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The Triangle of Ethnic Grievances, Regime Type and Secession

A fs/QCA analysis of conditions leading to the Yugoslavian Civil War

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Abstract: This thesis is an attempt to capture ethnic grievances in relations with regime type and secession. The unit of analysis is Yugoslavia on a regional level; Bosnia-Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Serbia, Slovenia and Vojvodina. Conditions within these units are traced by applying thorough case-studies and fs/QCA. The truth table solution provided by the fuzzy-sets analysis support that ethnic grievances can determine civil war when appearing together with anocracy as a regime type, and with secession. This would support a claim that studies of civil war and ethnicity should aim to capture the political context in which ethnic grievances appear rather than to base the research on measures of the size of the ethnic groups or degree of diversity.

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1.0 Introduction

Can ethnic grievances cause civil war? How can we be able to measure such a relationship? In this thesis I set out to capture ethnic grievances' effect on civil war onset by analyzing the dynamic relationship between ethnic competition, secession and regime type in the former Yugoslavia prior to the onset of civil war in 1991. I am concerned with how ethnic grievances only seem to affect civil war when appearing in a certain political context; where politics are ethnic related and regime types are inconsistent. For ethnic related politics, I mainly focus on secessionist policies and responses to them. The purpose is not to isolate one of the components, but rather to reveal how they interact. By exploring the interaction we can get clues on how war can be avoided even when conditions sufficient to produce it are present. It is a premise of this thesis that we can derive valuable information from the study of case-specific causations. Thus I study conditions within the federative units of Yugoslavia. In this selection of cases there is intricate diversity, ethnic tension, asymmetric distribution of power, claims for secession and regimes in transition. Still, war only broke out in some of the units. What separated these cases from those where war was absent? Hopefully, comparing the two outcomes 'war' and 'absence of war' can enrich our understanding of the causes of civil war[1].

1.1 Perceptions of the Sovereign

In Leviathan, Thomas Hobbes (2008[1652]) claimed that the three causes of quarrel among men were competition, diffidence and glory. "The first maketh men invade for gain; the second, for safety; and the third, for reputation" (Hobbes 2008[1652]: 83)[2]. To Hobbes, the state of war is a state of no assurance of the contrary: A state of no rules and thus no security. To end this state, individuals invest their total freedom in the legitimate rule of a sovereign. Hobbes could be interpreted as claiming that the sovereign's authority and legitimacy derives from its attribute as a security-provider. The sovereign is thus connected to the public through an agreement of protection. In The Social Contract, Rousseau (2004[1762]) tackles the security-guarantee in the state of nature through an analogy of family ties:

> *" (…) children remain tied to their father by nature only so long as they need him for their preservation. As soon as this need ends, the natural bond is dissolved. Once the children are freed from the obedience they owe their father, and the father is freed from his responsibilities towards them, both parties equally regain their independence. If they continue to remain united, it is no longer nature, but their own choice, which*

[1] '~' always indicates negation, '~War' is read 'the absence of the outcome War"
[2] Chapter XIII; §7.

unites them; and the family as such is kept in being only by agreement"
(Rousseau 2004[1762]: 2-3).

What if the two disagrees on the son's need for protection? Does the father demand his son's allegiance for the sake of keeping power, or to protect him for his own good? In international relations, this analogy could be translated into claims of secession and domestic grievances. When the agreement between family members dissolves, prematurely or not, there are different understandings of the secession's *legitimacy* and the status of the successor state relative to the security provider. There is a clash of *perceptions* of the sovereign. Studies should aim to reveal the causes of these clashes in order to avoid their outcomes to be fatal.

1.2 Research Question and Relevance

The purpose for this thesis is to discuss war as an outcome of ethnic grievances, secession and regime type. The units of observation are the federative units of Yugoslavia: Bosnia-Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Serbia, Slovenia and Vojvodina. I will explore the relationship between ethnic grievances, secessionist policies and regime type, and the impact of these factors on the civil war, 1991-1995[3]. By restricting the analysis to this period, I get a comprehensive selection of observable cases; eight federative units sharing the fate of Yugoslavia on the basis of shared events prior the onset of war. I pursue a dual research question: *Can civil war be a function of ethnic grievances, secession and regime type?* Secondary to this: *Would we be better able to capture this triangular relation by applying alternative research methods?* To pursue these questions, I conduct an analysis applying fs/QCA; combining 'within-case studies' with 'cross-case studies', with a focus on conditions producing either the outcome 'war' or the 'absence of war'[4] (Ragin 1987; 2000; 2008; Van der Maat 2011). In the following chapter, I argue against an overly aggregated approach to the study of civil war. To meet this methodological critique, I will measure the applicability of "aggregated models" to the case of the Yugoslavian civil war (Collier and Hoeffler 2004; Fearon and Laitin 2003; Hegre et al 2001).

The thesis is structured as follows: In *Chapter 2,* I introduce the theoretical framework and arguments. My focus is on ethnic grievances, the effect of regime types, and secession. When dealing with regime types, the focus is on their attributes' effect on political competition. When I deal with ethnic grievances, I focus on the fear of ethnic dominance and competing groups, rather than on diversity and fragmentation. In *Chapter 3,* I discuss the

[3] Thus, the thesis' appraisal restricts the discussion to deal with the first wave of secession and war in Yugoslavia, and leave out monumental events such as genocide in Kosovo, Albanian rebellion in Macedonia and the late sovereignty of Montenegro and Kosovo.
[4] The absence of war is referred to as' ~war'

methodology of comparative analyses, and give an introduction to fs/QCA and the applied research design. In *Chapter 4*, I present data conducted from the first stage of the analysis; the multiple case studies, or the 'within-case analysis'. In *Chapter 5*, I first conduct an analysis to reduce the raw data and locate the most important conditions. These are pursued in the more specified fuzzy-set analysis. Then I produce a truth table solution to 'war' and the '~war' in Yugoslavia, 1991. Also, I test the applicability of the models of Collier and Hoeffler (2004), Fearon and Laitin (2003) and Hegre et al (2001). In *Chapter 6*, I conclude from the analysis and evaluate the support for my theoretical propositions.

My conclusion is that the effect of ethnic grievances relies on the regime type and political propositions the grievances appear with. I do not argue that ethnic grievances are a constant factor in diverse societies, but that they appear and disappear with variations in the political context. I thus argue that research should aim to capture the political context in diverse societies in order to properly measure the effect of ethnic grievances. Figure 1.1 attempts to illustrate this. I recognize the critical aspect of generalizing from a small selection and this aspect of fs/QCA is not emphasized. I would rather emphasize how alternative methodological approaches might be beneficial in capturing the effect of an abstract condition as "ethnic grievances", and that my analyses support this proposition.

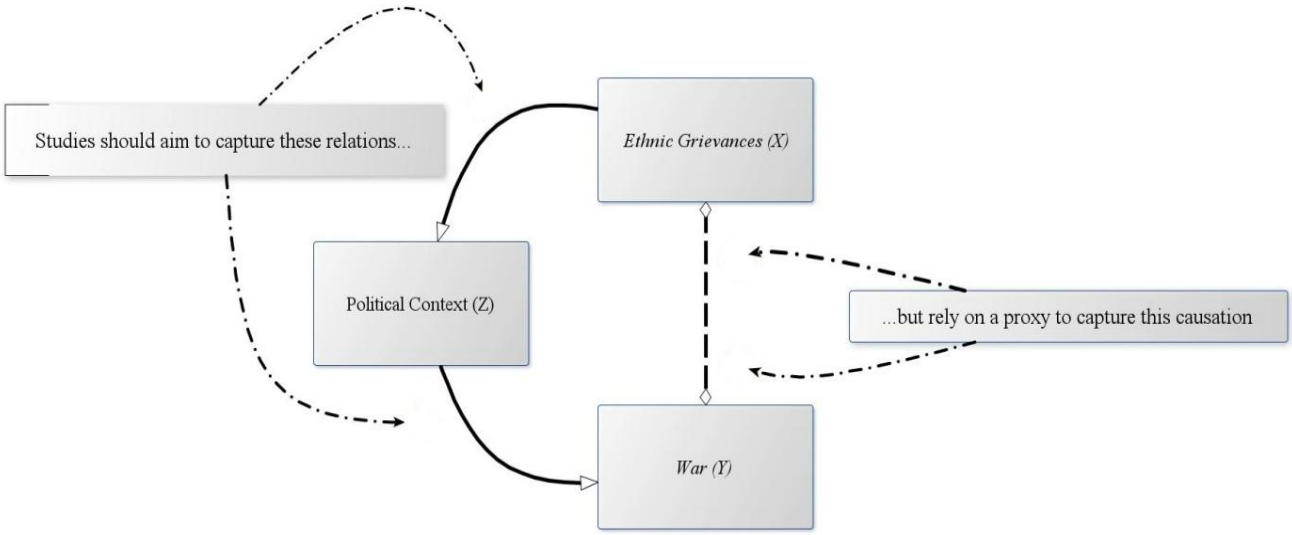

Figure 1.1 Studies should aim to capture the relations between conditions

2.0 Theory: Ethnic Grievances, Regime Types and Secession

In this chapter I present the theoretical framework. It is concerned with ethnic grievances, secession policies and regime types, and how this triangle affect civil war onset. I start by defining civil war and discuss certain approaches to its study. Then I deal with ethnic grievances and secession before I discuss these two components in terms of regime type. The causations I suggest are illustrated by Figure 2.1.

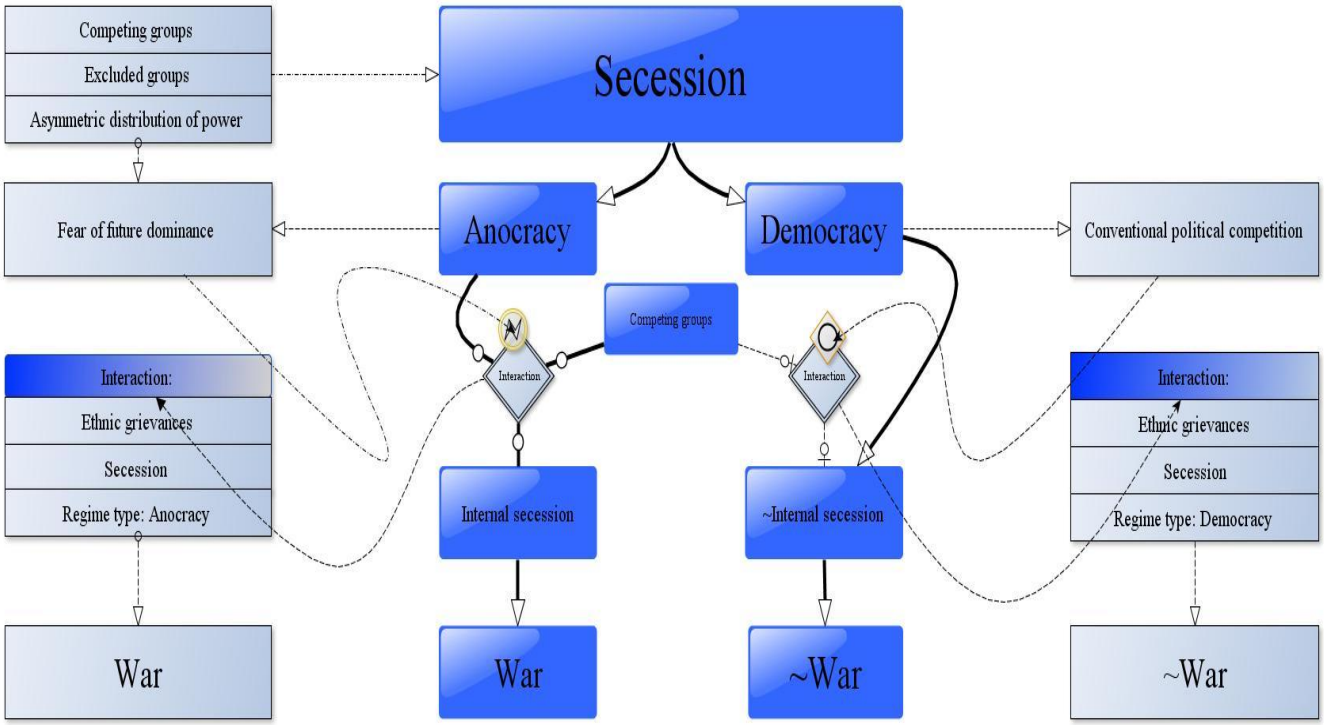

Figure 2.1 Proposed causation between secession, ethnic grievances and regime type

What separates 'war' from the absence of war, or '~war'[5], is what kind of regime type the combination of secession policies and ethnic grievances are interacting with. If these conditions appear with anocracy, I expect ethnic grievances, in terms of fear of future ethnic dominance, to culminate into war. If they appear with democracy, I expect the qualities of this regime type to reduce the tensions between the competing groups. Ethnic grievances would thus not produce war even when interacting with secession, because the ethnic groups will compete for power by conventional political means rather than through conflict.

[5] '~' in front of a condition or outcome indicates negation or absence of the condition.

2.1 Civil War: Definition and General Approaches

I treat 'civil war' as the dependent variable. Civil war is a subset of an 'armed conflict', defined by the Uppsala Conflict Data Project 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" (Gleditsch et al 2002:618-619). 'War' is separated from 'Minor Armed Conflict[6]' and 'Intermediate Armed Conflict[7]' by the threshold of at least 1'000 battle-related deaths per year (Gleditsch et al 2002:619). 'Civil war' is thus an internal armed conflict, defined as a conflict "between the government of a state and internal opposition groups without intervention from other states" (Gleditsch et al 2002:619). The frequency of civil wars peaked in the aftermath of the Cold War. Again, it is increasing after reaching a low point and today, most wars being fought are civil wars (Harbom and Wallensteen 2010).

