnic group is involved in that conflict. The question that guides the analysis is whether this ethnic group has a high overlap with the administrative unit experiencing the conflict.

On a final note, as should be clear, I only include administrative-unit - group dyads where at least part of the group lives in the unit. By definition, then, a group cannot be involved in a secessionist conflict including a particular administrative unit if that group does not live in it. This seems to be a reasonable assumption for the time being.

In an attempt to control for possible endogenous effects (see above), I lag the overlap measures by one year.

4.3 Control variables

According to Hegre and Sambanis (2006), population and wealth are fairly robust predictors of civil war onset. Therefore I include logged *GDP per capita* and logged *population* as control variables. GDP per capita is measured on the country level, while population is measured on the administrative unit level. The population figures per administrative unit are computed by aggregating raster cells containing population data at a resolution of 2.5 arcminutes¹⁵ for each unit area. Further, I include a dummy *War history*, which notes whether an administrative unit has been experienced a secessionist conflict in the past to control for the influence of prior conflict. A country-level control for *Level of democracy* is provided by the Scalar Index of Politics (Gates et al., 2006), which is the average of the three dimensions 'executive recruitment', 'constraints on the executive' (both taken from the Polity dataset (Gurr, 1974; Marshall and Jaggers, 2009) and 'political participation' and varies between 0 and 1. Finally, I control for the *Number of groups* living in an administrative unit.

4.4 Descriptive statistics

The data used in the statistical analysis includes 651 administrative units in 27 countries¹⁶ with a total of 34 secessionist conflict onsets.

Maximum number of administrative units per country is 104 (Soviet Union/Russia); minimum number is 2 (Czechoslovakia, Bosnia and Herzegovina). On average, 2.7 ethnic groups live in each administrative unit with a minimum of 1 and a maximum of 49 groups (Russia before 1991).

¹⁴Prof. Lars-Erik Cederman, Julian Wucherpfennig and Manuel Vogt at ETH Zurich; Prof. Kristian S. Gleditsch and Nils Metternich at University of Essex

¹⁵Unfortunately, this data is available for a few year only; the population data I used stems from 1990.

¹⁶Some of my countries (Germany, Italy, Tanzania, United Arab Emirates) drop out because GeoEPR has missing data in these cases and hence prevents the calculation of overlap measures.

The following table gives descriptive statistics for the three overlap measures:

Variable	Obs	Mean	Std. Dev.	Min	Max
overlap A	23726	.634	.306	0	1
overlap B	23726	.105	.136	0	1
overlap C	23726	.077	.089	0	.84

The correlation between the three measures is low except between overlapB and overlapC (0.69). This might be explained by looking at the distribution of the unit and group area variables as well as the formulae which generated the measures. On average, a group area is 4 times larger than a unit area. This means the denominator of overlapC is dominated by the group area value; the unit area value, which is added to the denominator does not chip in much in comparison.

4.5 Models

First, I employ a logistical regression with onset of secessionist conflict as dependent variable. Ongoing years of conflict are dropped from the analysis. In order to control for time dependence I follow the recommendation of Carter and Signorino (2009) and include t , t^2 and t^3 as regressors with t denoting the number of years since the unit experienced the last conflict onset. The overlap variables as well as the control variables *GDP per capita* and *level of democracy* are lagged by one year.

Second, I use only a subset of the data, i.e. only the first year of each administrative unit, slightly change the dependent variable to 'future conflict' as indicated above and run another logistical regression. Here I do not lag any independent variable.

4.6 Regression analysis

Table 1 shows the regression results for six models in the first part of the analysis, three for each of the three overlap measures with and without controls. Most importantly, the results show that both overlap B and overlap C, which correspond to H2 and H3, are positively and significantly related to secessionist war onset and remain so after introducing control variables even if the magnitude of the coefficients decreases slightly. Overlap measure A, which was negatively and significantly correlated with secessionist conflict onset in the bivariate model, loses its significance in the model with all control variables. The results of the second analysis (see table 2) differ from the first set of analyses, mostly with regard to most of the control variable which are not significantly related to conflict onset anymore with the exception of the robust *GDP per capita* variable, but also with regard to the overlap measure B, whose coefficient has roughly the same sign and magnitude but just ceases to be significant on the 5% level ($p = 0.07$). Overlap measure C on the other hand stays positively and significantly related to conflict onset.

