

It's Complicated:
A Complexity-Oriented Approach to the Study of Violent Ethnic Conflict

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ABSTRACT

Existing research on the causes of ethnic conflict is characterized by an enduring debate on whether these conflicts are the result of deeply felt grievances, or rather the product of an opportunity structure in which rebellion is an attractive and/or viable option. In this article I argue that the question whether incentive- or opportunity-based explanations of conflict have more explanatory power is fundamentally misguided, and conflict more likely the result of a complex interaction of incentives and opportunities. Fact is, however, that we do not know much about how they interact. This study fills this gap and applies Qualitative Comparative Analysis (QCA) in order to identify constellations of explanatory factors that are particularly conducive to ethnic conflict. I show that with merely four theoretically well-anchored causal constellations we can quite reliably explain more than half of all ethnic conflict onsets between 1990 and 2009. The results demonstrate the importance of more complexity-oriented approaches to the study of ethnic conflict, which in turn implies that novel methodological approaches need to be explored that are suitable to deal with variable constellations and interactions.

1 Introduction

Do people rebel because they want to, or because they can? The somewhat provocative question whether conflicts are really the result of deeply felt grievances, or rather the product of an environment in which rebellion is an attractive and/or viable option has divided scholars of intra-state conflict for decades. The debate was reignited more recently by Collier and Hoeffler (2004) who claimed that rebellion cannot be explained by grievances resulting from ethnic animosities and economic and political inequalities, because situations in which people want to rebel are ubiquitous. Opportunity structures (weak states, remote terrain, etc.) in which people are able to rebel, on the other hand, are sufficiently rare to constitute the explanation.

In this article on the causes of ethnic conflict, I argue that the question whether incentive- or opportunity-based explanations of conflict have more explanatory power is misguided altogether, because conflict is likely the result of both. This argument is not entirely new. Reflecting a growing unease with the either-or framing of the debate so far, it is now in vogue to state that conflict is the result of a complex interaction of incentives and opportunities (Ballentine & Sherman, 2003: 6, Korf, 2005: 201-202, Østby, 2008: 145, Sambanis, 2005: 329). Yet, apart from this basic finding, we have little systematic knowledge about how they interact. What fell by the wayside in the competition of rival explanations for conflict is a theory of the interplay between important explanatory factors.

In order to fill this gap, I abandon the idea of incentive and opportunity variables being adversaries in the race for the greatest explanatory power. The question I examine instead is which specific constellations of explanatory factors are particularly conducive to the outbreak of violent ethnic conflict. In order to answer this question, I analyze global data on almost 500 five-year periods of ethnic conflict onset and non-onset on the level of ethnic groups. In order to identify recurring causal patterns and build a configurational model of ethnic conflict, I apply crisp-set Qualitative Comparative Analysis (QCA), a method whose potential has largely remained untapped in research on conflict onset.

The results justify this novel approach. The most striking finding is that it takes no more than four causal patterns to explain more than half of all ethnic conflict onsets between 1990 and 2009. Using some of the field's well-known catchphrases I label them „conflict trap,“ „bad neighborhood,“ „ousted rulers,“ and „resource curse.“ The combinations of explanatory factors in these four patterns — discussed in detail in Chapter 5 — are quasi-sufficient for conflict, i.e., they lead to conflict in more than 80% of all cases. From a theoretical perspective, the results are in line with the importance accorded to the risk from previous conflict, neighborhood effects, political exclusion, or natural resources in the recent

scholarship on conflict onset. What this study demonstrates powerfully, however, is the explanatory leverage we can gain if we take different combinations of risk factors into account.

The remainder of this article proceeds as follows. I first recapitulate the debate on incentive- and opportunity-oriented explanations of conflict before I describe my own analytical framework and introduce the variables examined. The next section details the method of analysis and measurement of the variables. I then briefly present the results before offering a more substantial, pattern- and case-oriented interpretation. I conclude by discussing the implications of the findings for research and policy.

2 Incentives, opportunities, and conflict

In this section, I briefly illustrate that the question of the relative importance of incentive and opportunity factors in explaining conflict lies at the heart of several scholarly debates in ethnic conflict and civil war research. I then justify and outline the analytical framework adopted in order to overcome the dichotomy in favor of an approach that is rooted in the assumption of causal complexity.

2.1 The debate(s)

In the past three decades, ethnic conflict has become the prevalent type of civil war (Fearon & Laitin, 2011: 199). Reflecting the world's shock and outrage at the slaughtering of innocent men, women, and children in Bosnia, Rwanda, and elsewhere, these conflicts have drawn and continue to draw enormous scholarly interest. Given the brutality and seeming irrationality of these conflicts, many of which erupted as empires crumbled after the Cold War, one explanation that resonated well with the public and with policy-makers was the "ancient hatreds" thesis (Kaplan, 1993). In this view, "natural" or at least age-old animosities between ethnic groups had simply been oppressed by the regimes under which these groups lived, and exploded as soon as the lid of authoritarianism was lifted. In complete disagreement with this argument, scholars like Snyder (2000) or Gagnon (2004) emphasized that ethnic identities are neither naturally given nor per se valuable to people, but are instead purposefully (re)created and provoked by extremist leaders who try to come to — or hold on to — power. Ethnic conflict in this view does not necessarily happen when the grievances of the masses are strongest, but when self-serving elites perceive a window of opportunity for power or economic gain.

Roughly a decade later, a very similar argument — but this time concerning the causal role of economic inequality — was at the heart of the so-called "greed-grievance" debate. In their famous article, Collier and Hoeffler (2004) portrayed rebel leaders as conflict entrepreneurs who employ a discourse of popular grievances to justify their violent strategy that merely serves one purpose: to profit from the war by

looting or eventually controlling the resources of the state. They did not deny that mass grievances may exist, but claimed that what motivates the rebels is “substantially disconnected from the large social concerns of inequality, political rights, and ethnic or religious identity” (2004: 589). Along similar lines, Fearon and Laitin (2003: 4) argued that ethnic antagonisms and economic grievances “fail to postdict civil war onset,” while their measures of conditions that favor insurgency (like rough terrain or weak states) did fairly well. These claims were a challenge to the view of many conflict analysts, but under the impression of paradigmatic “greedy wars” in places such as Liberia, Sierra Leone, or the Democratic Republic of the Congo, the argument received broad attention both in public and in academia.