Is there an aggregated solution to what causes civil war? Collier et al (2003) acknowledge the distinctiveness of each war. Any "all-embracing general theory of civil war would therefore be patently ridiculous, and sensibly enough most analyses are country-specific, historical accounts" (Collier et al 2003:54). However, they argue, statistical aggregated approaches protects against over-generalizing from particular conflicts. Civil war studies should focus on asking why rebellious groups are formed, what their motives are and what their opportunities are (Collier et al 2003:54). Collier and Hoeffler (2004) stand for one of the most prominent studies of civil war onset. This model emphasizes primary commodity exports, and especially oil exports, and how a state that is dependent of such is prone to civil war. This suggests 'greed', or as later rephrased to 'opportunity', to be the strongest determinant of civil war: What determines civil war is the opportunity to finance rebellion. However, their results concerning oil exports are rarely reproduced. Fearon and Laitin (2003) are more concerned with state capacity. GDP/Capita is a proxy for state strength, rough terrain is a proxy for the potential for insurgencies and political instability is a proxy for state performance. Fearon and Laitin (2003) and Collier and Hoeffler (2004) agree that opportunity matter, but they differ in their acknowledgment of motive; is it the degree of state presence or opportunity for finance that is the most determinant factors? Civil wars are not easily distinguished into "justice-seeking" and "loot-seeking" wars. Kalvyas (2001) asks if there is a valid distinction between "new" and "old" civil wars, a question directed towards the notion

[6] Minor Armed Conflict: At least 25 battle-related deaths per year and fewer than 1,000 battle-related deaths during the cause of the conflict (Gleditsch et al 2002:619).
[7] Intermediate Armed Conflict: At least 25 battle-related deaths per year and an accumulated total of at least 1,000 deaths, but fewer than 1,000 in any given year (Gleditsch 2002:619).

that civil wars have become more of a criminal matter than a matter of ideology and grievances. He suggests that the notion of new wars as pursuits for loot could actually be a product of biased journalism.

Is our understanding of civil war affected by the methodological approaches to the subject? Sambanis (2004) provides an analytical review of existing coding rules and points to the difficulty of accurately defining and measuring civil war. He points to the risk of making inferences from unstable empirical results due to the lack of consensus on how to measure civil war. Most projects do not conduct original historical research, but depend heavily on existing data. This might lead to replication of errors (Sambanis 2004). Hegre and Sambanis (2006) conduct a robustness check of empirical results. They do this by employing one standard definition for civil wars across multiple isolated causes and time periods. The most robust causes are large population, low income levels, low rates of economic growth, recent political instability and inconsistent democratic institutions, small military establishments and rough terrain, and war-prone and undemocratic neighbors. Ethnic differences, however, are only robust in relation to lower level of armed conflict and not to the definition of 'war' that requires 1'000 annual deaths.

However, Collier and Hoeffler (2004) and Fearon and Laitin (2003) do not leave much to explain the causes of grievances. When the economical factors are discussed, it is mostly in terms of opportunity, looting and state capacity, not in terms of poverty and grievances. And, there is definitely no room for ethnic grievances. They perform tests for the effect of ethnic fragmentation, polarization, dominance and size of minority, but these variables are mostly statistically rejected or with minimum of effect. This is peculiar to many; are there not examples of ethnic groups fighting each other off for power? This is partly why I focus on Yugoslavia; due to the complexity of the ethnic composition and grievances together with different secession policies and regime types. Is the case of Yugoslavia best explained by components in Collier and Hoeffler's model or by Fearon and Laitin's model? Or are perhaps the perceptions of causes of civil war influenced by these studies' methodological approach? Could alternative approaches to conflict studies provide different results concerning ethnic grievances? If so, what is left to say about the significance of ethnic grievances, and how are they related to conflict?

2.2 Grievances and Ethnic Civil Wars

How come Fearon and Laitin (2003) and Collier and Hoeffler (2004) find so little room for ethnic grievances in their explanations of civil war? One reason for why earlier attempts fail to link ethnic grievances to civil war onset is the way ethnic grievances are measured. I will base my critique of these models on alternative concepts for capturing ethnic grievances, as well as revisiting some of the literature these models claim they derive their theory from. I argue that approaching civil war as an aggregated dependent variable could make us ignore important causes or make them seem trivial. I also argue that the effect of grievances is best captured by studying the distinct political context in which it appears.

Fearon and Laitin (2003) try to capture ethnic grievances in several ways; by accounting for states with an ethnic minority exceeding 5% of the total population and by measuring the degree of ethnic diversity by applying ELF[8]. These measures of ethnic grievances are substantially and statistically insignificant[9]. However, one can ask if the ambition to capture grievances is met by using these measures, and if the study not suffers from misuse of variation. Lieberson (1985) warns about the *misuse of variance*: It is critical if the concern is with pursuing variables with the most proper variation. This might lead researchers to study some problems while ignoring others (Ibid: 91). Hypotheses of ethnic grievances based on a linear relationship between the degree of diversity and the risk of war do not capture the actual relation where these grievances appear. Testing these hypotheses with the ELF-measure is also critical, because ELF is really a tool for measuring fragmentation on an individual level, while conflict is a group-level phenomenon (Cederman and Girardin 2007; Cederman, Buhaug and Rød 2009; Cederman, Wimmer and Min 2010; Horowitz 1985). Since conflict is a group-level phenomenon, measures of ethnic grievances should account for spatial distribution and not simply the degree of diversity[10]. Arguably, studies applying ELF thus suffer a threat to validity from a *misplaced level of analysis* (Lieberson 1985).

Collier and Hoeffler (2004) employ the variable 'ethnic dominance' to capture ethnic grievances; the prospect for ethnic minorities to be politically dominated by a majority group is proxied by whether the largest ethnic group constitutes 45%-90% of the population or not. This proxy is the only measure for ethnic grievance that receives some empirical support.

[8] Ethnic Linguistic Fractionalization, the chance of two randomly drawn individuals belong to different ethnic groups:

$$\sum \frac{1 - f^2 - (1 - f)^2}{(n - 1)}$$

[9] Additionally, they account for the share of the population belonging to the largest ethnic group, the number of languages spoken, and the degree of religious fractionalization by a measure similar to ELF.

[10] The variable 'size of the minority' does to a certain degree control for cohesion, but this proxy mixes cases where minorities are concentrated with cases where the minorities are spread.

They also measure for polarization[11], but these variables are insignificant. Ethnic diversity, again measured with ELF, has in fact a negative effect on civil war onset; diversity makes a society safer if it does not turn into dominance. However, it would be critical to rely on the ethnic dominance-proxy for grievance because the operationalization of this proxy assumes that ethnically dominant policies are a constant force, catalyzed when the largest ethnic group exceeds 45%. Cederman, Buhaug and Rød (2009) argue that this simple measure hardly can reflect the complexity of ethnonationalist civil wars (Ibid: 499). Horowitz (1985) argues that such political behavior is restricted to ethnical divided states, and is rooted in the political context rather than to the mere size of the groups. Also, Collier and Hoeffler (2004) construct the variable from a calculation based on data from USSR (1964). This is arguably a too static measure to capture the de facto circumstances[12].

Another aspect shared by Collier and Hoeffler (2004) and Fearon and Laitin (2003) is the approach to the dependent variable; they both analyze all civil war onsets. Could this influence the results? Cederman, Buhaug and Rød (2009) argue that the controversy surrounding the importance of ethnic grievances are largely due to aggregated and problematic research designs. Sambanis (2001) argues in favor of disaggregating "civil war" into distinct kinds of wars. Identity wars are due to *political grievance* rather than to *economic opportunity*. Ethnic diversity and grievances are also differently associated with such wars than with non-identity wars. Do we lose important nuances in aggregating the dependent variable? Do we risk important conditions becoming trivial? "Conventional wisdom suggests that each war is as different as the society that produced it" (Sambanis 2001:259). Multiple causes to the same output are called "causal complexity" (Ragin 2000). Causal complexity would require us to disaggregate civil war into distinct kinds of war, because conditions consistent in producing one kind of war might only be a trivial cause of another kind of war. Thus, conditions producing "ethnic conflicts" could be irrelevant for explaining "socialist revolutions", but as they are still consistent in producing the outcome of interest, they should be investigated properly. I apply the principle of disaggregating the dependent variable by exclusively approaching the Yugoslavian civil war; the instances of civil war should be related through the selection of cases. Thus, I reduce the risk of comparing wars of different kinds with each other as I assume the cases to produce the same kind of war.

[11] Esteban-Ray (1994): $P^*(\pi) = \sum_{i=1}^{n} \sum_{j=1}^{n} \pi_i^{1+\alpha} \pi jd = IRC2$

[11] Reynal-Querol (2000): $IRC1 = 1 - \sum_{i=1}^{N} (0.5 - \pi_i)^2 \pi_i / 0.25$

[12] The dynamics of ethnic composition will be explored further in the analysis to supplement this critique.

Horowitz (1985) is applied by Fearon and Laitin (2003)[13] to provide a theoretical link between ethnic diversity and conflict. However, while Fearon and Laitin reduce Horowitz' propositions into the hypothesis "more diversity→ more risk of conflict", possibly to meet the assumption of linearity, Horowitz is much more explicit in his deliberations on ethnic conflict[14]. The impact of ethnicity on civil war relies on the political context. He claims that "Shifting contexts make ethnicity now more, now less prominent" (Horowitz 1985:4). Ethnic grievances are relevant when the context is 'ethnically charged'. Such a tension is an attribute in deeply ethnic divided societies, societies where strong ethnic allegiances permeate organizations and bureaucracies, and where otherwise routine administration "assumes a central place on the political agenda" (Horowitz 1985:8). When the political context is charged by ethnicity, political parties are captured by zero-sum ethnic politics (Zartmann 2005). A consequence of this is the formation of ethnic parties. These parties would polarize the political spectrum by deriving influence from ethnic zero-sum politics, while non-ethnic parties could have found compromises in the centre. The strength of the polarization and appeal of the ethnic parties are reliant on the degree of group division and cohesion (Horowitz 1985:293; Zartmann 2005).

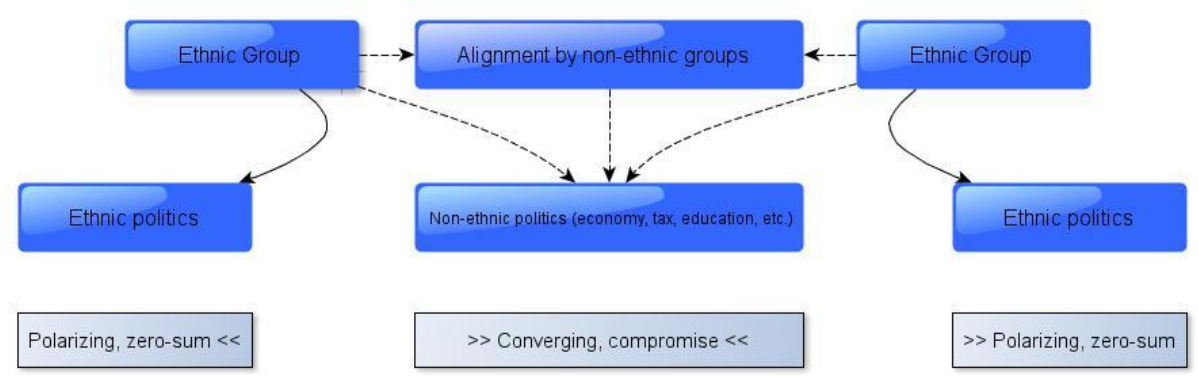

Figure 2.2 Ethnic rhetoric polarizes the political spectrum

To adapt Horowitz' principles to any diverse society would be a misuse of his propositions because they describe political spectrums 'charged' with ethnic policies. Horowitz would thus support a disaggregated operationalization of civil war because his principles do no attempt to explain conflict in societies without this tension. His propositions would also support pursuing ethnic grievances in relation with certain policies and regime types. ELF would not be able to capture Horowitz' perceptions of ethnic grievances because they ignore the role of the state. And, as Horowitz states: "Control of the state, control of *a* state, and exemption

[13] Also by Sambanis (2001) and Østby (2008)
[14] Arguably, Horowitz' propositions belong to instrumentalism, while Fearon and Laitin mistake them for pirmordialism

from control by others are among the main goals of ethnic conflict" (Horowitz 1985:5[15]).

Cederman and Girardin (2007) follow up on this argument. They claim that any study that apply ELF to capture ethnic grievances fail to produce a meaningful operationalization of ethnic politics. The state is paramount in all civil wars by definition (Cederman and Girardin 2007:174[16]). Thus, to capture ethnic grievances related with conflict, one must capture group-level dynamics and the role of the state. They suggest "ethnic exclusion", measured by N*[17]. As opposed to ELF and diversity concepts, 'exclusion' aims to capture ethnic grievance by the size of the groups excluded from power[18]. By this principle, one can measure a country's risk of conflict from the size of the ethnic groups relative to each other. If the group in power decreases relative to the competing groups, the country becomes more prone to conflict (Cederman and Girardin 2007).

But what if the excluded groups would rebel against the group in power in order to secede? Ethnic grievances can be linked to the doctrine of national self-determination, and to the spreading norms of equality that made ethnic subordination illegitimate (Horowitz 1985). The *political context* would thus be charged by ethnic grievances *and* secession policies. Cederman, Wimmer and Min (2010) connect this relation to *the fear of ethnic dominance* in terms of 'fear of future domination' that triggers secession. Thus, the *fear* of dominance, rather than actual *presence* of dominance, is highly relevant but difficult to measure. Ethnic grievances might derive from ethnic competition for- and exclusion from- power, then lead to claims of secession and produce war. It makes sense; large excluded groups claim autonomy if their size exceeds their influence – according to the principle of national self-determination. This fits the principle of polarization as well; when a minority group increases in size relative to the majority in power, their size could exceed their influence (Ellingsen 2000; Reynal-Querol 2002). In this way, polarization of the groups might lead to increased ethnically driven politics and competition. If one group is excluded from power and clustered in contiguous areas, this could lead to claims of increased autonomy or secession.

What if these regions are not homogenously populated by the minority, but include factions of the domestic majority as well? Such pockets of settlements would make the majority a minority and possibly ignite the fear of future dominance within the secessionist state. What can discharge this tension? How can the fear of dominance be removed? Collier (2001) argues that secession should be discouraged since much conflict derives from

[15] Italics in original
[16] They refer here to Sambanis (2004)
[17] N*: Pr(*CivilConflict*) = $1 - \prod_{i=1}^{n-1}(1 - p\ (i))$
[18] Cederman and Girardin (2007) also employs the terms "in centre" in "in periphery".

secession. I argue that the emphasis should be on making secession peaceful, rather than to discourage it. If conflicted responses to secession derive from ethnic grievances, one solution could be to remove the fear of future dominance. I argue that regime type plays a crucial part in this removal.