With regard to the control variables, the three models in the first analysis do not differ much with regard to significance or magnitude of the coefficient. The *number of groups* is significantly and positively related to conflict onset, which is not surprising. The more ethnic groups live in a unit, the more possibilities there are for conflict to arise. Similarly not surprising, *GDP per capita* is significantly and negatively related to secessionist conflict onset. The *level of democracy* is mostly positively correlated with conflict onset, except

	Secessionist conflict onset					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>overlap A</i>	-2.531 (.725)***	-1.877 (.967)				
<i>overlap B</i>			3.961 (.656)***	2.550 (.951)**		
<i>overlap C</i>					4.711 (1.088)***	4.195 (1.658)*
<i>Capital distance</i>		-.0004 (.0003)		-.0004 (.0004)		-.0003 (.0003)
<i>Population (logged)</i>		-.337 (.141)*		-.370 (.149)*		-.365 (.147)*
<i>Number of groups</i>		.089 (.045)*		.092 (.039)*		.120 (.037)**
<i>War history</i>		-3.787 (.464)***		-3.550 (.498)***		-3.671 (.475)***
<i>GDP per capita (logged)</i>		-.367 (.182)*		-.545 (.192)**		-.515 (.189)**
<i>Level of democracy</i>		1.330 (.616)*		1.061 (.606)		1.362 (.611)*
<i>t</i>		-.385 (.134)**		-.406 (.135)**		-.391 (.134)**
<i>t²</i>		.017 (.006)**		.018 (.006)**		.018 (.006)**
<i>t³</i>		-.0002 (.00008)*		-.0002 (.00008)**		-.0002 (.00008)*
<i>Const</i>		3.394 (2.122)		2.596 (2.181)		2.246 (2.143)
<i>N</i>	23726	20263	23726	20263	23726	20263

* p<0.05, ** p<0.01, *** p<0.001

Table 1: Regression results I

in model 4, where the coefficient just ceases to be significant ($p = 0.08$). This is in line with Cederman and Girardin (2007) for example.

War history seems to have a negative effect on conflict onset, which is a bit puzzling since many other studies show that especially conflicts about territory seem to be longlasting and recurring (Collier, Hoeffler and Soederbom, 2004; Fearon, 2004) so that we would expect that administrative units which already experienced conflict have a higher risk of experiencing another onset than those who never saw any fighting. Also, the *population* variable turns out to be negatively correlated with conflict onset, which is inconsistent with the finding of Hegre and Sambanis (2006) and many others, who find that population is positively correlated with conflict onset on the *country* level. First, this could

	Secessionist conflict onset (future)		
	(7)	(8)	(9)
<i>overlap A</i>	-.602 (.972)		
<i>overlap B</i>		2.254 (1.356)	
<i>overlap C</i>			4.483 (1.926)
<i>Capital distance</i>	-.0002 (.0004)	-.0001 (.0004)	-.0001 (.0004)
<i>Population (logged)</i>	-.072 (.191)	-.120 (.191)	-.108 (.189)
<i>Number of groups</i>	.127 (.061)*	.112 (.064)	.143 (.065)*
<i>GDP per capita (logged)</i>	-.813 (.222)***	-.808 (.212)***	-.783 (.210)***
<i>Level of democracy</i>	.507 (.668)	.455 (.683)	.500 (.683)
<i>Const</i>	-1.990 (2.881)	-1.941 (2.694)	-2.392 (2.689)
<i>N</i>	593	593	593

* p<0.05, ** p<0.01, *** p<0.001

Table 2: Regression results II

mean that on the administrative unit level the logic is not the same as on the country level where more people mean more possibilities for fighting; rather it could be that more people means more obstacles in coordinating collective action for fighting a secessionist conflict in that administrative unit. Another possibility is that my measure for population, which is time invariant, might be inaccurate for some units and would have to be replaced by a better measure. Finally, *capital distance* does not seem to be correlated with conflict onset.

To conclude, there is no evidence for H1, mixed evidence for H2, and strong evidence for H3. To get a clearer picture of the effect of overlap measure C, Figure 1 plots the predicted annual probability of secessionist conflict onset as a function of the overlap. The graph displays three curves based on the estimates of model 6. The middle curve displays the conflict risk of a typical administrative unit where all other independent variables are held at their means. If the overlap measure has a value of 0, the conflict risk is almost 0 as well. If the overlap is 1, the probability of conflict rises up to 0.02. If at the same time the administrative unit is comparably poor, i.e. has a minimal GDP per capita value, the risk for secessionist conflict onset grows above 0.1. If it is comparably wealthy, conflict risk stays at about 0.01.