The two (stylized) debates above are but two manifestations of a controversy that on a meta-level has run through ethnic conflict and civil war research like a red thread: the incentive-opportunity debate. Ever since the exchanges in the 1970s between relative deprivation theorists (Gurr, 1970, Davies, 1962) and the resource mobilization school (Snyder & Tilly, 1972, Tilly, 1978), the controversy circles around the question whether conflict is best understood by looking at the *incentives* for collective action, or the *opportunity structure* that makes collective action by ethnic groups possible *and* that shape a group’s decision to choose violent over non-violent strategies. Though the greed-grievance controversy is merely its recent manifestation, the morally charged phrasing in terms of “greed” and “grievance” has certainly contributed to the unease with the either-or framing of the debate (Korf, 2005: 201-202). Increasingly, scholars claim that conflict is more likely the result of a complex interaction of both incentives and opportunities (Ballentine & Sherman, 2003: 6, Østby, 2008: 145, Sambanis, 2005: 329). Existing research, however, has not systematically explored these interactions, at least not in a comparative manner. The majority of scholars focused on the relative importance of their key explanatory variables vis-à-vis others, and were quite unconcerned about the nature of the causal relationship between them. There is evidence, however, that the assumption of independent, additive effects that underlies those models may not be an appropriate mirror of the causal relationships at work in triggering ethnic conflict. Case studies usually highlight the complex interplay of risk factors in leading up to conflict. But even the occasional interaction terms tested in quantitative models of conflict (for example in Østby, 2009, Østby et al., 2011, Brown, 2009) portray a picture of causal relationships in which the presence or absence of one risk factor affects the effect of another factor on the outcome (Braumoeller, 2003: 4). Spurred by this evidence of complexity, this study undertakes a more systematic analysis of such interactions.

2.2 Taking complexity seriously: Analytical framework and explanatory factors

The general argument within the configurational approach adopted in this study is that both incentives and opportunities are necessary for a conflict to start, because it seems common sense that a group has

to be both willing and able to rebel. This argument should be seen as an ontological assumption rather than an empirically testable hypothesis. As an ontology, it governs the adequate specification of the causal model, as well as the choice of methods to deal with complexity (see Hall, 2003, for a brilliant peace on “aligning ontology and methodology”). Empirically, it cannot be tested, lest we can claim that we know all possible incentives and opportunities for rebellion and have included them in our models. To complicate things, the distinction between incentives and opportunities is far from clear-cut. For many variables commonly found to have an influence on conflict onset, it is not clear whether they do so via an incentive or an opportunity mechanism or both (for an example of this problem in the context of natural resources and conflict, see Humphreys, 2005). Gurr (2000: 70) goes beyond the incentive-opportunity binary and offers a more multifaceted categorization of explanatory factors. He distinguishes between factors that influence the *salience* of ethnic identity to start with, factors that offer *incentives* for action, ethnic groups’ own *capacity* for action, *domestic opportunities* for rebellion, and finally, *international sources of support* for ethnic groups’ collective action.

In order have these different explanatory categories represented in the configurational model, the variables tested include explanatory factors from within all Gurr’s categories, but also some “typical” incentive and opportunity variables. Within this framework, I selected 11 variables for the analysis due to their theoretical and empirical importance in the ethnic conflict and civil war literatures. Table 1 lists all the variables, including their spatial and temporal character and their (meta)-theoretical status.

Table 1. Examined variables

Variable name	Spatial character	Temporal character	Possible causal mechanism(s) / theoretical status
Politically excluded	group-level	rather static	Incentive
Ousted from rule	group-level	dynamic	Incentive
Ruling group	group-level	rather static	Absence of incentive
Oil and gas	group-level	static	Incentive, opportunity, feasibility
Previous conflict	group-level	dynamic	Incentive, capacity (previous organization), opportunity (conflict-specific capital), salience of identity
Tiny group	group-level	static	Reduces group capacity for collective action
Territorially concentrated	group-level	static	Strengthens group capacity for collective action
Regime change	country-level	dynamic	Domestic opportunity
Extreme state poverty	country-level	rather static	Incentive, domestic opportunity (state weakness, opportunity costs)
Neighboring ethnic kin	group-level	static	Opportunity (e.g., refuge), international support
Kin in conflict	group-level	dynamic	Opportunity (conflict-specific capital across the border, refuge), international support, contagion

The *political exclusion* of an ethnic group from national-level decision-making is a typical incentive variable and has received much attention and empirical support within research on horizontal inequalities and conflict (Cederman, Wimmer & Min, 2010, Brown, 2009). Groups who have no say in government are lacking an important means to redress grievances and may not consider “the state” to be their legitimate representative. Exclusion is even more explosive if a group is *ousted from a position of power* it once held (Cederman, Wimmer & Min, 2010). Besides these two unambiguous incentive conditions, the condition *ruling group* was included to control for the fact that the group who holds most power in a state may not have an incentive to rebel at all, no matter how many other risk factors are present at the same time. Unfortunately, no high-quality data was available on economic inequalities at the level of ethnic groups, hence this incentive has to remain unaccounted for in this study.¹

The strong academic interest in the link between natural resources and conflict (Collier & Hoeffler, 2004, Ross, 2004, Humphreys, 2005, Lujala, Rod & Thieme, 2007) warrants the inclusion of the condition *oil or gas*, despite the above-mentioned ambiguousness with regard to its exact causal effect. Oil or gas reserves in an ethnic group’s settlement area may be a source of grievances if people feel that they do not profit from their own resources while facing the negative externalities of the extraction process (Humphreys, 2005: 512, Tadjoeeddin, Suharyo & Mishra, 2001: 292). They could also offer an opportunity to finance a rebellion through looting or extortion (Collier & Hoeffler, 2004: 588,565), or make secession an attractive and seemingly viable option (Humphreys, 2005: 511).