2.3 Regime Types Related to Grievances and Conflict

I will now discuss the significance of regime types, the attributes of 'anocracies' and 'democracies' and how they can be related to civil war. 'Anocracy' refers to regimes that are neither an 'autocracy' nor a 'democracy'[19]. The reasons for excluding 'autocracy' are two-fold: First, as the analysis will rely upon the PolityIV dataset, none of the observed units are autocracies[20]; they are either democracies or anocracies (Gurr, Jaggers and More 1989; Jaggers and Gurr 1995). Second, the important aspect to me is whether democracy is absent or present. In this context, both 'anocracy' and 'autocracy' are subsets of 'absent democracy'.

The argument of democracy's peaceful attributes has usually relied upon analyses of states' participation in interstate wars. However, the evidences for a monadic democratic peace are mixed (Gleditsch and Hegre 1997) [21]. Gates et al (1996) argues that tests of the democratic peace must control for endogeneity and causation; does peace follow democracy or the other way around? Bremer (1992) approaches the attributes of democracies and suggests that the confusion concerning the monadic attributes of democracy have been due to a misplaced level of analysis: Most studies were done at a monadic level rather than a dyadic level. He finds support for the democratic dyadic peace: Risk of war between pairs of undemocratic states is by far larger than between pairs of democratic states[22]. The presence of only one democracy in a dyad also reduces the risk of war and this suggests a *monadic democratic peace*. Buhaug (2005) supports the dyadic democratic peace, but suggests that Bremer's finding of a monadic democratic peace might be due to his operationalization of 'democracy'. Gartzke (2007) argues that it is not the regime type that makes democracies more peaceful, but rather how democracies interact with liberalism and capitalism.

However, the democratic peace at this state mostly refers to the democratic states' reliability to *participate in interstate war*. As the frequency of interstate wars decrease while civil wars increase, the effect of democracy on *intrastate* wars becomes more interesting. This will require a methodological shift from the measure of democratic participation in wars, to

[19] Often called 'intermediate regime' or 'semi-democracy'.
[20] I count states with the value ≥ 6 on the PolityII variable as democracies: Autocracy: -10 to -6, Anocracy: -5 to +5, Democracy: +6 to +10
[21] "Monadic Democratic Peace" refers to the states being peaceful by itself, while a "Dyadic Democratic Peace" refers to dyads of democracies being peaceful toward each other.
[22] This is supported by advocates of the "Kantian-peace" (Oneal and Russett 1999; Oneal and Russett 2001; Oneal, Russett and Berbaum 2003).

the frequency of wars *within* democracies. And, moreover, research should aim to trace the various attributes of regime types to the changing effect on conflict. This is the aim of Hegre et al (2001). This study approaches the effect of democracy on civil peace, both by focusing on regime type and level of democracy, but also on the amount of change in a regime. They find support for anocracies to be more prone to civil war than both democracies and autocracies. Also, a country that has undergone a recent political transition is more prone to civil war than if the system had been stable. Autocracies are indirectly more prone to future war than democracies due to the expected polity duration (Hegre et al 2001). This aspect of polity duration is explored further by Gates et al (2006).

Which attributes of democracy and anocracy could be related to risk of civil war? Gates et al (2006) separates consistent- from inconsistent institutions. They find that institutionally consistent regimes, whether autocracies or democracies, are more stable than inconsistent regimes. This is due to the institutional self-maintenance within these regime types. These institutions are proxied by "Executive Recruitment", "Executive Constraints" and "Participation". If there is no open recruitment to the executive, no constraints on the executive or public participation, it is an ideal autocracy. The executive is hardly challenged, and the reinforcing institutions "bolster one another" (Gates et al 2006:894). If all these conditions are present, it is an ideal democracy. The constraints on the executive restricts it from full control, it is an open recruitment to his/her position and the public is allowed to participate; again, these institutions are mutually reinforcing. Only some of these conditions are present in anocracies (Gates et al 2006). I am most concerned with the lack of constraints on the executive as it could imply a reduced security guarantee and thus ignite fear of dominance in a diverse society. If the constraints on the executive are absent, the payoffs for political victories could exceed long term institutional interests. It could be worth running severe risks to achieve the executive position - risks that would otherwise be irrational to run if the executive brought any less than total power.

In a certain political context, this could make ethnic groups risking survival to achieve the dominant position because the opposite outcome could lead to non-survival. If the payoffs in the competition for power are either survival or non-survival, the risks running from the process of getting to power would always be outweighed by the payoff. This is how fear of ethnic dominance could lead to war when democracy is absent; by charging the political spectrum and determining risks and payoffs in the political game. To this proposition, democracy would reduce this tension by putting constraints on the executive, and thus reduce the incentive from competing for the executive at mutually exclusive terms. It should also be

expected that proper democratic institutions would be more responsive to ethnic grievances, unrelated to which ethnic group constituting the executive, and thus reduce ethnic grievances to begin with.

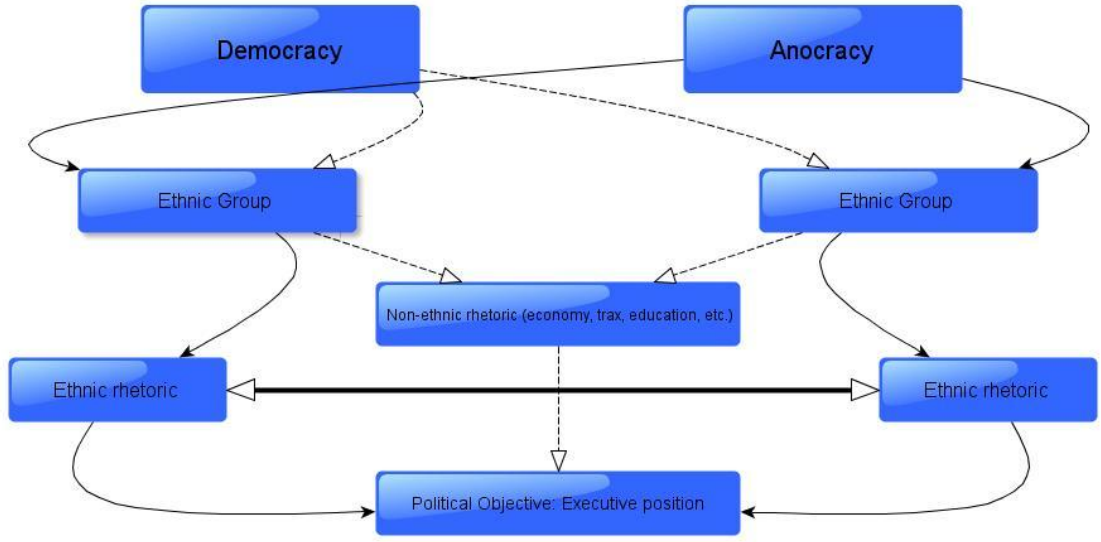

Figure 2.3 Anocracy motivates ethnic groups to compete for the executive by zero-sum means

I have related regime type and ethnic grievances to civil war through the fear of dominance, and by pointing to how lack of constraints on the executive can make the incentives to reach for this position exceed the risks running from competing for it. From this, I propose that consistent democratic institutions could be the crossing point between peaceful- and conflicted secessions, and thus valuable in achieving transitional peace.

2.4 Summary, Argument and Hypotheses

In this chapter, I have discussed civil war and how it can be a function of ethnic grievances, secessionist policies and regime types. I have emphasized how conflict can derive from exclusion which again could lead to secession. This delicate situation would make a society war prone, especially if the secessionist state is populated by settlements in fear of future dominance. I suggest that democracy could function as a mediator to ethnic tensions, while the absence of democracy could increase tensions and intensify both fear of dominance and the incentives for competing for the executive on mutually exclusive terms. Cederman, Wimmer and Min (2010) admit that the relation 'fear of future domination, secession and civil war' hardly can be captured by conventional methods (Ibid: 110). I argue for the application of set-relations theory and the methods of fs/QCA to capture this relation (Ragin 1987; 2000; 2008). If the presence of the combination of secessionist policies, ethnic grievances and anocracy consistently leads to war, we can say that they are necessary conditions for war as an

outcome. If this triangular relation is *sufficient* for producing war, war should consistently appear in cases where the relation appears. This will be the outset for the analysis: to uncover which combinations of conditions that appear in cases that produce war, and compare them to the conditions in cases that do not produce war. The analysis must thus account for variables concerning ethnic composition, regime types, secessionist policies and relationship towards the power centre. To include models with a different perspective, I include components from the models of Collier and Hoeffler (2004), Fearon and Laitin (2003) and Hegre et al (2001). For the analysis to support that war can be a function of the triangular relation, I propose four hypotheses for testing: *Hypothesis 1: Competing ethnic groups are necessary for secession to produce the outcome 'war'.* Secession is "charged" by the presence of competing ethnic groups. If war is present where competing groups are absent, the hypothesis is rejected.

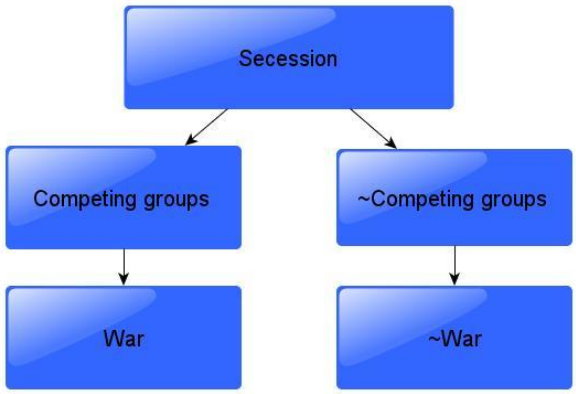

Figure 2.4 Competing groups charge secession with war

Hypothesis 2: Democracy is consistent in producing '~war'[23]*:* Whenever democracy is present, war is absent, no matter if necessary causes are present. Thus, if democracy appears where war is produced, this hypothesis is rejected.

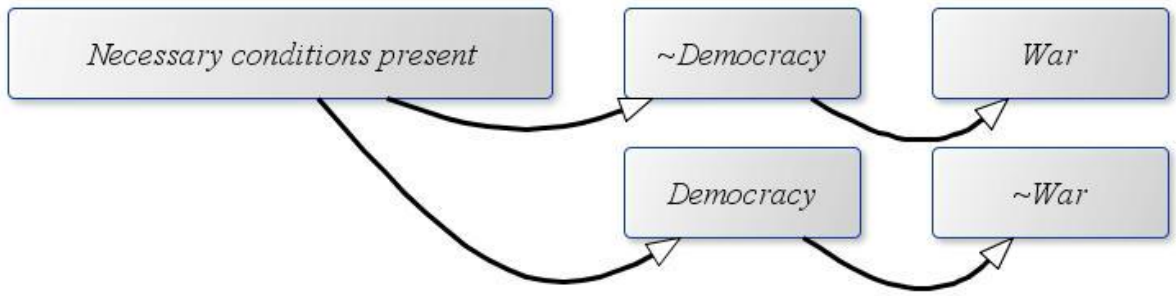

Figure 2.5 Democracy prevents necessary causes from producing war

Hypothesis 3: War is produced when secession appears with competing groups and absence of democracy: This hypothesis aims at the political context: Ethnic grievances in terms of ethnic competition can cause war in certain political contexts. Thus, if war is not present when competing groups are present, secession is present and democracy is absent, this hypothesis is rejected.

[23] '~' in front of a condition or an outcome refers to the negated –or absence of the condition/outcome.

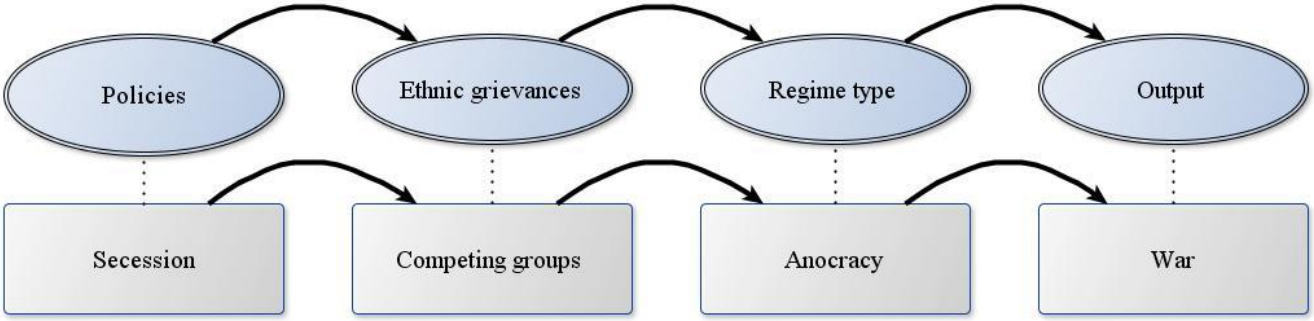

Figure 2.6 Policies, Ethnic Grievances and Regime Type → War

Hypothesis 4: When democracy is present at secession, internal secession is absent. One of the qualities of democracy is that it discharges the fear of dominance and thus removes the foundation for internal secession as a response to the initial secession. In Yugoslavia, the most significant action was related to secessionist claims from within the successor states. I propose that democracy would remove much of the incentive to compete for power and autonomy on mutually exclusive terms, because it would reduce the fear of future dominance. If internal secession is present where democracy is absent, this hypothesis is rejected. The hypotheses will be tested in an analysis applying fs/QCA. I devote the next chapter to introduce fs/QCA and discuss the application of the method, critical aspects of aggregated approaches and certain threats to validity in comparative studies. From there, I present the within-case- and cross-case analyses.

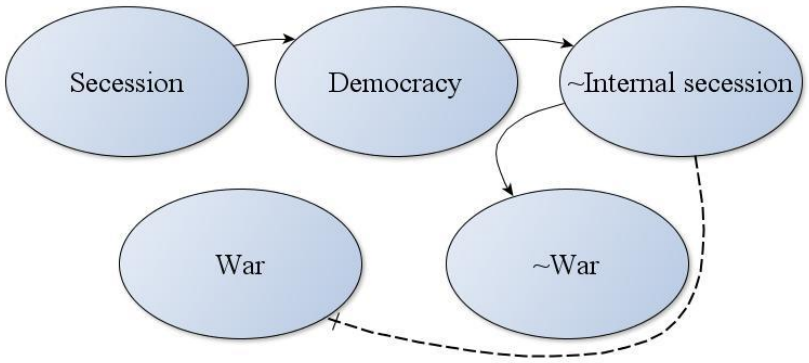

Figure 2.7 Secession – Democracy - ~Internal secession

3.0 Methodology and Research Design

This chapter provides an introduction to the application of fuzzy sets and QCA, explains key terms and operations and review some earlier applications of the method[24]. Further, I discuss the potential of the application to conflict studies before I present the research design for this study and discuss various threats to validity.