To sum up, the picture drawn by the analysis is that an administrative unit has a

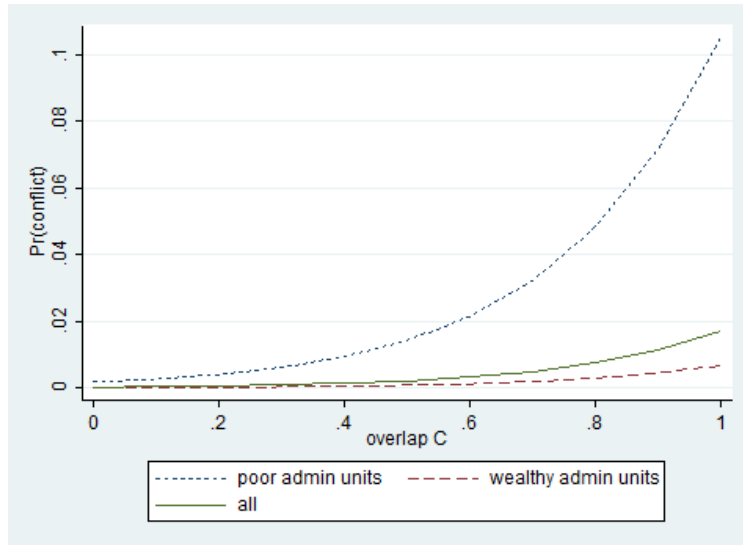


Figure 1: Predicted conflict probabilities as a function of overlap

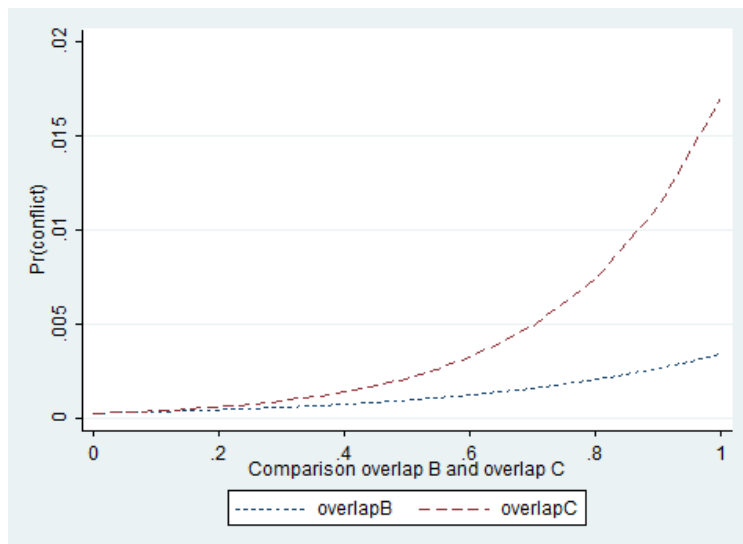


Figure 2: Comparison of the effect of overlap B and C

relatively high risk for secessionist conflict when it inhabits an ethnic group, which does not live in other administrative units but that does not necessarily live alone in that administrative unit. If the latter is the case though, additional to the constraint that the group does not live anywhere else, then the risk for conflict is even higher. Figure 2 demonstrates this effect (also based on estimates of model 6).

5 Conclusion

In this paper, I have addressed the question whether ethnofederalism is related to secessionist conflict by focussing on the relationship between subnational boundaries and group boundaries, which is a crucial aspect of ethnofederations. Using a Geographical Information System approach to measure the degree to which administrative unit boundaries are actually 'ethnofederal', i.e. coincide with ethnic group boundaries, my regression analysis supports the hypothesis that overlap actually matters for secession, if overlap means that the administrative unit is mostly populated by one ethnic group which does not live in other units (H3). Whether the hypothesis that an ethnic group which does not live anywhere else increases conflict onset risk (H2) is confirmed in the main analysis but does not seem to be robust in the second analysis. Concerning H1, the data does not give us any reason to reject the null hypothesis that a unit, whose area is mostly populated by one ethnic group, does not have an effect on secessionist conflict onset. To conclude, there is at least some evidence that the 'identity mechanism' I sketched above takes place. The results confirms the fears of opponents of ethnofederalism, who worry that a governance structure which gives ethnic group their own administrative units might lead to secession and state breakup.