Previous conflict is a variable that is almost always included in quantitative models of conflict onset —if only to control for the temporal dependence of observations (Beck, Katz & Tucker, 1998) — but it is again not entirely clear how it facilitates renewed onset. Previous conflict may have caused hurt, loss, and feelings of revenge, thus contributing to the incentives for renewed conflict; it may have hardened ethnic identity to a point at which conflict resolution becomes difficult (Kaufmann, 1996: 137); or it may have left a legacy of weapons and trained rebels that facilitate the renewed organization and conduct of a rebellion (Collier & Hoeffler, 2004, Walter, 2004).

Group size and *territorial concentration* were included because they are typical for what Gurr (2000: 70) calls group capacity variables. Group size influences the resources a group can mobilize (Cederman, Wimmer & Min, 2010: 96), and tiny groups may simply not be able to gather enough financial and personal resources to violently challenge the state. The situation is similar with territorial concentration. Dispersed groups, such as the Roma minorities all over Eastern Europe, face coordination problems in

organizing collective action, while territorial concentration positively influences a group's capacity for mobilization – a typical opportunity attribute (Weidmann, 2009).

Regime change and *extreme state poverty* are included because they are two key aspects of state strength — a typical opportunity concept. Regime change as a temporary weakness signals to potential rebels that there is a window of opportunity, a vulnerability of the state to be exploited (Fearon & Laitin, 2003: 16). Extreme state poverty in terms of GDP per capita is both a cause and a result of bad administrative quality and weak state institutions, and reflects a chronic weakness of the state (Hendrix, 2010). Note that there are alternative mechanisms by which poverty could lead to conflict, such as being an incentive in itself, or via an opportunity cost mechanism: If income from regular employment is absent or low, joining an army may be a better option to make a living (Collier & Hoeffler, 2004: 569). In any case, GDP is among the most robust predictors of civil war onset (Hegre & Sambanis, 2006).

The last two factors — *having ethnic kin* in a neighboring state, and having *neighboring kin that are in conflict* — are included to account for the international dimensions of “internal” conflict that have only recently received more scholarly attention, at least within the quantitative literature (Gleditsch, 2007). While there are various ways in which the neighborhood can influence the chance of war in another country, there is evidence that links stemming from transnational ethnic groups are particularly important (Cederman, Girardin & Gleditsch, 2009: 409, Buhaug & Gleditsch, 2008). Such groups may provide safe havens for rebels, and —especially if they are in a conflict themselves — support their kin across the border with weapons, finances, fighters, and even rebel leaders (Salehyan, 2009).

After this deductive selection of explanatory factors, the study takes on a distinctly inductive character. A process of explorative pattern-finding — explained in the following section — is employed in order to identify the constellations of those variables that are particularly conducive to the outbreak of conflict.

3 Method of analysis and research design

This section details the method of analysis and the data used to measure the outcome and conditions tested in this study.

3.1 Qualitative Comparative Analysis (QCA)

This study employs crisp-set Qualitative Comparative Analysis (QCA) to identify multiple configurations of variables that are sufficient for ethnic conflict. QCA was developed by Charles Ragin (2000, 2008) as a method to permit valid generalizations on causal relationships even with small to intermediate case numbers. In this study, however, the choice of QCA is not guided by the number of cases available for

study, which is sufficient for using standard statistical techniques. Instead, QCA is applied because it can handle two aspects of causal complexity that are of core theoretical interest here: Conjunctural causation, and equifinality. Conjunctural causation is a situation in which the effect of an explanatory factor depends on the presence or absence of other variables (Braumoeller, 2003: 4). Equifinality refers to the fact that there may be multiple paths to the same outcome, i.e., that conflict may be the result of several different possible configurations of explanatory factors. While there are efforts to incorporate individual aspects of causal complexity into more conventional statistical methods (see Schneider & Wagemann, 2012: 88), most of these attempts can handle just one aspect of causal complexity at a time.

QCA starts from an assumption of maximum complexity and lists *all* possible combinations of the variables examined in a so-called truth table, allowing the analyst to select those configurations that are sufficient for the outcome. A configuration is sufficient if all cases that exhibit it also have the outcome. Given the large number of cases, this study uses QCA in a probabilistic manner, looking for quasi-sufficient rather than fully sufficient causal combinations (Ragin, 2000: 109-115). QCA uses the Quine-McCluskey algorithm and discards all redundant information from the list of quasi-sufficient configurations (Schneider & Wagemann, 2012: 104). The result is a logically minimized solution, or in other words, causal complexity reduced to its most simple, valid expression. Given that the outcome studied in this paper — conflict onset — is conventionally used in a dichotomous manner, only the crisp-set variant of QCA is available. Although this requires the dichotomization of *all* variables — with any disadvantages that may entail (for a discussion, see De Meur, Rihoux & Yamasaki, 2009: 148-152) — this project partially compensates a lack of information on differences *within* variables with information about the interplay of many variables, something logistic regression permits to a very limited extent.²

3.2 Outcome and sample population

The outcome to be explained in this study is why some politically relevant ethnic groups experience the onset of ethnic conflict within a five-year period, while others do not. I use the *onset_do_flag* variable downloaded from the GROW^{up} data portal to identify ethnic conflict onsets (Wucherpfennig et al., 2012, Cederman, Wimmer & Min, 2010, Cunningham, Gleditsch & Salehyan, 2009, Gleditsch et al., 2002).³ An ethnic conflict is a conflict in which at least one rebel organization in an internal conflict (as defined by UCDP/PRIO, 2011: 9) explicitly or implicitly claims to represent this group in the conflict *AND* predominantly recruits fighters from the respective ethnic group (Hunziker, 2011). In order not to overstretch the historical context, the analysis is limited to the time since the end of the Cold War, i.e., 1990-2009. A 3-year rule was applied to collapse renewed episodes of the same conflict that are within 3

years of the last onset into one single onset, assuming that a mere reduction in battle deaths for a few years does not mean that a conflict has ended in between.

With these rules, the data contains 78 onsets of ethnic conflict between 1990 and 2009.⁴ By analyzing five-year-periods instead of years, this study deviates from the common practice in research on conflict onset. This accounts for the fact that conflict may not start in the exact year when a condition changes (political exclusion, for example), but a few years after that. Also, there is no methodological need in this study to inflate the dataset by increasing the number of observations. Quite on the contrary: In order to optimize the trade-off between collecting data on more interesting variables rather than more observations, I followed an advice by King and Zeng (2001) to improve the explanation of rare events by sampling among non-events. I drew a random sample of just below 400 non-onsets for this purpose, yielding a dataset of 469 observations.