3.1 A Brief Introduction to Key Terms and Operations

The strategy for this study is a comparative one. The comparison is made between the federative units of Yugoslavia and the same process of data collection and data analysis is done throughout all the units of analysis[25]. The method applied in this comparative study is fs/QCA. This approach allows for combining attributes from small-N studies and large-N studies by relying on qualitative states of full memberships or full nonmemberships and the quantitative variation in between these states (Ragin 2000:8). Analyses made by fs/QCA demand thorough case-specific knowledge in order to calibrate data into variables –or conditions- and might employ probabilistic methods in order to transform linguistic variables into compatible values. A key criterion for fs/QCA analyses is the *presence* and/or *absence* of conditions in the observed units, and the *comparison* between units that share and differ in producing specific outcomes (Ragin 1987; 2000; 2008)[26].

The fs/QCA analysis sets out to reveal which conditions are necessary and/or sufficient for a given outcome[27]. *Conditions* can be single variables or a combination of variables; *causal combinations*. A *sufficient* condition is a condition (X) that occurs in an outcome (Y), and whenever X occurs, Y is produced. Thus, if X is a sufficient condition to produce Y, then $X \leq Y$. A *necessary* condition is a condition (X) occurring whenever the outcome (Y) is produced. Thus, if necessary, $X \geq Y$, because a necessary condition must be present to produce Y. Conditional statements can be reversed or converted; if X is sufficient for Y, Y is necessary for X (Caramani 2009:44). At the end of an fs/QCA-study, we want to be able to reduce all necessary and sufficient conditions into *solutions*. In this way, complex relations usually demanding several pages of narration can be summarized in single sentences. These expressions are made from entering all data into *truth tables*. The truth table then

[24] From now referred to as fs/QCA
[25] This is according to the principles of comparison, proposed by J. Galtung (1979:46).
[26] The principle of presence/absence of attributes in comparative social sciences can be traced back even to Locke's tradition, constituted in *An Essay Concerning Human Understanding* [1690], later to Hegel's *Wissenschaft der Logik* [1816], and off course, the three methods of agreement, difference and the joint method manifested in John Stuart Mill's *A System of Logic* [1843]. In spite of the major impact up until today, Mill rejected the application of his methods to social sciences because he expected that it would be impossible to isolate variables, and thus it would be impossible to eliminate the threat to validity from spuriousness. Weber[26] [1922] followed Mill's principles in social sciences. He argued that pure experiments were restricted to some psychological studies, statistics were restricted to mass phenomena, while comparison should be the reigning approach to empirical social studies (in Caramani 2009:6-8; Ragin 2000).
[27] In fs/QCA, variables are referred to as conditions.

constructs the truth table *algorithm*; rows with all logically possible combinations of the conditions. All these combinations should be constituted by cases. Combinations without empirical instances constitute the *limited diversity*. The size of limited diversity should be taken into account when concluding from the study because we never know what the outcome would be where these combinations of conditions would appear[28]. The researcher can distinguish the cases where outcome is *present* from where they are *absent* and then use truth table algorithm to reduce all conditions to produce the truth table solution. By this, those conditions that have little or no *consistency* and those that have too little *coverage* to contribute anything to the solution, are reduced away (Ragin 1987; 2000; 2008).

The attributes of sets are based on the Boolean algebra; initially variables are either present or absent in a case, leading to either (1) or (0) in the truth table. These are qualitative anchors describing either *full* membership or *full non*membership in the condition. When we operate with only 1 or 0, we deal with *crisp sets.* In *fuzzy-sets*, 0 still marks full nonmembership, but fuzzy-sets allows for different degrees of membership in the condition. Qualitative anchors of 1 and 0 remains, but in addition we get 0.5; *"neither in nor out"*. On top of these qualitative anchors, we have fuzzy membership; every value between 0 and 1. Thus, most analyses focus on all partial members of a set, and only exclude those who are fully nonmembers[29]. How many levels of membership the fuzzy-sets are divided into is up to the researcher. However, this calibration must be thoroughly anchored in empirics and should also be available to any colleague who might want to replicate the study (Caramani 2009; Ragin 1987; 2000; 2008)[30].

Consistency- and coverage tests are conducted to reveal which conditions to be excluded and included in an analysis. *Consistency*[31] reflects how often condition X occurs in the group of cases that produce the outcome. Perfect consistent conditions are rare in social science. However, in this study I move as deep as comparing only two cases, and thus I require perfect consistency for a condition (Ragin 2008:45). For instance, when I compare Croatia and Bosnia-Herzegovina, secession *with* war, to Slovenia and Macedonia, secession *without* war, the condition needs to appear in both Croatia and Bosnia-Herzegovina to be considered consistent in producing the outcome 'war'. Likewise, a condition needs to appear in both Slovenia and Macedonia in order to be considered consistent in producing the

[28] However, as Ragin (2000) argues, similar to Cioffi-Revilla (1981), limited diversity is the rule in social phenomena, not the exception. Thus, limited diversity should be expected in all studies and may be eliminated from the study by reducing the property space (Ragin 2000:78f).
[29] Classifications of various degree of membership is available in Appendix 1
[30] That is why I make the entire truth table and the logic behind every operationalization available in the appendices.
[31] Consistency $(X_i \leq Y_i) = \sum[\min(X_i, Y_i)]/\sum(X_i)$

outcome '~war'[32]. *Coverage-tests*[33] are applied to separate possible consistent, but irrelevant, conditions from relevant conditions. A condition that occurs consistently within Bosnia-Herzegovina and Croatia, but also in the other six units, would only have a 2/8 = ¼ coverage, which is a minimum of coverage in an analysis with eight units. The condition covers too little of the outcome (Ragin 2008:55). Another way to put it is that I wish to contrast away conditions that do not vary across the groups of cases producing alternate outcomes.

3.2 A Review of the Employment of Fs/QCA

There have been made a distinction between a 'comparative perspective and strategy', usually connected with the application of statistics, and a 'comparative method' (Caramani 2009:14). In a study of revolutions, Skocpol (1979) argued that there must be applied a *comparative* logic separated from statistical methods when a study demands a focus on the cases and not the variables. Her historical comparative method is meant to develop valid explanations of phenomena with relative few occurrences (Skocpol 1979:33-37). Ragin (1987; 2000) adds to this distinction by contrasting case-oriented research to variable-oriented research applying statistics. Zadeh (1965) first introduced fuzzy-set theory to the studies of electrical engineering and refined set-theory by recreating sets as a class of objects with a continuum of grades of membership. The first attempt to apply the methods to International Relations was made by Cioffi-Revilla (1981). He argued that the necessity for fuzzy-sets ran from imprecision: Imprecision is not a consequence of poor measurement or data collection and conventional methods are thus not suited to capture this natural fuzziness. Leung (1983) reviews prior applications of fuzzy-sets in attempts to determine budget necessity and economical spatial behavior[34]. He concludes that the fuzzy-sets approach is developed out of necessity and demonstrates how a large number of problems simply cannot be analyzed with "exactitude when our systems are highly complex, and our information and decision-making processes are ambiguous" (Leung 1983:73). In terms of theory building, he argues that the incorporation of fuzzy-sets theory will enrich existing aggregated and formalized methods.

Earlier applications of fuzzy-sets all relied heavily on formalized presentations of the research. This could arguably lead to a false perception of fuzzy-sets and Boolean approaches as mathematically demanding, thus scaring small-N related scientists away. Ragin (1987,

[32] '~' in front of a variable refers to the negated variable, or *absent* variable.
[33] Coverage $(X_i \leq Y_i) = \sum[\min(X_i, Y_i)]/\sum(Y_i)$
[34] The application of fuzzy sets in business related studies have been explored on various levels. Sanjian (1988) develops a model from fuzzy-sets for exports decision making. He aims at describing how the model can provide an exporter with the optimal strategy for an importer. He sums up by testing the transfer strategies of the United States for a sample of importers. This is a method that could be valuable to i.e. the allocation of aid according to policy conditions. Other examples of the diverse application of fuzzy-sets includes the study of insurance and pricing decision (Sánchez and Gomès 2003), the proper booking of vehicles (John and Bennett 1997) and manpower planning (Guerry 1999).

2000) introduces the more graphical approach with fs/QCA. First, *The Comparative Method* (1987) introduces QCA based on Boolean algebra and crisp-sets. A more sophisticated approach was introduced in the (2000) *Fuzzy-sets social science.* The method is constantly developing, and Ragin includes probabilistic methods to construct the fuzzy-sets in *Redesigning Social Inquiry Fuzzy sets and beyond* (2008). While the studies pre Ragin arguably communicated poorly to any social researcher not closely related to math, more recent studies rely more on Ragin's perception of fuzzy-sets, also benefiting from the free and easily operated fs/QCA software (Ragin, Drass and Davey 2006; Ragin 1987; 2000; 2008). Chan (2003) applies Boolean algebra to determine which conditions are present when wars are terminated. Stokke (2007) analyzes shaming as a strategy for improving the effectiveness of international regimes. Stokke and Chan's applications are pretty hands-on approaches to QCA, leaving the more extensive use of fuzzy-sets suggested for further research. Van der Maat (2011) employs fs/QCA more ambitiously in a study of interventional wars; extensive narrative case studies culminate in a fuzzy-set analysis and algorithm solutions[35].

3.3 Fs/QCA in Peace and Conflict Studies?

Why is there a need for the fs/QCA in peace and conflict studies? As I have discussed, the effect of ethnic grievances is often rejected (Collier 2001; Collier and Hoeffler 2004; Fearon and Laitin 2003; Fearon, Kasara and Laitin 2007). These are often highly aggregated studies, employing a lot of proxies or simple thresholds to replace actual data on real grievance-related relations[36]. Cederman, Wimmer and Min (2010) even suggest that grievance-theories never have been tested, only proxied. Let's take Collier and Hoeffler's (2004) employment of proxies: Parts of the opportunity-model and almost the entire grievance-model are based on proxies (Collier and Hoeffler 2004:570ff). The 'Hostile Government' grasp for a very plausible theoretical aspect: Governments hostile to the current regime and thus sympathetic to rebellion, increase the risk of war onset in the observed state. But the complex relationship between a rebellious group and sympathetic governments are supposed to be accounted for by a single proxy; whether the conflict arose before or after the end of the Cold War[37] (Collier and Hoeffler 2004:568f). Obviously, such a variable receives little empirical support and is thus dropped from the model. However, if a variable could grasp the relation between neighboring countries *and* hostile policies, the theoretical proposition might receive more empirical support. Fs/QCA aims to account for such relations by measuring cases' degree of

35 I draw from Van der Maat (2011) in the execution and structure of the analysis.
36 Proxies are single variables meant to theoretically "mirror" complicated relations instead of actually accounting for those relations they aim to measure the effect of.
37 For a more recent example of research based on oversimplified proxies, see Percy and Harding (2010).

membership in causal combinations. For instance, the theory could claim that 'autocracies see a risk of civil war if neighboring states hosts a large proportion of the autocracy's minorities as immigrants'. 'Hostile government' holds a quite complex relation between regime type, neighboring countries, minority policies and diaspora in this proposition. To find a proper proxy for this relation could be difficult, but a causal combination could answer for the cases' membership in the fuzzy-set "Autocracy AND large share of minority population in neighboring countries". If the case *is* a member of this set *and* produces the outcome 'war', this could bring further support to the proposition. Also, there has been a common perception among researchers that conditions concerning ethnic composition are slowly evolving- and thus could do with a static measure[38]. This brings us back to the application of the ELF index[39]. In the next chapter, I show that ethnic composition is rather fluid and dynamic and that the ELF measurement is not representative for the actual situation (Cederman and Girardin 2007; Posner 2004).

I have previously argued that it can be beneficial to disaggregate a dependent variable like 'civil war', and that such approach is likely to produce results more responsive to the causal complexity and important relationships otherwise difficult to capture. Thus, as a reaction to the heavy employment of proxies, fs/QCA and set-relations theory could be applied. It would demand a larger focus on thorough case-specific research and thus force a reduction of N to a comprehensible size, but the results would have less threat to validity from the level of analysis[40]. However, fs/QCA does not only rely on small-N inductions, which would have been in conflict with Waltz' (2010[1979]) propositions. He argues that constructing theories based on induction alone would limit the researcher from getting an understanding of the entire chain of components. Waltz receives support from Lieberson (1985). He argues that if empirical data are compiled at a lower level, they are totally irrelevant for drawing any conclusions about a problem at a higher level (Lieberson 1985:114)[41]. It does not contribute anything to an explanation to construct small-scale models of real-size cases; one need to derive the essentials from multiple of cases (Waltz 2010[1979]). Pure deduction alone, however, only describes what have already been presented (Ibid: 11). But combining induction with deduction would allow for the construction of general theories while staying true to the complexity of relations. This is

[38] An ELF index based on the (1964): Atlas Narodov Mira (Atlas of the People of the World). Moscow: Glavnoe upravlenie geodezii i kartografii.

[39] The index was constructed by Taylor and Hudson (1972).

[40] In addition to construct theories, established theories can be tested case-specifically by measuring the cases' membership in different sets of conditions the emphasized in the given models.

[41] Recall the discussion from Chapter 2, concerning the misplaced level of analysis when applying ELF to capture group-level grievances

exactly what fs/QCA aims to do, so I argue that Waltz' demands to theory building are given a respectful treatment with fs/QCA. It is important to remember that causal complexity allows for even the most consistent condition to explain relatively small parts of the variation in an aggregation of an outcome. A condition thus might prove sufficient in producing war but could require a low-level analysis to be discovered. Exploring as many *relations* as possible could be more beneficial to the study of civil war than trying to locate *one* isolated coefficient with *the* isolated largest explanatory value, or, keep focusing on more creative ways to employ proxies.