The analysis differs from most other studies about ethnofederalism and secessionist conflict by using the administrative unit as level of analysis, which seems more suitable for capturing differences among first-level administrative units in ethnofederations as well as addressing secession. However, even with this disaggregated approach (compared to country-level analyses) still a lot is left unknown about how exactly the overlap translates into escalation and conflict. Here, e.g. the role of political leaders, who can exploit the ethnic group constellation in 'their' administrative unit, has to be looked at, which is difficult to do in a statistical analysis. In any case, I hope that my study has shed even more light on the relationship between ethnofederalism and secession and serves as a basis to dig deeper into this issue.

6 Appendix

6.1 The Administrative Unit dataset - Variables

The variables in the dataset are rather self-explanatory.

ADMIN_NAME The (most recent) English name of the administrative unit

uid Unique ID (since not every administrative unit has a FIPS code)

fips The 4-letter FIPS code consisting of two letters denoting the country and two digits for the unit

startd Day of the 'birth' date of the unit, no preceding zeros (1-31, 0 for missing)

startm Month of the 'birth' date of the unit, no preceding zeros (1-12, 0 for missing)

starty 4-digit year of the 'birth' date of the unit

endd Day of the end date of the unit, no preceding zeros (1-31, 0 for missing). If the unit was still existent on Dec 31, 2008, I coded this as 0/0/0000.

endm Month of the end date of the unit, no preceding zeros (1-12, 0 for missing)

endy 4-digit year of the end date of the unit

GMI_CNTRY The 3-letter GMI country code

CNTRY_NAME The English name of the country

cow Correlates-of-War country code

6.2 Coding notes

6.2.1 Maps

In order to collect geographical data on administrative units, geo-referencing of electronic country maps was necessary. The usual procedure was to start off with an already existing global ESRI shapefile of first-level administrative units from the year 1998 (*ESRI Data & Maps*, 1998) and add polygons from time periods before and after. To create polygons, electronic maps e.g. from the map collection of the University of Texas and www.worldatlas.com were geo-referenced. Since the resolution of these maps differ, there is visible variation in the level of boundary detail, yet there is no reason to expect that this would systematically bias the results of the analysis.

6.3 Territorial changes

Whenever a unit substantially changed its borders, a new unit-period was coded. A substantial change is the loss or accession of a significant amount of territory, or a complete break-up and merging into other units. Minor changes such as territorial transfers between two subnational units of less than roughly 1,000 sq.km.¹⁷ are usually not coded, also because there were no electronic maps available detailed enough to reflect these small changes anyway.

My main source, the Administrative Divisions of Countries project¹⁸, codes the "effective date of the law that makes the change" rather than the publication in the media, the effective implementation, or the first meeting of the legislature of the new unit. If an exact date can be found when these changes occurred, year, month and day are listed, otherwise only the year, or the year and the month is given.

6.4 Name changes

If a unit gets renamed but does not change territorially, no new unit-period is coded. Of all the names a unit may have had, the latest name of this unit defines its identity, yet alternative names are recorded as well, even if not exhaustively. However, if together with the name change there was a change in territory, I code this as the 'death' of the unit.

There are cases where the name of a unit stays the same but its geographical extension changes, sometimes completely, e.g. "Federal District" in Brazil, which moves from one location of the country to another. In this case I also kept the identity of the unit but of course a new unit-period is entered.

¹⁷This was no strict criterion for coding. However, the dataset does not intend to record every minute detail of border changes but broad, mostly politically relevant changes.