3.3 Measuring the explanatory conditions

The following paragraphs detail the measurement of the explanatory conditions, summarized in Table 2. *Political exclusion (polx)* is measured with the *StatusID* variable from the EPR-ETH dataset (Cederman, Wimmer & Min, 2010) and takes on the value 1 if an ethnic groups is completely excluded from central executive power (but not necessarily from regional or local government).⁵ While most ethnic groups retain their political status over long periods of time, the value coded in a period indicates whether a group was included or excluded in the majority of period-years. A group was considered ousted from rule (oust) if it was excluded from central executive power in the course of a period.⁶ Groups who retained their status as senior partners in government (*statusid*=3) during all years of a period were considered to be the ruling group (ruler).

The condition *territorially concentrated (conc)* is also taken from the EPR-ETH dataset and takes on the value 1 if a group has a defined settlement pattern in the geo-coded version of the dataset (GeoEPR-ETH) rather than being dispersed, migrant, or predominantly urban. The condition *petrol* measures whether there is at least one giant oil or gas field in a group's settlement area. It was obtained by combining GeoEPR-ETH data on groups' settlement areas with a georeferenced petroleum dataset by Lujala, Rod, and Thieme (2007).⁷ *Previous conflict (precon)* indicates whether a group already had an ethnic conflict as defined above within the past ten years, counted back from the first year of a group-period.⁸ The condition tiny group (*tiny*) was coded 1 if a group makes up less than 1% of the total country population AND has an absolute group population of less than 1 Mio. people. Information on the relative group size

is available in the EPR-ETH *GroupSize* variable (Cederman, Wimmer & Min, 2010), whereas information on the total country population was taken from the CIA World Factbook (CIA, 2013a).

On the country level, the condition *regime instability (instab)* denotes whether there was a substantial shift from democracy to autocracy or the other way within a group-period, as measured in the *Polity* and *Durable* variables of the Polity IV dataset (Marshall, Jaggers & Gurr, 2011).⁹ *Extreme state poverty (xpoor)* indicates whether a country is among the lowest 10% of all countries with regard to real per capita GDP, with GDP data from the Penn World Tables' *rgdpch* variable (Heston, Summers & Aten, 2011), extrapolated for missing years using World Bank growth rates (World Bank, 2013).

Data on transnational ethnic kin (TEK) was kindly shared by the International Conflict Research group at ETH Zurich (2011). The condition *havtek* is coded 1 if an ethnic group has a kin group in a country that is connected to its host country by a land border as listed in the CIA World Factbook (CIA, 2013b). The condition *tekcon* is coded 1 if such a group has an ongoing ethnic conflict in any year of the group-period *and* if the settlement areas of the two groups are adjoining (assessed visually on the GROW^{up} map).

Table 2. Explanatory conditions and their measurement

Variable	Label	Operationalization
Politically excluded	polx	1 = EPR status is 5 (regional autonomy), 6 (separatist autonomy), 7 (powerless) or 8 (discriminated) in the majority of period-years (excluding the onset year)
Ousted from rule	oust	1 = group was downgraded from central government rule (EPR status 1-4) to excluded (EPR 5-8) in the course of the period
Ruling group	ruler	1 = EPR group status is 3 (senior partner) in all years of the period
Oil and gas in group territory	petrol	1 = there is at least one oil or gas field with more than 500 million recoverable barrels of oil equivalent in group territory (zero for groups with no set area)
Previous conflict	precon	1 = There are less than ten years between the end of a group-period and the end of the last ethnic conflict of that group
Tiny group	tiny	1 = Relative group size is less than 1% of country population AND absolute group size is less than 1 Mio.
Territorially concentrated	conc	1 = Group has a defined settlement pattern in the GeoEPR-ETH dataset (as opposed to dispersed, migrant, or predominantly urban groups)
Regime instability	instab	1 = Substantive change in authority characteristics (defined as a 3-point change in the POLITY score) in a period
Extreme state poverty	xpoor	1 = GDP (real GDP per capita) of the country a group lives in is in the lowest 10 percentiles of all countries in the first year of a group-period
Neighboring TEK	havtek	1 = Has TEK in a country connected to the host country by land borders
TEK in conflict	tekcon	1 = TEK with adjoining territory experiences ethnic conflict in a period (for shorter periods: in the five years before the end of a period)

4 Results

This section presents the results of the comparative analysis.

4.1 Descriptive analysis and necessity test

Although the interest in this study is not in the independent effects of individual variables, a brief look at the distribution of the conditions in the sample is nevertheless enlightening. The second and third columns in Table 3 list, for all explanatory conditions, the absolute and relative frequency with which the observations exhibit a condition or not. The fourth column indicates how many of the total 78 onset cases have the condition, while the last column reports the consistency score for single variable sufficiency, although single sufficient conditions are very rare in any field of study.

Table 3. Distribution and consistency (sufficiency) of single explanatory conditions (n=469)

Condition	1 (present)	0 (absent)	No. Onsets (n=78)	Consistency
polx	310 (66%)	159 (34%)	57	0.184
oust	14 (3%)	455 (97%)	7	0.500
ruler	38 (9%)	431 (91%)	3	0.079
petrol	45 (10%)	424 (90%)	19	0.422
precon	36 (8%)	433 (92%)	25	0.694
tiny	71 (16%)	398 (84%)	4	0.056
conc	374 (79%)	95 (21%)	70	0.187
instab	138 (30%)	331 (70%)	37	0.268
xpoor	66 (15%)	403 (85%)	23	0.348
havtek	263 (56%)	206 (44%)	56	0.213
tekcon	30 (7%)	439 (93%)	16	0.533