3.4 Research Design

I will now give a presentation of the research design applied in this thesis. The design should account for the selection of cases, the strategy for the analysis and possible threats to validity. I rely on Ragin's introductions to the fs/QCA (Ragin 1987; 2000; 2008), and also derive useful directions from Caramani (2009) and Van der Maat (2011).

The units of observation are the Yugoslavian Federative units; Bosnia-Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Serbia, Slovenia and Vojvodina. This small selection is justified by the expectation of this disaggregated, small-N approach to reveal important relations problematic for large-N studies to capture. I adopt a 'Most Similar Systems'-design for selection of cases as the units are expected to share a lot of attributes, but differ in producing the outcome. A fixed selection makes this study a quasi-experiment (Lieberson 1985:14; Mohr 1995:62f). Quasi-experiments face a threat to validity from selection bias. Mohr (1995) defines the threat from selection bias as the chance for initial differences between the groups affecting the outcome (Ibid: 77). Lieberson (1985) proposes that quasi-experiments require the researcher to make the irrelevant causal forces explicit to the reader (Ibid: 15). The solution in this study is to control for as many possible conditions as possible, and then reduce away trivial conditions. The operations of *consistency* and *coverage* would then exclude the threat to validity from both 'irrelevant causal forces' and 'the chance for initial differences to affect the outcome'.

I start the analysis with a 'within case'-analysis; I conduct case-studies to construct the first table of raw data. The study is done by combining variables from large-N datasets with secondary literature on Yugoslavia. After the within-case analyses, I conduct the first cross-case analysis. At this stage, I restrict the analysis to deal with dichotomous conditions; I measure whether they are present (1) or absent (0) in the observed units. To account for as many nuances as possible, I include several dichotomous variables that might be mutual

exclusive or together represent intervals of the same condition. This is how to test continuous variables in crisp-sets. The consistency and coverage operations are used to locate commonalities and contrasts among cases, thus revealing which relations deserve more focus in the next stage of the analysis. This approach combines two analytic strategies; i) an examination of cases sharing the outcome with an attempt to identify their shared causal conditions[42], and ii) an examination of cases sharing a series of conditions and assess whether these cases share the same outcome, and if not, due to what conditions (Ragin 2008:18). Both strategies are employed because expressing the conditions leading to two mutually exclusive outcomes could give depth to the comparison and to a degree compensate for the small amount of cases producing 'war'.

It could be hypothetically possible to reduce the matrix already, but the truth table algorithm will contain *amount of rows* = $2^{observed\ variable}$ (Ragin 1987:87). At the crisp-set analysis, I am dealing with approximately 50 variables, which would provide 2^{50} rows of possible combinational outcomes. These are too many to make any logical assumption of the limited diversity (Ragin 1987; 2000; 2008). The fuzzy-set analysis is conducted on the conditions that survive the crisp-set analysis. This is done by combining conditions into *causal combinations* or by calibrating crisp conditions into fuzzy-sets. This allows us to reduce the amount of variables and thus achieve an approachable property space (Caramani 2009:27). I simultaneously test for relations in the models of Collier and Hoeffler (2004), Fearon and Laitin (2003) and Hegre et al (2001). In addition to their initial measures, I translate their theoretical concepts into alternative measures more responsive to the disaggregated level. This way, I can recognize the quality of both theory and the applied measures.

After the sets are constructed, I decide on the cases' membership in each set. These decisions must be based on substantial empirical knowledge (Ragin 2000:150)[43]. Instead of being either a full member (1) or non member (0), the cases are now either "full nonmembers" (0) or has a degree of membership (M) (M>0.0). Where the sets are derived from interval- and continuous variables, I use the Direct Method of Calibration to calibrate the fuzzy sets[44]. This method is based on log of the odds for full- and non membership (Ragin 2008:85-105)[45]. The method is beneficial when calibrating conditions such as 'GNP/Capita[46]' into the fuzzy-set 'rich country': The only thing we must decide upon is where to put the thresholds for the

[42] Similar to backward induction
[43] A reproduction of Ragin's (2000) classifications of degree of membership is available in Appendix 1.
[44] Degree of membership = exp (log odds)/[1+exp(log odds)], the method is from now referred to as "Direct log"
[45] Sheets for calibration using this method is available in Appendix 2
[46] GNP/Capita measures the product of each federative unit; while GDP is an aggregated domestic measure of Yugoslavia's product.

qualitative anchors; full- and full nonmembership, and the crossover point. When all cases are assigned to memberships in the fuzzy-sets, I construct a new truth table and employ truth table algorithm to reduce the solution to comprehensible expressions of the conditions leading to 'war' and '~war'. A comparison of the two contrasting expressions will compensate for the small amount of cases producing the outcome, and help widen the understanding of war as a function of the triangular relationship between ethnic grievances, secession and regime type. The conditions and the calibrations of the fuzzy-sets will receive proper attention in Chapter 5, as the process is a central part of the actual analysis.

3.5 Threats to Validity

As was touched upon earlier, all quasi-experiments suffer from the threat to validity due to selection effects. What is an even more relevant threat to validity is limited diversity; the possible combinations of conditions left unobserved. This reduces our knowledge of the counterfactual – what would the outcome have been in these hypothetical cases? The larger the limited diversity, the larger is the proportion of unexplained combinations. To reduce the limited diversity, we can either increase cases or decrease variables. The former is difficult as the study has a fixed selection. The latter is partly the purpose of translating crisp-sets into fuzzy-sets. However, limited diversity must be expected to be the rule and not an exception in social sciences (Ragin 1987; 2000; 2008).

Lieberson (1985) points out four main threats to validity in non-experimental research designs: (1) the contamination problem; (2) the assumption of symmetrical causality; (3) the level of analysis[47]; and (4) the misuse of variance in deciding for variables and interpreting them (Lieberson 1985:49)[48]. Contamination occurs when the variables are imperfectly isolated from each other. In social science, we risk that the proximity of an independent variable affects the outcome, even if it is absent in the given case: "the sheer existence of X_1 in *some* setting may affect Y in situations where X_1 is not even found" (Lieberson 1985:50). The study gets flawed if the effect of the independent variable is not confined to those cases where it is actually present (Ibid). In social science, it is impossible to isolate conditions from each other, so the risk of contamination might never be eliminated. However, when disaggregating conditions as much as possible, I don't necessarily exclude contamination but should be able to reduce its' threat to validity by locating it and make it explicit.

Ragin (2008) argues that while conventional statistical approaches suffers from the assumption of symmetrical causations, fs/QCA rather assumes asymmetry. When a researcher

[47] Again, recall the discussion concerning the application of ELF in Chapter 2
[48] Recall the critique of Fearon and Laitin's (2003) operationalization of diversity-variables in Chapter 2

assumes symmetrical causation, he/she assumes that X's affect on Y is reversible, and that Y will be equally affected no matter in what direction we move X. "In examining the causal influence of X_1 on Y, for example, one has also to consider whether shifts to a given value of X_1 from either direction have the same consequences for Y" (Lieberson 1985:63). Also, irreversible effects occurs when X_1's impact on Y remains even after X_1 is reversed or removed (Ibid: 65f), and when a given causal sequence leads to a fundamental change in the dependent variable so that it will respond differently to other variables (Ibid: 74). I deal with a relatively large time aspect when I define the independent variables and would only assume several events made an irreversible effect on the outcome. By this, the irreversible effects are partly those I wish to locate and reversibility is not that crucial to my design. Having to reverse historical events in order to control for symmetric causation would only add to the list of hypothetical counterfactuals (Ibid: 82f).

The level of analysis can be crucial when translating relations and attributes from one level of analysis to another. For this study specifically, it would be critical if I translate the relations discovered at state level on to an international level[49] (Lieberson 1985:107). The problem appears from both directions in this research design: 1) should the level of analysis be decreased to account for the different population clusters as the unit of analysis to secure internal validity? 2) Should the level of analysis be increased to account for more general, macro level mechanisms to secure the external validity? Eventually, it is an argument in favor of keep testing our results at different levels; we are not allowed to *assume* laws across levels, but could benefit from *testing* them across levels.

Finally, Lieberson warns about the misuse of variance, both when deciding for variables to study and when we interpret them. The concern is put to the pursuit of variables that vary the most properly, or variables that can account for the largest amount of variance in an outcome; this might lead researchers to study some problems while ignoring others (Lieberson 1985:91). Lieberson asks (p.92) "Is it reasonable, or even desirable, for a theory to account for the maximum possible level of variation in the dependent variable?" This is a key argument for applying set-relations theory and fs/QCA: *Consistent* relations might not constitute for a large share of the total variations of war onset. Still, they might account for *sufficient* conditions for war onset. The certain relations I explore in this analysis are not likely to vary in the same way through every case where the outcome is produced –perhaps not even in enough cases for the relation to echo in a significant correlation, thus leaving the

[49] This is what Galtung (1967:45) would refer to as "the fallacy of the wrong level" (Galtung, Johan. 1967, *Theory and Methods of Social Research.* Oslo, Norway: Universitetsforlaget), cited in Lieberson (1985:107).

relation with poor explanatory power when measured in variance alone. It lies within fs/QCA to accept causal complexity. If we accept causal complexity it becomes less pressing to keep looking for *the* largest isolated coefficient.

The application of fs/QCA has been criticized for being deterministic. Caramani (2009) argues that fs/QCA should not be considered so, but rather as a deductive and logical method, drawing conclusions from lack of negative cases (Ibid: 87). If the purpose of the analysis is to explore causations rather than generalize from them, the deterministic attributes of fs/QCA might even be helpful in disaggregating approaches to subsets of a phenomena[50] (Ragin 2008: 58). Could it be argued that fs/QCA solves many of the problems with comparative strategies?

3.6 Summary

In this chapter, I have introduced fs/QCA and the applied research design; which key terms I relate to in the analysis and which operations I will perform. I have pointed towards the benefits of applying the methods to certain aspects of conflict studies and how it can capture phenomena not easily proxied. In a discussion concerned with validity, I argue that fs/QCA can respond to many of the proposed threats in social research and quasi-experiments.

[50] Casing: The analysis of combined conditions leading to a specific sample selection (Ragin 2000:58).

4.0 Data: Case-Studies of the Federative Units of Yugoslavia

The first step of the analysis is to conduct thorough research on the conditions of interest within the units of analysis, Bosnia-Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Serbia, Slovenia and Vojvodina. Each condition is approached as to a question, for instance, "Croat majority" asks the question "Was there a Croat majority in the observed case?" The variable "Democracy" asks "Was the observed case a democracy before outbreak of war?" The purpose of the case-studies is to answer these questions with yes or no – in form of 'present' or 'absent'. The data constitutes the truth table which will be essential in the further steps in the analysis. The entire truth table is available in Appendix 3.

4.1 The Dependent Variable: War

'War' is the dependent variable, or outcome, of the study. '*War'* refers here to "internal armed conflict" exceeding 1'000 annual battle deaths[51]. The INTRASTATE dataset reports that *conflict* took place in Yugoslavia, Croatia and Bosnia-Herzegovina. Although, the conflict that took place in Yugoslavia refer to conflicts in Slovenia and Croatia[52]. I stick to the COW[53]-threshold of 1'000 battle deaths, and thus exclude the Slovenian conflict as it never exceeded 1'000 battle deaths[54] . Thus, '*war'* is present in Croatia and Bosnia-Herzegovina (Sarkees 2000).

4.2 Ethnic Composition

Variables that deal with the ethnic composition in the federative units are constructed from Kalvyas and Sambanis (2005). They report on the ethnic composition in 1961, 1971, 1981 and 1991. The variables are operationalized from the 1991-figures, as shown in Table 4.1. The data accounts for the conditions (a) '*Serb majority'*, (b) '*Croat majority'*, (c) *'Bosniak majority',* or (d) '*other majority'*, for (e) '*positive'*- or (f) '*negative majority'*, and for (g) '*significant Serb'*- or (h) *'Croat minorities'*. This is to grasp the different possibilities for ethnic dominance, fear of ethnic dominance and polarization within each republic. It could also reflect the size of the excluded groups[55]. '*Positive'*- and '*negative majority'* is meant to capture whether the largest ethnic group exceeds 50% of the population. In this way, I will capture ethnic dominance as it is defined by Collier and Hoeffler (2004), but additionally grasp cases where the majority group constitutes for less than 45% of the population. Every approach that can add to the richness and complexity of the ethnic composition is included.

[51] The reason why it is not employed a disaggregated dependent variable, say, an 'ethnic war', is that the small-N eliminates the need to disaggregate the dependent variable even further.
[52] As illustrated by "Terr"
[53] COW – the Correlates of War data project (Small and Singer 1982; Singer and Small 1994)
[54] Mønnesland (2006:405) reports 64, Ramet (1999:65) reports 54
[55] The threshold for significant minority follows the rhetoric of Fearon and Laitin (2003), with a floor on 5 % of the population.

'Ethnic pluralism', is added to guarantee that diversity is accounted for even in units lacking the specifications made in the former conditions. Diversity is present in all cases (Klemenĉiĉ and Žagar 2004:221).

	Nationalities - fractions in percents										
	Serbs	*Muslims*	*Croats*	*Yugoslavs*	*Montenegrins*	*Albanians*	*Slovenes*	*Macedonians*	*Other*	*Total*	*Condition*
Bosnia-Herz.	*31,4*	*43,7*	*17,3*	*5,5*	*N/A*	*N/A*	*N/A*	*0,00*	*2,10*	*100,0*	*c,f,g,h*
Croatia	*12,2*	*0,90*	*78,10*	*2,20*	*0,20*	*0,30*	*0,50*	*0,10*	*5,50*	*100,0*	*b,e,g*
Macedonia	*2,20*					*21,00*		*64,60*	*12,20*	*100,0*	*d,e*
Montenegro	*9,30*	*14,60*		*4,00*	*61,80*	*6,60*			*3,70*	*100,0*	*d,e,g*
Serbia "proper"	*87,3*			*2,50*					*10,20*	*100,0*	*a,e*
Vojvodina	*57,2*	*0,00*	*4,80*	*8,40*	*2,20*	*0,00*	*0,80*		*9,70*	*83,1*	*a,e*
Kosovo	*10,0*			*0,20*		*90,00*				*100,2*	*d,e,f*
Slovenia	*2,4*	*1,40*	*2,70*	*0,60*	*0,20*	*0,20*	*87,60*	*0,20*	*4,70*	*100,*	*d,e*

Table 4.1 Ethnic Composition in Yugoslavia, 1991, per federative unit

I include a measure of ELF since so much research has employed the index to proxy grievances from the degree of diversity (Collier and Hoeffler 2004; Easterly and Levine 1997; Fearon et al 2007; Fearon and Laitin 2003).[5657]. My scores differ from Fearon and Laitin (2003). This could be due to the data selection, level of analysis and time[58].