¹⁸<http://www.statoids.com>

References

- Bakke, Kristin and Erik Wibbels. 2006*a*. Diversity, Disparity, and Civil Conflict in Federal States. *World Politics* 59(1):1–50.
- Bakke, Kristin M. and Erik Wibbels. 2006*b*. "Peace-Preserving" Federalism? *Paper presented at the ISA 2006 Meeting*, San Diego, CA.
- Bednar, Jenna. 2009. *The Robust Federation*. Cambridge: Cambridge University Press.
- Bermeo, Nancy. 2002. The Import of Institutions. *Journal of Democracy* 13(2):96–111.
- Bookman, Milica Zarcovic. 1992. *The economics of secession*. New York: St.Martin's Press.
- Brancati, Dawn. 2006. Decentralization: Fueling the Fire or Dampening the Flames of Ethnic Conflict and Secessionism. *International Organization* 60:651–685.
- Brubaker, Rogers. 1996. *Nationalism Reframed*. Cambridge: Cambridge University Press.
- Brubaker, Rogers. 2002. Ethnicity without groups. *Archives Europeenes de Sociologie* XLIII(2):163–189.
- Bunce, Valerie. 2004. Federalism, Nationalism and Secession: The Communist and Post-communist Experience. In *Federalism and Territorial Cleavages*, ed. Ugo M. Amoretti and Nancy Bermeo. Baltimore and London: John Hopkins University Press.
- Carter, David B. and Curtis S. Signorino. 2009. "Back to the Future: Modeling Time Dependence in Binary Data". *Working paper*.
- Carter, David B. and Hein B. Goemans. 2009. "The Making of the Territorial Order: New Borders and the Emergence of Interstate Conflict". *Working paper*.
- Cederman, Lars-Erik and Luc Girardin. 2007. Beyond Fractionalization: Mapping Ethnicity Onto Nationalist Insurgencies. *American Political Science Review* 101(1):173–185.
- Chapman, Thomas and Philip G. Roeder. 2007. Partition as a Solution to Wars of Nationalism: The Importance of Institutions. *American Political Science Review* 101(4):677–691.
- Christin, Thomas and Simon Hug. 2006. Federalism, the Geographic Location of Groups and Conflicts. *Paper presented at the Annual Meeting of the American Political Science Association*, August 31 - September 3, 2006, Philadelphia.
- Cohen, Frank S. 1997. Proportional versus Majoritarian Ethnic Conflict Management in Democracies. *Comparative Political Studies* 30(5):607–630.
- Collier, Paul, Anke Hoeffler and Mans Soederbom. 2004. On the Duration of Civil War. *Journal of Peace Research* 41(3):253–273.
- Cunningham, David E., Kristian Skrede Gleditsch and Idean Salehyan. 2009. It Takes Two: A Dyadic Analysis of Civil War Duration and Outcome. *Journal of Conflict Resolution* 53(4):570–597.

- Devotta, Neil. 2005. From ethnic outbidding to ethnic conflict: the institutional bases for Sri Lanka's separatist war. *Nations and Nationalism* 11(1):141–159.
- Duchacek, Ivo D. 1975. External and Internal Challenges to the Federal Bargain. *Publius* 5(2):41–76.
- Eaton, Kent. 2005. The Unintended Consequences of Decentralization. *Paper presented at the American Political Science Organization*, Sep 1-4, 2005, Washington, DC.
- ESRI Data & Maps*. 1998.
- Fearon, James D. 1998. Commitment Problems and the Spread of Ethnic Conflict. In *The International Spread of Ethnic Conflict*, ed. David A. Lake and Donald Rothchild. Cambridge University Press.
- Fearon, James D. 2004. Why Do Some Civil Wars Last So Much Longer Than Others? *Journal of Peace Research* 41(3):275–301.
- Fearon, James D. and David D. Laitin. 1999. Weak States, Rough Terrain, and Large-Scale Ethnic Violence Since 1945. *Paper presented at the American Political Science Association*, 2-5 September 1999, Atlanta, GA.
- Gates, Scott, Havard Hegre, Mark P. Jones and Havard Strand. 2006. Institutional Inconsistency and Political Instability: Polity Duration, 1800-2000. *American Journal of Political Science* 50(4):893–908.
- Ghai, Yash P. 2000. *Autonomy and ethnicity : negotiating competing claims in multi-ethnic states*. New York: Cambridge University Press.
- Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg and Havard Strand. 2002. Armed Conflict 1946-2001: A New Dataset. *Journal of Peace Research* 39(5):615–637.
- Gorenburg, Dmitry. 2000. Not With One Voice - A Explanation of Intragroup Variation in Nationalist Sentiment. *World Politics* 53:115–142.
- Gurr, Ted R. 1993. *Minorities at risk - A global view of ethnopolitical conflicts*. Washington DC: United States Institute of Peace Press.
- Gurr, Ted R. 2000. Ethnic Warfare on the Wane. *Foreign Affairs* 79(3):52–64.
- Gurr, Ted Robert. 1974. Persistence and Change in Political Systems, 1800-1971. *American Political Science Review* 68:1482–1504.
- Hale, Henry E. 2000. The Parade of Sovereignties: Testing Theories of Secession in the Soviet Setting. *British Journal of Political Science* 30:31–56.
- Hale, Henry E. 2002. Divided We Stand - Institutional Sources of Ethnofederal Survival and Collapse. *Paper presented at the Annual Meeting of the American Political Science Association*, August 29, 2002, Boston, MA.