The four figures in bold in the last column indicate that there are four conditions — being recently ousted from rule, having oil and gas resources, having had previous ethnic conflict in the past 10 years, and having ethnic kin in conflict — that have very high consistency scores. In the case of crisp-set QCA, these can be interpreted as conflict probabilities, meaning that there is an almost 70% chance of ethnic conflict recurring within ten years, or that half of all groups who have neighboring ethnic kin in conflict experience ethnic conflict as well. Even at those high scores, none of the individual conditions is sufficient for conflict, once again demonstrating the need to look at *configurations* of variables. Table 3 also shows that two conditions — being the ruling group and being a tiny group — come close to a necessary condition for conflict in their *absence*, i.e., when they are present conflict is unlikely to happen. Only three groups started a rebellion while they were involved in central government as senior partners, and only two groups managed to stage a rebellion despite their small size. However, the separate necessity test run in the fsQCA software (Ragin, Drass & Davey, 2006) confirms that there are

no *fully* necessary conditions for ethnic conflict among the conditions tested, and even \sim ruler and \sim tiny (the tilde denotes the absence of a condition) are trivial necessary conditions: Their presence is so rare that their function as a conflict inhibiting factor will rarely get into play (Schneider & Wagemann, 2012: 233-237, Ragin, 2008: 60).¹⁰ The third interesting fact in Table 3 is what authors like Collier and Hoeffler (2004) or Fearon and Laitin (2003) meant when they talked about the ubiquity of grievances (and hence, their limited use in predicting conflict): Two thirds of all ethnic groups in the sample were politically excluded, yet only 18% of them experienced conflict. However, the same can be said for territorial concentration and having transnational ethnic kin in a neighboring country, the latter having received a lot of attention in recent research on ethnic conflict and civil war (Cederman, Girardin & Gleditsch, 2009, Salehyan, 2009). In the case of all three variables, they are not only common in the full sample, but even *more* common among conflict cases, indicating that it may be premature to dismiss them as important explanations for conflict. It is more probable that they are weak conditions individually, but constitute important parts of more complex causal patterns that lead to conflict. It is these patterns that are discussed in the next section.

4.2 Configurational models of ethnic conflict

This section reports the results of the sufficiency test performed in fsQCA, of which the goal was to identify configurations of conditions that are together sufficient to explain the onset of ethnic conflict. The full model for the sufficiency test is the following:

polx * oust * ruler * petrol * precon * tiny * conc * instab * xpoor * havtek * tekcon → onset

The multiplication sign (logical AND) indicates joint causation, and the arrow indicates sufficiency. The software reduces the complexity of this model and boils the solution down to the various combinations of these 11 conditions that are sufficient for conflict. As was to be expected, using all 11 conditions in one single model yields a highly complex, unwieldy solution that is impossible to interpret. Although it has a coverage of 0.615, which means that it can explain 61.5% of all conflicts with a good consistency of 0.89, it does so by identifying 18 different paths, some of which only explain one or two conflicts at a time. This is similar to a regression model with a high R^2 because it contains many variables, each of which explains very little by itself. Variables were subsequently dropped from this full model to find a model that was both parsimonious, i.e., had a limited number of paths that could explain a *group* of onsets each, and at the same time had acceptable consistency and coverage scores. While there is no minimum threshold for coverage, the agreed minimum standard for consistency in the QCA community

(as indicated, for example, in Ragin, 2008: 46) seems to be 0.80, meaning that the final model should be right in identifying sufficient paths to conflict in 80% of the cases it makes a statement about.

Consisting of only eight conditions, the model presented in Table 4 offers the best combination of consistency, coverage, and parsimony.¹¹ The solution consistency is 0.83, meaning that the statement that those four causal paths are sufficient for conflict is correct in 83% of the cases. With a coverage of 0.51 it explains more than half (40 out of 78) of all conflicts in an elegant solution of only four configurations.¹²

Table 4. Preferred solution (intermediate solution term)

	Solution/ configuration consistency	Solution coverage	Configuration raw coverage*	Configuration unique coverage*
Conditions:	ruler, polx, oust, petrol, precon, tiny, instab, tekcon			
	(frequency cutoff: 1.00 / consistency cutoff: 0.70) ¹³			
Model parameters:	0.83	0.51		
~tiny*precon*polx*~ruler	0.87		0.26	0.24
tekcon*instab*~tiny*~petrol*~ruler	0.77		0.13	0.13
instab*~tiny*oust*~polx*~ruler	0.83		0.06	0.06
~tekcon*instab*~tiny*petrol*polx*~ruler	0.86		0.08	0.06

* Raw coverage includes cases explained by more than one configuration, while unique coverage includes only cases exclusively covered by that configuration.

All four sufficient configurations contain the two conditions that come closest to being necessary conditions (~tiny, ~ruler). These need no substantial interpretation, but can be seen as preconditions for the other conditions to have their strong joint effect. To illustrate this, we can rewrite the model:

$$\sim\text{tiny} * \sim\text{ruler} \quad \text{AND} \quad \left\{ \begin{array}{l} \text{precon} * \text{polx} \\ \text{OR} \\ \text{tekcon} * \text{instab} * \sim\text{petrol} \\ \text{OR} \\ \text{oust} * \text{instab} * \sim\text{polx} \\ \text{OR} \\ \text{petrol} * \text{polx} * \text{instab} * \sim\text{tekcon} \end{array} \right.$$

Among non-tiny, non-ruling ethnic groups, there are four distinct combinations of risk factors that almost always lead to conflict. In the next section I offer a substantial theoretical discussion of these four paths, with reference to the cases they explain.

5 Discussion

Table 5 lists all the conflicts that are explained by either of the four configurations as well as the so-called consistency outliers, i.e., those cases that exhibited the same combination of conditions yet did not experience conflict. Appropriating some common catchphrases in conflict research, I labelled them “conflict trap,” “bad neighborhood,” “ousted rulers,” and “resource curse”. In the following, I analyze each one of them in turn.