TABLE 4.2 ELF scores					
Unit	*ELF -1991*	*Fearon and Laitin (2003)*	*1961*	*1971*	*1981*
Bosnia-Herz	*70,3*	*69,7 (1992)*	*70,7*	*66*	*72,1*
Croatia	*36,6*	*33,4 (1992)*	*31,5*	*34,8*	*40,4*
Kosovo	*18*	*75,4 (1945-1990)*	*49,6*	*42,8*	*34,8*
Macedonia	*52*	*51 (1993)*	*45,2*	*47,2*	*49,6*
Montenegro	*58,1*	*75,4 (1945-1990)*	*32,7*	*52,1*	*49,7*
Serbia	*22,1*	*75,4 (1945-1990)*	*14*	*18,7*	*24,9*
Slovenia	*21,7*	*8,6 (1992)*	*8,4*	*11,2*	*17,1*
Vojvodina	*48,9*	*75,4 (1945-1990)*	*59,6*	*59*	*60*
Yugoslavia'	*78,8*	*75,4 (1945-1990)*	*76,9*	*78,7*	*78,8*

Table 4.2 ELF scores

[56] The ELF score is made from the Kalvyas and Sambanis data (2005), using following formula: ELF = $\sum \frac{1-f^2-(1-f)^2}{(n-1)}$

[57] In this measurement, all ethnic groups > 5 % and all "Yugoslavs" are combined with "other", which is included in the measure if < 5%.
[58] Taylor and Hudson (1972) constructed the index from Department of Geodesy and Cartography in the State Geological Committees of the USSR (1964): Atlas Narodov Mira (Atlas of the People of the World). Moscow: Glavnoe upravlenie geodezii i kartografii. The index received an update in 1994.

Figure 4.1 displays how Kosovo varies across polarization and fragmentation into minimal diversity. Montenegro increases towards polarization. The figure suggests that ethnic composition is a fluid condition. Table 4.2 and Figure 1 show how vulnerable the ELF index is from *i) data selection*, and *ii) variation over time.* It seems like ELF is a static measure for a dynamic condition. The ELF variable should be limited to measure the degree of diversity per se. With a threshold of ELF = 50[59], the condition is present in Bosnia-Herzegovina, Macedonia and Montenegro.

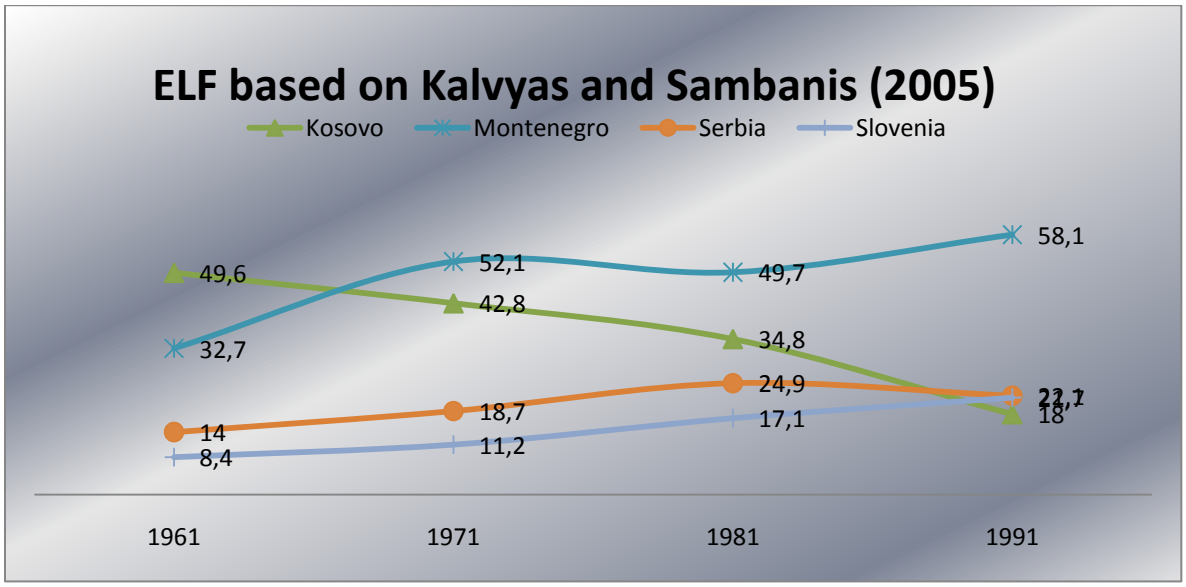

Figure 4.1 ELF based on Kalvyas and Sambanis (2005)

'Multiple languages' is present in an observation where more than one language is spoken; all units employ multiple languages expect Bosnia-Herzegovina (Ellingsen 2000; Klos and McConnell 1974). 'Majority Alternative Tongue' is present in observations where the majority speaks alternative languages to Serbo-Croatian, such as Slovenian or Albanian. The condition is present in Macedonia (Macedonian), Kosovo (Albanian) and Slovenia (Slovene). For details on the data collection and operationalization of these conditions, see Appendix 4[60]. Data on religious diversity is also derived from Ellingsen (2000), with supplements from Ramet (2006:289), Mønnesland (2006:395), and Kalvyas and Sambanis (2005)[61]. All units are

[59] Less fragmented societies are expected to be accounted for by variables concerning domination and general nuances in the ethnic composition.

[60]To construct these variables, data are extracted from Ellingsen (2000)[60] and supplemented by "Klos and McConnell (eds) (1974): *Linguistic composition of the nations of the world: Europe and the U.S.S.R.* Preview accessable at: http://books.google.no/books?id=sgxxLQ9JUZoC&pg=PA763&lpg=PA763&dq=Linguistic+composition+of+Yugoslavia&source=bl&ots=Mji5bLhGA3&sig=kh1RDVmAbqbkSPxLXjul4J07c1w&hl=no&ei=86-ATYS4HsnLsgaV-NzjBg&sa=X&oi=book_result&ct=result&resnum=3&ved=0CC8Q6AEwAg#v=onepage&q=Linguistic%20composition%20of%20Yugoslavia&f=false , pages employed counts from p.761.

[61] Again, the supplements must disaggregate 'Yugoslavia' into Serbia, Montenegro, Kosovo and Vojvodina. The supplementation is made by tracing the distribution of Albanians and Ethnic Muslims in each federative unit.

reported as having more than one major religion[62], except Slovenia which is considered religiously homogenous. It is mostly reported a mix of Christians and Muslims throughout the federative units (Ellingsen 2000). For details on data collection and operationalization of this condition, see Appendix 5.

To account for the spread of the ethnic groups, the condition "large fraction outside republic" measures the size of the ethnic group living *outside its own republic*. The purpose is to measure which ethnic group were the most compact ones. The variable is constructed from Mønnesland (2006)[63]. Only in Slovenia and Macedonia is the variable absent, and Slovenes and Macedonians are thus the most "compact" nationalities.

Table 4.3: Size of ethnic group outside republic (%)	
Slovenia – Slovenes	***1,8****
Croatia – Croats	***18***
Bosnia-Herzegovina – Muslims	***17,4***
Montenegro – Montenegrins	***34,2***
Macedonia – Macedonians	***4,4****
Serbia	
"Proper" – Serbians	***24,6***
Vojvodina – Hungarians	***9,7***
Kosovo – Albanians	***35,1***

Table 4.3 Size of ethnic group outside own republic

4.3 Regime Type

The significance of regime type has been emphasized in the theory. This condition separates between 'democracy', 'anocracy' and 'autocracy' in order to grasp the three broadly defined regime types. The variables are constructed from the polityII-variable in Polity IV, with autocracy present at values -10 to -6, anocracy present at -5 to 5, and democracy is present at values 6-10 (Gurr, Jaggers and Moore 1989; Jaggers and Gurr 1995). Anocracies are expected to be most prone to conflict (Hegre et al 2001:40). Macedonia and Slovenia qualifies as democracies, while Croatia and the Yugoslavian units[64] are anocracies[65].

[62] Not including diverse forms of Christianity
[63] As this study try to stay true to a 5% threshold for significant minorities, this principle is applied to this variable as well. Thus, a "large fraction" of own nationality outside republic requires at least 5% of the nationality.
[64] 'Yugoslavia' accounts for Serbia , Montenegro, Vojvodina and Kosovo, but unlike in the diversity-variables, it is not problematic that the status of the regime in all four units are reflect in one observation, as they had not disintegrated from each other and shared regime type.
[65] Bosnia-Herzegovina's status is disputed, and receives a 0 in all three variables.

Table 4.4 PolityII scores at 1991, from the PolityIV dataset	
Bosnia-Herzegovina	**N/A**
Croatia	**-3**
Macedonia	**6**
Yugoslavia (Serbia, Montenegro, Vojvodina and Kosovo)	**-5**
Slovenia	**10**

Table 4.4 PolityII scores at 1991, from the PolityIV dataset.

Multiparty elections are accounted for to increase the understanding of the political conditions beyond the type of regime. All republics held multiparty elections in 1990 (Klemenĉiĉ and Žagar 2004:288ff; Mønnesland 2006:261; Ramet 2006:356-359). 'Type of representation' is accounted for; Majority voting or Proportional representation. Serbia, Vojvodina, Kosovo and Croatia had majority voting (Mønnesland 2006). The results from the elections in Croatia and Serbia were political scenes totally dominated by nationalist parties (Mønnesland 2006:263; Ramet 1999:54). This reflects some of the political context in these regions. Macedonia had majority voting, and Slovenia and Montenegro had proportional elections (Cohen 1995:150,158). Bosnia-Herzegovina receives absent in both, because the electoral system is somewhat disputed: Burg and Shoup (1999) reports it was a majority election on the district level (Ibid 49f), while Cohen (1995) claims it was a combination of the two kinds (Ibid 146).

4.4 Secession

'Secession' is theoretically very important and covers the units' policy towards the federation. Slovenia held a plebiscite on the issue 23th December, 1990, with a 90% in favor of declaring sovereignty. From then on, secession was official policy of Slovenia (Klemenĉiĉ and Žagar 2004:291). Croatia followed almost instantly. Soon after, Bosnia-Herzegovina and Macedonia proclaimed independence as well (Ibid: 293)[66][67]. By emphasizing the complexity of Yugoslavia's ethnic composition, it becomes mandatory to somehow treat the ethnic groups at a disaggregated level. 'Internal secession' captures attitudes towards secession among non-state actors, and thus their reaction to disintegration in 1991. Slavonian Serbs declared their intention to secede from Croatia and join Vojvodina. The Krajina Serbs declared their intention to seek annexation to Serbia (Ramet 1999:61). The Serbs in Bosnia and Herzegovina also started to demand autonomy (Klemenĉiĉ and Žagar 2004:292). Albanians in Kosovo wanted Kosovo to secede from Serbia (Burg and Shoup 1999:96).

[66] In spite of Macedonia previously voting against Slovenia and Croatia in the matter of the federation (Ramet 1992:285).

[67] Montenegro, however, sided with Serbia in the attempt of keeping a strong federation intact (Ibid: 290). Also, the presidency of Montenegro had been couped and replaced with centralists loyal to Milosevic, as had the regimes in Kosovo and Vojvodina (Silber and Little 1997:58-69) eliminating an official disintegration policy at those units' behalf. Although, some do report that Kosovo applied for recognition to the EC (Burg and Shoup 1999:96). Nevertheless, Serbia had withdrawn the autonomous privileges of the two provinces, and thus arguably also their policies

'State interference' is meant to reflect interference in a unit from central government. This could mirror some of the relationship between central government and the peripheral units. By state interference, it is implied that central government trespassed republic- or provincial borders and autonomy, in order to interfere in what would usually be interpreted as internal affairs. Serbia "proper" would in this case be the centre, commanding the JNA from the federative capital Belgrade. The condition is present in Croatia, Kosovo, Slovenia and Vojvodina and thus absent in Bosnia-Herzegovina, Macedonia, Montenegro and Serbia (Klemenĉiĉ and Žagar 2004; Mønnesland 2006; Ramet 3006; Silber and Little 1997). For a thorough narrative operationalization of this condition, see Appendix 6.

4.5 Financing

The following conditions are derived from the models of Collier and Hoeffler (2004), Fearon and Laitin (2003) and Hegre et al (2001). First, Collier and Hoeffler's model is disaggregated into variables covering primary commodity exports, diaspora and hostile governments.

Collier and Hoeffler's (2004) main emphasis is on states' dependence on primary commodity exports. Second, they separate the exports of oil from non-oil, with a distinct and improving effect on the model; oil producing states are more prone to war than non-oil producers (Collier and Hoeffler 2004:580). To meet this distinction, I include a disaggregated proxy for the Primary Commodity Exports/GDP variable, and an oil variable. The threshold for presence of 'exports dependent' is related to the peaking point of the effect located by Collier and Hoeffler. They find that the effect on civil war peaks at a 33% exports rate to GDP (Ibid)[68]. Thus, for the condition to be present, the units' share of Primary Commodity Exports to GDP must be within the interval 30-35%. The variable is constructed from the federative units' exports-contributions, relative to their total contribution to Yugoslavian GDP. All relevant data and operationalizations are available in Appendix 7. When applying the 30-35% interval as cutting point between absent and present, the condition 'Exports/GDP' is not present in any of the units. Hence, there is no reason to expect primary commodity exports/GDP to have neither reached nor surpassed 33%. Concerning oil, the industrial sector in Yugoslavia demanded a high generation of power, but Yugoslavia was simply not an oil-producing country, thus, the condition is absent in all the units (Allcock 2000). I should also account for dependency on the agricultural sector[69]. The relative agricultural dependent units are Kosovo, Macedonia, Serbia and Vojvodina The variable is constructed as follows: One

[68] Observations with 33% oil- and primary commodity exports to GDP are expected to have a 22% higher chance of civil war than those with none.
[69] A small discussion of the agriculture is available in Appendix 8

unit's employment ratio is divided with each of the other units' employment rates (Mønnesland 2006). Where the 'units' value ≤ 1.0' the observed unit is more dependent on agriculture than its dyadic partner. Where the 'units' value ≥ 1.0' the observed unit is less dependent on agriculture than its dyadic partner. Next, I make a summary of each unit's ratio of more/less dependence on agricultural sector by dividing the amount of dyads where the unit is more dependent by the total amount of dyads where the unit appears. This gives a 0.0-1.0 value. The cross-over point for the condition to be present is 'units' value' ≥ 0.5. All details on operationalization are available in Appendix 9.