- Hartzell, Caroline, Matthew Hoddie and Donald Rothchild. 2001. Stabilizing the Peace After Civil war: An Investigation of Some Key Variables. *International Organization* 55(1):183–208.
- Hechter, Michael. 2000a. *Containing Nationalism*. Oxford: Oxford University Press.
- Hechter, Michael. 2000b. Nationalism and Rationalism. *Journal of World-Systems Research* 6(2):308–329.
- Hegre, Havard and Nicholas Sambanis. 2006. Sensitivity Analysis of Empirical Results on Civil War Onset. *Journal of Conflict Resolution* 50(4):508–535.
- Hoddie, Matthew and Caroline Hartzell. 2005. Power Sharing in Peace Settlements: Initiating the Transition from Civil War. In *Sustainable Peace - Power and Democracy After Civil Wars*, ed. Philip G. Roeder and Donald Rothchild. Ithaca and London: Cornell University Press.
- Horowitz, Donald L. 1985. *Ethnic Groups in Conflict*. Berkeley, Los Angeles: University of California Press.
- Knight, David. 1982. Identity and Territory: Geographical Perspectives on Nationalism. *Annals of the Association of American Geographers* 72(4):514–531.
- Lijphart, Arend. 1977. *Democracy in plural societies*. New Haven, CT: Yale University Press.
- Lijphart, Arend. 2002. The Wave of Power Sharing Democracy. In *The Architecture of Democracy: Institutional Design, Conflict Management, and Democracy in the Late Twentieth Century*, ed. Andrew Reynolds. Oxford: Oxford University Press pp. 37–54.
- Lustick, Ian S., Dan Miodownik and Roy J. Eidelson. 2004. Secessionism in Multicultural States: Does Sharing Power Prevent or Encourage It? *American Political Science Review* 98(2):209–229.
- Marshall, Monty G. and K. Jaggers. 2009. “Polity IV Project.”.
- McGarry, John and Brendan O’Leary. 2003. Federation, Conflict Regulation and National and Ethnic Power-Sharing. *Paper presented at the 2003 Annual Meeting of the American Political Science Association*, August 2003.
- Min, Brian, Lars-Erik Cederman and Andreas Wimmer. 2008. Ethnic Power Relations: A New Dataset on Access to State Power of Politically Relevant Ethnic Groups, 1946-2005. *Paper presented at the Annual Meeting of the American Political Science Association*, August 28-31,2008, Boston, MA.
- Nordlinger, Eric A. 1972. *Conflict Regulation in Divided Societies*. Cambridge MA: Harvard University - Center for International Affairs.
- Roeder, Philip G. 2007. *Where Nation-States Come From: Institutional Change in the Age of Nationalism*. Princeton, Oxford: Princeton University Press.

- Saideman, Stephen M., David J. Lanoue, Michael Campenni and Samuel Stanton. 2002. Democratization, Political Institutions, and Ethnic Conflict. *Comparative Political Studies* 35(1):103–129.
- Sambanis, Nicholas. 2004. What is a civil war? *Journal of Conflict Resolution* 48(6):814–858.
- Sambanis, Nicholas and Branko Milanovic. 2005. “Explaining the demand for sovereignty”. *Working paper*.
- Sisk, Timothy D. 1996. *Power Sharing and International Mediation in Ethnic Conflicts*. New York: Carnegie Corporation of New York.
- Snyder, Jack. 2000. *From Voting To Violence: Democratization and Nationalist Conflict*. New York: Norton.
- Stepan, Alfred. 2001. *Arguing Comparative Politics*. Oxford: Oxford University Press.
- Tilly, Charles. 1978. *From Mobilization to Revolution*. Reading, MA: Addison-Wesley.
- Treisman, Daniel. 1997. Russia’s “Ethnic Revival”: The Separatist Activism fo Regional Leaders in a Postcommunist Order. *World Politics* 41:212–249.
- Treisman, Daniel. 2007. *The Architecture of Government*. New York: Cambridge University Press.