5.1 Conflict trap

The first path to conflict (*precon*polx*) is via the recurrence of a previous conflict: If an ethnic group already had an ethnic conflict in the past ten years *and* is still politically excluded, conflict breaks out with 87% consistency. With a unique coverage of 0.24, this combination explains the highest number of conflicts covered by the total model (20 onsets). This finding is consistent with the central argument of a recent book on conflict recurrence by Call (2012: 4), who argues that political exclusion is the crucial variable in explaining most cases of civil war recurrence. It also corroborates Walter’s (2004: 372, 385) finding that besides the improvement of basic living conditions (for which I do not account in this study), access to central political decision-making significantly decreases the risk of conflict recurrence. The result as such cannot answer the question whether the high risk of renewed conflict is due to a grievance or an opportunity effect of the previous conflict. What it shows, however, is that the combination of a clear *current* grievance (political exclusion) with a situation in which a previous conflict may have left both emotional scars and a legacy of conflict-specific capital is a ticking bomb. The importance of political inclusion after conflict may be particularly pronounced in the context of ethnic conflicts, during which identities tend to be hardened as a result of violence and ethnonationalist agitation (Kaufmann, 1996: 137, Gurr, 2000). Any political solution short of separation — which Kaufmann (1996) sees as the only remedy against renewed conflict and ethnic cleansing — requires at least *some* participation in central decision-making by the respective ethnic groups.

The conflict(s) between the Georgian state and the South Ossetian break-away region are a typical example. The first conflict in 1992, in which South Ossetia demanded independence from Georgia, ended in a ceasefire and the establishment of a peacekeeping force. However, a political solution to the conflict was never found. The South Ossetians never participated in the Georgian government again, and were seen by many as *de facto* independent. The conflict broke out anew in 2004 when President Saakashvili came to power with the aim to regain control over region, and again ended without a political solution and a precarious peace.

Table 5. Cases explained per configuration

Onsets explained by configuration	Outliers consistency (no onset)
Configuration 1: Conflict trap	
Catholics in Northern Ireland, UK (1994-98)	Basques in Spain (1997-2001)
South Ossetians in Georgia (2000-04; 2004-08)	Afar in Ethiopia (2000-04)
Armenians in Azerbaijan (1991; 2001-05)	Papua in Indonesia (1990-94)
Hutu in Rwanda (2005-09)	
Somali (Ogaden) in Ethiopia (1990-94)	
Bakongo in Angola (1998-2002)	
Cabindan Mayombe in Angola (1998-2002)	
Kurds in Iran (2001-05)	
Kurds in Iraq (2000-04)	
Palestinian Arabs in Israel (1996-2000)	
Bodo in India (2005-09)	
Naga in India (2001-05)	
Mohajirs in Pakistan (1991-95)	
Mons in Myanmar (1992-96)	
Muslim Arakanese in Myanmar (1987-91)	
Shan in Myanmar (1989-93)	
Achinese in Indonesia (1995-99)*	
East Timorese in Indonesia (1993-97)	
Configuration 2: Bad neighborhood	
Serbs in Croatia (1991-92)	Croats in Slovenia (1991-95)
Serbs in Bosnia and Herzegovina (1992)	Banyarwanda in Uganda (1990-94)
Croats in Bosnia (1992-93)	Baloch in Afghanistan (2004-08)
Tuareg in Niger (1987-91)	
Bakongo in the DRC (2003-07)	
Tutsi-Banyamulenge in the DRC (1992-96)	
Hutu in Rwanda (1993-97)	
Afar in Djibouti (1995-99)	
Afar in Ethiopia (1992-96)	
Baloch in Iran (2002-06)	
Configuration 3: Ousted rulers	
Lari/Bakongo in Congo (1994-98)	Russians in Kazakhstan (1991-95)
Sunni Arabs in Iraq (2000-04)	
Tajiks in Afghanistan (1992-96)	
Uzbeks in Afghanistan (1992-96)	
Mohajirs in Pakistan (1986-90)	
Configuration 4: Resource curse	
Azeri in Russia (1986-90)	Indigenous peoples of the Amazon in Peru (1993-97)
Chechens in Russia (1991-94)	
Bakongo in Angola (1987-91)	
Cabindan Mayombe in Angola (1987-91)	
Pashtuns in Afghanistan (1991-95)	
Achinese in Indonesia (1995-99)*	

* This case is not uniquely covered by that specific configuration, i.e., two configurations (1 and 4) explain this case.

The third conflict in 2008, in which Russia sided with South Ossetia in expelling the Georgian army, was brief but very violent, and ended in another political deadlock (UCDP, 2013, International Crisis Group (ICG), 2010). Only three ethnic groups in my sample — the Basques in Spain (1997-2001), the Afar in Ethiopia (2000-04) and the Papua in Indonesia (1990-94) did not see conflict reoccur in the time period studied. The conflict in West Papua in Indonesia, of course, has never been fully terminated, and sporadic attacks on police and military occur (UCDP, 2013), such as the most recent incident in which eight soldiers were shot dead in two separate attacks by armed men in the Papua province (BBC, 2013). Neither have the Basques in Spain and the Afar in Ethiopia completely given up their demands for self-determination, but in both cases, the conflicts remained largely inactive or continued with very low-intensity and sporadic violence.

5.2 Bad neighborhood

The second quasi-sufficient configuration (tekcon*instab*~petrol) can be summarized as a situation of instability both at home and in the neighborhood. Ethnic groups who have warring ethnic kin across the border are likely (consistency 0.77) to rebel themselves *if* the government at home is at the same time vulnerable because of regime change. With a coverage of 0.13, this configuration explains explains 10 onsets in my sample. Although the solution term limits this effect to groups without oil and gas resources (~petrol), this restriction neither makes much sense theoretically, nor is it warranted empirically.¹⁴ A quick check reveals that of the four ethnic groups with the same conditions *and* oil and gas, three experience conflict (the Kurds in Iran 2005, the Kurds in Iraq 2004, and the Uzbeks in Tajikistan 1998). It is thus independent of oil and gas reserves that the temporal coincidence of instability at home and ethnic kin in conflict in the immediate neighborhood put ethnic groups at a high risk of conflict. This finding is fully in line with recent research that has demonstrated an increased risk both for neighbors of a country in conflict (Buhaug & Gleditsch, 2008, Gleditsch, 2007), and for ethnic groups who have kin groups across the border (Cederman, Girardin & Gleditsch, 2009, Salehyan, 2009). The fact that this condition is not equally dangerous for stable governments supports Buhaug and Gleditsch (2008: 230) who find that the risk of conflicts spilling over is the highest when the “host” state already has a high baseline risk for conflict due to domestic characteristics. Weak states (and in times of regime transition, a state may be temporarily weakened) are not equally capable of controlling their borders and preventing the spillover of weapons or rebels from neighboring conflicts (Salehyan, 2009: 8,27).