The matter of diaspora in the case of Yugoslavia is as tricky and complex as the ethnic composition and the distribution of nationalities throughout the republics. How should the variable be measured when analyzing at state-level? If a federative unit has a sufficient proportion of its' national group clustered within another unit, this is counted as 'significant diaspora'. By restricting the actors to the Yugoslavian units, I make sure that the diaspora accounted for is not a reflection of the conflict, but emigrated before the conflict. I wish to distinguish the diaspora variable from 'large fraction outside republic' with increased demands for cohesion, thus the threshold is lifted from 5% to 10%. This, unfortunately, is just a proxy and must rely on a theoretical context: I expect it requires a larger proportion to influence policies than to be a part of the population per se. By these terms, Serbs are a relevant group in Bosnia-Herzegovina, Croatia, Vojvodina and Kosovo. Bosnian Muslims are only a relevant group in Montenegro. Croats are relevant in Bosnia-Herzegovina. Montenegrins are too spread outside Montenegro's borders for sufficient cohesion and Albanians are a relevant minority in Macedonia. The condition 'significant diaspora' is thus present for Bosnia-Herzegovina, Serbia, Croatia and Kosovo (Mønnesland 2006). For full details on operationalization of the diaspora, see Appendix 10.

I reoperationalize the 'hostile government'-variable[70]: Hostile governments are located by an analysis based on Ramet's (1992) account of Alliance Behavior among the Yugoslav Republics, 1961-90 (Ibid: 281-285). This data counts all sidings in federative disputes and gives an account of contradicting policies and reveals "opponents" among the units[71]. For further details on operationalization, see Appendix 10.

[70] Collier and Hoeffler's (2004) original proxy for hostile government was whether or not the conflict took place under the cold war, and thus could be expected to be financed and supported as a part of the US-USSR struggle. They simply measure this by adding a pre-1989 threshold. Obviously, this condition is absent in all units

[71] When analyzing, the data is narrowed down to 1980-90.

Case: / Hostility from/towards:	*Bosnia*	*Croatia*	*Kosovo*	*Macedonia*	*Montenegro*	*Serbia*	*Slovenia*	*Vojvodina*
Bosnia-Herz		***0***	***0***	***0***	***0***	***1***	***1***	***1***
Croatia	***0***		***0***	***0***	***1***	***1***	***0***	***1***
Kosovo	***0***	***0***		***0***	***0***	***1***	***0***	***0***
Macedonia	***0***	***0***	***0***		***0***	***0***	***1***	***0***
Montenegro	***0***	***1***	***0***	***0***		***0***	***1***	***1***
Serbia	***1***	***1***	***1***	***0***	***0***		***1***	***0***
Slovenia	***1***	***0***	***0***	***1***	***1***	***1***		***1***
Vojvodina	***1***	***1***	***0***	***0***	***1***	***0***	***1***	

Table 4.5 Hostile Governments

4.6 State Capacity and Insurgency Conditions

In Fearon and Laitin (2003), GDP/Capita is strongly significant. $1000 less in per capita income is associated with 41% greater annual odds of civil war onset. I choose to dichotomize GDP/Capita into intervals based on Fearon and Laitin's emphasis of different effects: A country in the 10th percentile ($ 573) has an 18% chance of onset, compared to an 11% chance for countries at the median income ($ 1995) and a 1% chance for those in the 90th percentile ($ 9505) (Ibid:83). These percentiles are translated into thresholds for intervals; 1st interval is ≤ $ 573, 2nd interval is $ 573-$ 1995, and the 3rd interval is $ 1996 - $ 9505 (Ibid: 83). Parmelee (1992)[72] gives a comparison of GNP/Capita[73].

Table 4.6: GNP per Capita, Republics and Provinces, 1987			
Slovenia	**$**	**5 127,00**	**3rd interval**
Croatia	**$**	**3 171,00**	
Vojvodina	**$**	**3 022,00**	
Serbia Proper	**$**	**2 304,00**	
Montenegro	**$**	**1 883,00**	**2nd interval**
Bosnia – Hercegovina	**$**	**1 759,00**	
Macedonia	**$**	**1 585,00**	
Kosovo	**$**	**743,00**	
Yugoslavia (average)	**$**	**2 480,00**	**3rd interval**
(Parmelee 1992:324)			

Table 4.6 GNP/Capita, 1987

[72] In Allcock, John (ed) 1992:324

[73] GNP is a disaggregation of GDP and measures the product of each federative unit. Fearon and Laitin's numbers account for 1985 $ US, while these numbers are from 1987. This could be problematic due to the large inflation in Yugoslavia in the 1980s. Unfortunately, these were all I could find at republic/provincial level.

Table 4.6 shows that none of the units are placed in the 1st interval, Kosovo, Macedonia, Bosnia-Herzegovina and Montenegro are placed in the 2nd interval, and Vojvodina, Croatia and Slovenia are placed in the 3rd interval.

To Fearon and Laitin (2003) 'mountainous terrain' makes it hard to mobilize infrastructure and for the state to reach the periphery, thus the condition favors insurgency (Fearon and Laitin 2003:85). Countries in the 90th percentile[74] have an estimated 13.2% chance of civil war. A similar country with no mountainous terrain (10th percentile) has a 6.5% risk (Ibid: 85). However, this is based on a relative figure measuring the share of the territory that is covered by mountains, but as their origin[75] have 21 missing countries, these missing values are estimated by a calculation of the difference between the highest and the lowest point of elevation in each country (Ibid: 81, *footnote* 16)[76]. With a threshold at 50 this condition is only present in Bosnia-Herzegovina[77].

Fearon and Laitin (2003) measure political instability by a change of 3 or more in any of the last three years on the Polity IV measure (Ibid: 81). For all the units this would imply a change of 3 in the case Yugoslavia, but this did not occur. Yugoslavia kept their value -5 from 1981 until disintegration (Fearon and Laitin 2003). When considering events that occurred through the 1980s, and especially at the end of the 80s/beginning of the 90s, it feels wrong to claim that "political instability" was absent in Yugoslavia for the interval 1987-1990. When applying Fearon and Laitin's model, this data should be disaggregated into regional instability. There are numerous instances of instability not caught by the way it is proxied. Hence, the variable "political instability (regional)" qualifies to *present* in every unit. A narration of this operationalization is available in Appendix 11.

4.7 Political Change

To measure the units' membership in the model of Hegre, Ellingsen, Gates and Gleditsch (2001), the study adds data for regime change and prior conflict[78]. Hegre et al (2001) define regime change to be "an alteration in an existing state greater than or equal to 2 in the democracy-autocracy index, or as the creation of a new state" (Ibid: 36). 6 years after a regime change, the effect on onset has decreased to 1.02 (Ibid: 38). Zero change from 1980 to 1990 within the units disqualifies presence of "regime change" by Hegre et al's measure.

[74] About half mountainous, or 50% share of mountains
[75] Gerard, A.J. for the DECRG project on civil was at the World Bank
[76] In their dataset, Slovenia, covered by approximately 70 % mountains, receives only a score of 9.4, while Bosnia receives a score of 60.5 (Fearon and Laitin 2003).
[77] Yugoslavia accounts for Serbia, Montenegro, Vojvodina and Kosovo.

[78] 'Regime type' has already been accounted for.

However, it could be purposeful to capture this aspect by the regional instability-condition, elaborated on above (and in Appendix 11).

'Proximity to civil war' is measured by time in days since the last civil war ended; recent civil war increases risk of renewal, while there is only weak support for involvement in international wars to increase risk (Hegre et al 2001:41). INTRASTATE 3.0 reports no registered war before 1991 within Yugoslavia (Sarkees 2000). The Krajina Serb rebellion in the Knin rebellion, for instance, had no casualties, but is nevertheless accounted for in the regional instability-condition. It did ignite the war in Croatia, but this war "had begun without a shot being fired" (Silber and Little 1997:103).

4.8 Summary

In this chapter, I have presented data compiled from multiple case-studies and introduced the logic behind the operationalizations of the data into conditions. The data covers several conditions concerning ethnic composition, diversity, secession, and regime type, sources of finance, state capacity and political change. I have hoped to tackle the various theoretical aspects by accounting for as many conditions as possible, although I will be the first to acknowledge the amount of data and aspects left to be covered. Because of the amount of data and variables, I refer to Appendix 3 for the full truth table of conditions, and Appendix 4-11 for more details on applied data and operationalization. In the next chapter I will apply this data to crisp- and fuzzy-sets analyses.

5.0 Cross-Case Analyses

I now begin the process of reduction: At this state, the truth table consists of 50 variables, and although it is hypothetically possible to produce a solution from it, it would have no purpose. The complete truth table is available in Appendix 3. Since many of the conditions are subsets of one another, such as 'Croat majority' and 'Croat majority <50%', these are the first conditions to be reduced away. The next step is to conduct tests of consistency and coverage to locate commonalities and contrasts among the units of analysis.

5.1 Crisp-Set Analysis

Two cases produced the outcome 'war'; Bosnia and Croatia. This small N requires a consistency threshold of 100% (Ragin 2008:46). To control for trivial conditions, I apply a coverage threshold of 0.5 for conditions leading to 'war'. With this threshold, the condition must vary and thus be present in a maximum of 2 contradicting cases.

Table 5.1 Conditions consistent in 'war'

War
Serb minority 5%-49%
Secession
Internal Secession
~Relative Agricultural Dependence
Diaspora
Hostile Government Serbia
Hostile Government Vojvodina

Table 5.1 shows the conditions that remain after the first tests: 'Serbian minority', 'secession', 'internal secession', 'diaspora[79]', '~agricultural dependence' and 'Serbian hostility'. 'Serb minority' together with 'secession' and 'internal secession' as necessary causes for 'war' suggest that 'war' is produced when Serbs react to Croatian and Bosnian secession from Serbia. This reaction could also explain why 'internal secession' is necessary for 'war'. It is reasonable to assume that 'diaspora' is a necessary support for war, and that hostility towards Serbia leads to war by causing secession. Concerning Collier and Hoeffler (2004), Fearon and Laitin (2003) and Hegre et al (2001): None of the original components survived. The reason for this is mostly that the conditions do not vary across the cases, thus, the measures get too aggregated to survive across levels of analysis. Measures for prior conflict, regime change, exports and oil are absent when outcome is present, which contradicts their theoretical impact. 'Political instability' and 'Cold War' miss, but the alternatives I applied to measure the same theoretical propositions fits. Fearon and Laitin's original measure for political instability miss and is too trivial. The regional alternative is also too trivial. Diversity, measured by ELF, is dropped as well. Also, the alternatives for 'hostile government' survive the test; presidential disputes with Serbia and Vojvodina are a consistent condition in the cases producing 'war'. The absence of

[79] The reason why 'Diaspora' survived both the consistency and the coverage thresholds, and 'Large fraction of nationality outside republic' did not, is because the 'Diaspora' condition put increased requirements of cohesion on the fractions. While in 'Large frac…', there were no requirements for cohesion and the condition became trivial.

agricultural dependence also survives. Could the absence of agricultural dependence be an indicator of necessary economical conditions for secession? To bring further depth to the other relations, I do a similar test for '~war' under the same criteria of 100% consistency. But since I now examine 6 out of 8 cases, the threshold for coverage is 6/7, or 0.85.[80] Table 5.2 shows the surviving conditions.

~War
~Croat minority 5%-49%
~Bosniak majority
~Croat majority
Largest group > 50%
Multiple languages
~Mountainous terrain

Table 5.2 Conditions for '~war'

When '~Croat minority' and '~Croat majority' both are consistent in '~war', this would imply that the absence of Croat populations in general is necessary for '~war'. Recalling that Serb minorities are necessary for 'war', this supports my theory concerning competing groups; Serbians and Croats struggled for the hegemony in Yugoslavia. Croats wanted more autonomy and parted from the federation. The reason why Croatian absence would lead to absence of war would be because Croats both were disintegrationists as well as numerous and influential. The presence of Croats would thus lead to secession, a necessary condition for 'war'. Since 'Serb minority' is also necessary for 'war', the territories where both Croats and Serbs appear would experience war. This is according to my hypothesis concerning competing groups causing conflict. Notice that 'largest ethnic group exceeding 50% of the population' is a necessary condition for '~war'. This runs contrary to a common conception of ethnic dominance (Collier 2001; Collier and Hoeffler 2004). When an ethnic group constitutes a clear majority, this could bring stability to the region. Fearon and Laitin's terrain variable was not included in conditions for 'war', but its' absence is necessary for '~war'. This is an interesting aspect of the concept of counterinsurgencies; is the ability for rebels to hide *less* important than not having the ability to hide? 'Multiple languages' is also consistently necessary for '~war'. This could perhaps be caused by linguistic fragmentation decreasing Serbian or Croat claims for a given territory. This condition could add some depth to the understanding of ethnic and national identities.

To find out what separates the secessionists from each other, I do a similar test of commonalities but restrict N to the cases where 'secession' is present. Now, I focus on conditions that are consistent and unique to the two causal combinations 'secession AND war' and 'secession AND ~war'[81]. Thus, I put a coverage threshold at 1.0 in addition to the consistency threshold of 100%. I am able to keep 'anocracy' and 'democracy' as consistent

[80] Minimum coverage 6/8=0.75 and maximum 6/6=1.0, while in the first analysis, it was minimum 2/8=0.25 and maximum 2/2=1
[81] A table displaying this is available in Appendix 12

conditions[82]. The analysis suggests that secession leads to war in cases where an ethnic minority supported by the centre is *present*, competing groups are *present* and democracy is *absent*. It is thus reasonable to argue that strong central supported minorities would lead to internal secession in absence of democracy. From the conditions leading to 'war'[83], I have now some intricate relations to focus on. I add the analysis of secessionists to the first test. The following conditions pass the consistency- and the coverage test for 'war' and '~war':

Associated with 'War'	Associated with '~War'
Serbian minority	***~Croats***
Secession	***Largest ethnic group > 50%, non-Croat or non-Bosniak***
Internal Secession	***Multiple languages***
Diaspora	***~Mountainous terrain***
~Agricultural dependence	***~Secession***
Anocracy	***~Serbian minority***
Serbian hostility	***Democracy***
	~Internal secession
	~Diaspora

Table 5.3 Summary of conditions

I do a thought experiment to see if conditions make logical sense negated. The negated conditions are all constituted by cases sharing the outcome (see Appendix 12). I add these conditions to the total list of consistent conditions.[84] To get a notion of which conditions are necessary and which are sufficient, the conditions are tested by their frequency throughout all units[85]. The results are displayed in Table 5.4. The calculations are available in Appendix 13.