Typical for this configuration is the rebellion by the Tutsi-Banyamulenge in the Democratic Republic of the Congo. The genocide and subsequent change in power relations in neighboring Rwanda had a tremendous impact on a country that had at least in the most affected Eastern (Kivu) part already

descended into something like anarchy at the beginning of the 1990s (Rafti, 2006), and in which president Mobutu lost crucial support by his Western allies by 1996 (Ndikumana & Kisangani, 2005: 75). The exceptions in my sample are the Croats in newly-independent Slovenia (1991-95), the Banyarwanda in Uganda (1990-94), and the Baloch in Afghanistan (2004-08). The Croats in Slovenia are a very small group (roughly 36'000 people or 2% of the country's population) and are dispersed across Slovenia, making a concerted violent effort to improve their lot unlikely. The Banyarwanda in Uganda actually did fight; first (until 1986) in Yoweri Museveni's National Resistance Army (NRA), but that conflict is not considered ethnic in the dataset (Wucherpfennig et al., 2012); later they came to constitute the leadership of the Rwandan Patriotic Front overturning the regime in Rwanda, but that was not a rebellion against their own state (Bøås, 2004: 295-296). The Baloch in Afghanistan are a more interesting outlier: Their kin are involved in rebellions against the state both in Pakistan (since 2004) and in Iran (since 2006), and Southern Afghanistan has served as a safe haven to Baloch refugees and insurgents, yet there is no large-scale ethnic insurgency by Afghanistan's Baloch against their government.

5.3 Ousted rulers

The third configuration describes rebellions by groups who were recently excluded from central government power in a situation accompanied by regime change (oust*instab*~polx). Typical cases are the Sunni Arabs in Iraq in 2004, who lost the political advantages they enjoyed under Saddam Hussein's regime when he was ousted in a US-led invasion of Iraq, or the Tajiks and Uzbeks in Afghanistan who lost all political power when the Pashtun-dominated Taliban captured Kabul and took control of the national government in 1996.¹⁵ With a coverage of 0.06, this configuration explains five conflict onsets in my sample at a consistency of 0.83. The qualification that the groups should NOT be politically excluded (~polx) is only at first sight puzzling and partially an artefact of the coding rules: In order to be coded as politically excluded, an ethnic group had to be excluded in the majority of group years, i.e., three out of five years. For most ousted groups who rebelled, this was simply not the case because they rebelled within a year or maximum two of their exclusion. This itself is an important finding, especially for conflict prevention purposes, but less important for the sake of the theoretical argument made above.

Thinking of Syria, the question of what happens when a ruling group loses its privileges is acutely policy-relevant, but has often been ignored in the quantitative literature on civil war and ethnic conflict. One exception is a study by Cederman, Wimmer, and Min (2010: 104) who find that groups whose power status decreased during the previous two years are much more likely to rebel. Referring to sociological theories of emotions they argue that anger and resentment is especially strong after a group loses power and prestige, especially when these negative emotions can be directed at the ethnic group that is

considered guilty of the ousting. Gurr (2000: 108) also acknowledges that advantaged groups are at a special risk of being the target of reprisals and revenge once displaced from power (giving them an incentive to fight back), especially if they have been using their power to cater to their own interests. The outlier in this group are the Russians in Kazakhstan, who did not rebel despite the fact that by 1995, they were rendered politically powerless as ethnic Russians were removed from government positions and replaced with Kazakhs, and the requirement of proficiency in the Kazakh language de facto excluded Russians from jobs in the public sector (Minorities at Risk Project, 2009). The Russians in Kazakhstan are but one of those Russian diasporas that after the collapse of the Soviet Union suddenly found themselves a minority in a state led by another nationality, and of whom none started a violent rebellion in spite of frequent discrimination and powerlessness. At least in Kazakhstan, Peyrouse (2007: 481) attributes this to “the emigration of those who wanted to leave the country and a depoliticisation of those who preferred to stay or who had no choice.”

5.4 Resource curse

The fourth path to conflict is when oil-rich but politically excluded groups can make use of the window of opportunity offered by a regime change at the center (petrol*polx*instab*~tekcon). With a unique coverage of 0.06 this path explains five conflicts with a consistency of 0.86. Similar to the second configuration, the solution term contains the qualifier ~tekcon, meaning that this path is only sufficient for groups with *no* ethnic kin in conflict — a restriction that seems awkward and is not needed. The combination of exclusion, oil, and instability is sufficient for conflict, no matter whether ethnic kin are also rebelling or not. The finding supports the view that at the heart of ethnic conflicts is frequently a dispute about the control over natural resources (Haysom & Kane, 2009: 5). Oil and gas are relatively unlootable commodities and as such only offer a benefit to those who have direct control over it, i.e., the extraction firm and the government (Ross, 2003: 55-56). Groups who are politically excluded certainly have no direct control over those resources and develop the feeling that the wealth from their resources is siphoned away to those in power while they have to deal with the social and ecological externalities of the extraction process (Humphreys, 2005: 512, Tadjoeeddin, Suharyo & Mishra, 2001: 292). This grievance structure, however, is very common. It affects, among other groups, many indigenous communities in Latin America (such as the outlier in this group, the indigenous peoples of the Amazon region in Peru), who rarely rebel violently against the exploitation of their lands. It is only in the combination with political exclusion *and* political instability that oil and gas are sufficient for conflict.

The movement by the Bakongo and Cabindan Mayombe for the independence of the Angolan enclave Cabinda is a typical case: Cabinda accounts for more than half of Angola’s oil production, yet neither the

political power nor the economic welfare of the Bakongo and Cabindan Mayombe have been positively influenced by these riches (le Billon, 2001). At the same time, the presence of oil reserves may have influenced the strategic calculus of the potential rebels in Angola, fueling beliefs that “going it alone” could be feasible and the an independent Cabinda potentially prosperous (Humphreys, 2005: 511). Although the conflict in Cabinda may have been ongoing for several years before it officially reached the UCDP-threshold of 25 battle-related deaths in 1991, it is not surprising that the onset coincides with the end of the Cold War (during which Angola was the theatre of a proxy war between the power blocs) and the instability caused by the country’s transition to multi-party democracy.

6 Conclusion

In this article I have identified four variable constellations that are quasi-sufficient for ethnic conflict. It is, to my knowledge, one of the first studies that has systematically generalized about the complex causal patterns of conflict rather than the effect of individual conflict causes. The results lend legitimacy to this approach and the method used for that purpose, given that with merely four theoretically substantiated configurations we can reliably explain more than half of all conflicts between 1990 and 2009.

The general assumption was that conflict happens when incentives and opportunities coincide. Although this assumption was not to be empirically tested in this study, the fourth configuration (“resource curse”) is a textbook example of incentives and opportunities coinciding at a certain point in time to facilitate rebellion: The ethnic groups in question had a reason to rebel (grievances induced by political exclusion and possibly by the oil and gas reserves on their territory), and did so when a window of opportunity opened up through the political instability caused by regime change at the center. Neither the grievance factors(s) alone nor the fact that there was political instability would have been a sufficient explanation for conflict by themselves, once again supporting those who have emphasized the need to look at the interaction of incentives and opportunities in explaining a complex event like ethnic conflict.

The policy relevance of these findings lie in the reliability with which the causal patterns identified have led to conflict in this sample. It is a very powerful early warning tool to know that a specific combination of risk factors is usually sufficient for conflict. Equally important is the fact that QCA as a method delivers results that directly correspond to individual cases, permitting the scholar to offer policy advice that is both more targeted and more easily communicated. The problem with policy advice that flows from conventional statistical methods (such as regression analysis) is that it can only offer very general advice on average effects that are bound to apply to a heterogenous group of countries. From a policy perspective, however, it is less important to know which risk factors put countries generally and on

average at a higher risk, than to know which exact countries or groups are effectively at risk because they currently exhibit all the dangerous conditions in combination (Ragin, 2008: 181-182).

This confidence with which this study makes claims about the effect of *some* causal patterns comes at a price. This price is the fact that we can say nothing at all about the 38 conflict onsets not covered by the model.¹⁶ This lack of coverage is most likely due to omitted variables. Accordingly, future research should try to expand this configurational model of ethnic conflict and try to cover more conflicts not currently explained by the model. Some conditions completely excluded from this study because of data availability are, for example, economic grievances, or the of non-violent protests that might have initiated the escalation to violent conflict. In any case, this article clearly demonstrates the need for complexity-oriented approaches to the study of ethnic conflict, which in turn requires the scholarly community to explore new methodological avenues in order to deal with causal relationships that do not fit the standard regression template currently in use in the majority of quantitative conflict analyses.

7 References

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¹ There is an economic inequality measure available for EPR-ETH groups, but it has a number of shortcomings that deter me from using this data: Data is only available for spatially concentrated groups; the estimates for economic performance are influenced by local natural resources; and the data quality varies considerably across countries, understating inequality in countries with poor data coverage (Cederman, Weidmann & Gleditsch, 2011: 483).

² In regression models, interaction terms are usually limited to the interaction of no more than two variables.

³ Created by the International Conflict Research (ICR) group at ETH Zurich, GROWup (<http://growup.ethz.ch/pfe/>) unites a number of datasets on ethnic groups and internal conflict from various sources in a single relational database.

⁴ The ten onsets concerning the proclamation of the Caucasus Emirate in Russia in 2007 were recoded as one conflict (peoples of the Caucasus against the government of Russia), as the ten small ethnic groups are all represented by the same rebel group.

⁵ Following Cederman, Weidmann and Gleditsch (2011: 484), ethnic groups that have absolute political power (EPR status 1=monopoly and 2=dominant) were dropped from the dataset, because by definition they are the state and cannot rebel against it.

⁶ To avoid endogeneity, a qualitative check was performed to ensure that the group was ousted temporally before conflict onset, and not as a result of rebellion.

⁷ My gratitude to Philipp Hunziker from the ICR group at ETH Zurich, who kindly shared this combination of two datasets with me. Note that the Bakongo and Cabindan Mayombe in Angola were recoded from 0 to 1. Cabinda is clearly oil-rich, although Cabinda's oil fields are offshore fields and as such not directly in the territory of the group.

⁸ The Armenians in Azerbaijan (1991) are coded to have had a previous conflict even if their last conflict was in the country they were previously in (USSR), because it was about the same territory.

⁹ Again, given some endogeneity concerns with the Polity IV dataset in the context of civil war research (Vreeland, 2008), a qualitative check was performed to ensure that changes in the polity score were not a *result* of rebellion.

¹⁰ For the complete results of the necessity test, see Section 1 of the supplemental online appendix.

¹¹ See Section 4 of the supplemental online appendix for a discussion of some alternative models.

¹² Most QCA software packages, including fsQCA, report three different solutions (conservative, parsimonious, and intermediate), which differ with regard to the assumptions they allow about logical remainders, i.e., combinations of conditions for which no cases exist. Most scholars, including myself, prefer the the intermediate solution, which allows for the inclusion of easy counterfactuals (Schneider & Wagemann, 2012: 160-177, Ragin, 2008: 163-167). See Sections 2 and 3 of the online supplemental appendix for the report of all three solutions, as well as the assumptions that went into the intermediate solution.

¹³ The frequency cutoff is a bit lower than the 0.75 recommended in some of the key QCA textbooks (Ragin, 2008: 46, Schneider & Wagemann, 2012: 127). This seems justified given the large-N nature of this study and the fact that some of the problems connected to lower cut-off points apply only to fuzzy-set QCA, not to crisp-set QCA (Schneider & Wagemann, 2012: 238-244).

¹⁴ I am currently trying to find out how QCA produces such results at all, but to date, I have no explanation for this.

¹⁵ It is not clear how important the regime change condition is in this configuration, as only two groups were ousted in situations of regime stability/continuation, and both did not rebel (the Hungarians in Slovakia and the Luo in Kenya).

¹⁶ See Section 6 of the supplemental online appendix for a list of all conflict onsets not covered by the model.