Necessary causes for WAR (Value ≥ 0.25):	Sufficient causes for WAR (Value < 0.25):
Anocracy	***Croat majority***
Serbian hostility	***Bosniak majority***
Secession	***Negative majority***
Serbian minority	***Mountainous terrain***
Diaspora	***~Multiple languages***
~Agricultural dependence	
Internal secession	
Croat settlements	

[82]The missing values for Bosnia-Herzegovina is replaced by employing the principle of 'Multiparty elections=1 AND ~Autocracy AND/OR ~Democracy' = Anocracy. This would imply that democratic features are present, sufficiently to rule out autocracy, but not sufficiently present to qualify as democracy.

[83] , I reduce away Vojvodina hostility. Empirically there is no reason to believe that policies against Vojvodina would lead to war Also, Vojvodina policies would be advocated by Serbia, thus Vojvodina policies are subsets of Serbia's policies.

[84] Appendix 14

[85] Sufficient conditions are subsets of the outcome, thus have the value $X_i \leq Y_i$, while the necessary conditions are those conditions the outcome is a subset of, thus $X_i \geq Y_i$ = necessary causes.

Necessary causes for ~WAR (Value ≥ 0.75):	Sufficient causes for ~WAR (Value < 0.75)
~Croat settlements	***~Internal secession***
~Bosniak majority	***~Serbian minority***
Positive majority	***~Diaspora***
~Mountainous terrain	***~Serbian hostility***
Multiple languages	***Agricultural dependence***
	Democracy

Table 5.4 Sufficient and Necessary conditions

I wish to draw attention to some particular occurrences in Table 5.4. First of all 'necessary for 'war'' is mirrored by 'sufficient for '~war'' and vice versa. We see that 'anocracy', the two degrees of secession and the presence of Croats with Serbian settlements are necessary for 'war'. This supports Hypothesis 3, that war is produced when secession appears with competing groups and absence of democracy . Thus, it would be sufficient for a successor state to not have internal secession or to have democracy to produce '~war'. Also, it is necessary for a state not to have Croat settlements or Bosniak majority to produce '~war' and the presence of these are sufficient for producing 'war'. Again, this suggests ethnic competition and polarization as these ethnic groups coexisted with Serbs settlements, and competed for influence in both Croatia and Bosnia-Herzegovina. Croats, Bosniaks and Serbs never appear together within a democracy; this could be due to- or the cause of- the ethnic charged political spectrums. This tension comes in form of polarization in Bosnia-Herzegovina and to the fear of dominance in Croatia. Both cases fail to mediate this tension with 'democracy' and this limited diversity should be accounted for when concluding from the analysis. Interestingly, a large majority group is necessary for '~war' which is a direct opposite to the 'dominance'-proxy for grievance (Collier 2001; Collier and Hoeffler 2004). Conditions that favor insurgency is supported as 'mountainous terrain' is sufficient for 'war' and its' absent is sufficient for '~war'.

5.2 Fuzzy-Set Calibrations

In this section, I reconstruct the conditions into fuzzy-sets. Then I present the logic behind these reconstructions and the classification of membership for each set. Some conditions will remain dichotomous, while others are calibrated either be a qualitative approach or by the Direct Log Method (Ragin 2008).

Condition	Code	What it measures	Set degrees	Method of calibration
Croats	*Cr*	*Croat settlements above 5%*	*Crisp*	*Qualitative*
Serbminority	*Ser*	*Serbian minority*	*Three-value*	*Qualitative*
Cro.+bos.maj	*CrBo*	*Croatian or Bosnian majority*	*Crisp*	*Qualitative*
Dominated	*Dom*	*Largest ethnic group dominant in population*	*Seven-value*	*Direct log*
Secession	*Sec*	*Secession*	*Crisp*	*Qualitative*
Internal secesseion	*Isec*	*Internal secession*	*Crisp*	*Qualitative*
Anocracy	*Ano*	*deviation from PolityII scores 10 and -10 in Polity IV*	*Five-value*	*Qualitative*
Democracy	*Dem*	*close to PolityII score 10*	*Five-value*	*Qualitative*
Terrain	*T*	*share of mountains*	*Seven-value*	*Direct log*
Multiple languages	*Ml*	*multiple languages spoken*	*Three-value*	*Qualitative*
Agriculture	*Agr*	*rate of employment in agriculture*	*Seven-value*	*Direct log*
Serbiahostile	*H*	*Policy disputes with Serbia*	*Seven-value*	*Qualitatively*
Diaspora	*D*	*Largest cluster of diaspora*	*Seven-value*	*Direct log*

Table 5.5 List of fuzzy-sets

Croats, ('Cr'). Both a Croat minority and majority are necessary for 'War'. This set is a combination of the two conditions. This is a crisp set, with a threshold at 5 %. Serb minority, ('Ser'), is a three-value set constructed qualitatively. Full membership (1): preferably above 10 % of Serbs in the population. Ambiguity (0.5): When only a small minority exists (ca. 5%-10%). Full nonmembership (0): Where the Serb settlements exceed 40% (not minority) or below 5% (too small). Croatian or Bosnian majority ('CrBo') accounts for whether Croats or Bosniaks are the largest ethnic group in the unit. This is a crisp-set. Dominated, ('Dom'), accounts for the degree of domination by the largest ethnic group[86]. It is a seven-value set, constructed from the Kalvyas and Sambanis (2005) data, by the Direct Log Method with the anchors 'Full membership (1): When an ethnic group constitutes for 95 % of the population'. 'Ambiguity (0.5): When the largest group constitutes for 50%' - this opens for polarization or high fragmentation, and 'Full nonmembership (0): When the largest group constitutes for less than 40%'. Terrain, ('T'), measures the logged relative distance between the highest and the lowest point in the unit, derived from Fearon and Laitin (2003). The values are translated directly into a seven-value set. Multiple languages, ('Ml'), is a three-level, qualitatively

[86] Only in size, not in politics

constructed set. Full membership (1): 2 or more languages are employed by a substantial proportion of the population. (0.5): 1 major, other only spoken by small fractions. Full nonmembership (0): only 1 employed language. Secession, ('Sec'), accounts for whether or not the unit aimed for secession. Internal secession, ('Isec'), accounts for whether or not there were groups within the unit who claimed territorial secession. Diaspora, ('D'), is constructed by the direct log of the units' share of nationality outside own republic. These are calibrated into a seven-value set. Anocracy, ('Ano'), is constructed from the units' PolityII scores. It is qualitatively constructed into a five-level set by measuring the deviation from '0' (full anocracy), both above and below 0, and combining values into intervals. Full nonmembership (0): Values furthest from 0 [-10,-9 and 10,9]. Full membership (1): Within the interval [-1,0,1]. Ambiguity (0.5): intervals surrounding [-5 and 5][87]. Democracy, ('Dem'), is similar to 'Anocracy', but does not include the entire PolityII scale. The lowest threshold for membership in this five-value set is a PolityII score of -5, any case equal or below is a full nonmember (0). The threshold for full membership (1) is a PolityII score of 8. Agricultural dependence, ('Agr'), measures membership in the proposal that the state is dependent on agriculture. This is a direct log of the units' employment rates in the agricultural sector. The set is constructed as a seven-value set. Full membership (1): 50 %, Full nonmembership (0): 5 %. Serbian hostility, ('H'), is based on the measurement of relative hostile governments presented in Chapter 4. All units are measured upon Serbia's voting in the federative presidency; the amount of disputes the unit sided against Serbia is divided upon the total amounts both units appeared. This measure is calibrated into a seven-value set.

In addition, I test the consistency of conditions asserted with Collier and Hoeffler (2004), Fearon and Laitin (2003) and Hegre et al (2001). Most of these conditions remain crisp except 'GDP/Capita' and 'Exports/GDP'. 'GDP/Capita' is the seven-value set 'rich country'. It is calibrated by direct log[88]. 'Exports/GDP' is reconstructed into 'Exports'. This is now a seven-value set, measuring the cases' membership in an exports-based economy. Full membership lies within the interval of 30-35% of exports to GDP, while full nonmembership lies within the 0-5% interval or above 60%[89]. Oil, regime change, regional and domestic instability, prior conflict and Cold War are measured as in the crisp sets. This produces the following truth table for analysis:

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[87] Since Bosnia-Herzegovina is missing in Polity IV, it is given the same values as the rest of Yugoslavia: Serbia, Kosovo, Vojvodina and Montenegro.

[88] The thresholds are given by Fearon and Laitin (2003): For 1=full membership requires a GDP/Capita above the threshold for the 90th percentile ($9505), and 0=full nonmembership is awarded cases with a GDP/Capita below median ($5751).

[89] This is in order to fit with the expected curvilinear relationship between export dependence and risk of war.

	WAR	Cr	Ser	Crbo	Dom	Sec	Isec	Ano	Dem	T	Ml	Agr	H	D
Bosnia-Herzegovina	**1**	**1**	**1**	**1**	**0,33**	**1**	**1**	**0,5**	**0,25**	**1**	**0**	**0,17**	**0,5**	**0,5**
Croatia	**1**	**1**	**1**	**1**	**0,67**	**1**	**1**	**0,75**	**0,25**	**0,17**	**0,5**	**0,17**	**1**	**0,67**
Kosovo	**0**	**0**	**0,5**	**0**	**0,83**	**0**	**1**	**0,5**	**0,25**	**0,17**	**1**	**0,33**	**0,67**	**0,67**
Macedonia	**0**	**0**	**0**	**0**	**0,67**	**1**	**0**	**0,25**	**0,75**	**0,17**	**1**	**0,33**	**0,5**	**0**
Montenegro	**0**	**0**	**0,5**	**0**	**0,67**	**0**	**0**	**0,5**	**0,25**	**0,17**	**0,5**	**0,17**	**0,33**	**0**
Serbia	**0**	**0**	**0**	**0**	**0,83**	**0**	**0**	**0,5**	**0,25**	**0,17**	**0,5**	**0,67**	**0**	**0,83**
Slovenia	**0**	**0**	**0**	**0**	**0,83**	**1**	**0**	**0**	**1**	**0,17**	**0,5**	**0**	**1**	**0**
Vojvodina	**0**	**0**	**0**	**0**	**0,5**	**0**	**0**	**0,5**	**0,25**	**0,17**	**1**	**0,17**	**0,5**	**0**

Table 5.6 Fuzzy-sets Truth Table

5.3 Fuzzy-Set Analysis

'Croats', 'Serb minority', 'Croatian or 'Bosniak majority', 'secession' and 'internal secession' are consistently necessary for 'war'. 'Croat population AND Serb minority AND Croat OR Bosniak majority' is thus a necessary combination for producing 'war'. For producing '~war', the necessary combination is '~Croat population AND ~Croat OR Bosniak majority' which add further support for the significance of Croats and the competition between Croats and Serb settlements. The truth table solution for the causal combination in Table 5.7 shows that the necessary causes for 'war' are both consistent and has total coverage of the outcome. The conditions are thus combined into one combination of necessary causes.

Table 5.8 shows the truth table solutions for 'war' and '~war'. These are now my expressions for sufficient causes to war in Yugoslavia 1991-95. For a Yugoslavian state to produce war, it is sufficient to have a significant diaspora, to gain Serbian hostility, to not have an economy based on agriculture and to have an anocracy, as long as the necessary causes are present. For a state not to produce war, it is sufficient that the largest ethnic group exceeds 50% of the total population, the terrain is not harsh and the population is linguistically diverse and that the necessary causes for war are absent.

Analysis of necessary causes

Outcome: WAR			*Outcome: ~WAR*		
	Consistency	*Coverage*		*Consistency*	*Coverage*
Cr	*1.000*	*1.000*	*~Cr*	*1.000*	*1.000*
Ser	*1.000*	*0.666*	*~Ser*	*0.833*	*1.000*
CrBo	*1.000*	*1.000*	*~CrBo*	*1.000*	*1.000*
~Dom	*0.500*	*0.374*	*Dom*	*0.721*	*0.812*
Sec	*1.000*	*0.500*	*~Sec*	*0.667*	*1.000*
Isec	*1.000*	*0.667*	*~Isec*	*0.833*	*1.000*
Ano	*0.625*	*0.357*	*~Ano*	*0.624*	*0.833*
~Dem	*0.750*	*0.315*	*Dem*	*0.458*	*0.846*
T	*0.585*	*0.534*	*~T*	*0.830*	*0.857*
~Ml	*0.749*	*0.500*	*Ml*	*0.750*	*0.899*
~Agr	*0.830*	*0.277*	*Agr*	*0.278*	*0.830*
H	*0.750*	*0.333*	*~H*	*0.500*	*0.667*
D	*0.585*	*0.438*	*~D*	*0.750*	*0.844*

Truth table analysis

	Consistency	*Raw coverage*	*Unique Coverage*
Cr*Ser*CrBo*Sec*Isec	*1.000*	*1.000*	*1.000*
solution coverage:	*1.000*		
solution consistency:	*1.000*		

Table 5.7 Analysis of necessary causes and truth table analysis

--- INTERMEDIATE SOLUTION ---

frequency cutoff: 1.000000

consistency cutoff: 1.000000

Outcome: WAR	**raw coverage**	**unique coverage**	**Consistency**
diaspora*serbiahostile*~agriculture*~democracy*anocracy*necessary	**0.585**	**0.585**	**1.000**

solution coverage: 0.585005

solution consistency: 1.000000

****

--- INTERMEDIATE SOLUTION ---

frequency cutoff: 1.000000

consistency cutoff: 1.000000

Outcome: ~WAR	**raw coverage**	**unique coverage**	**Consistency**
dominated*~terrain*multiple languages*~necessary	**0.583**	**0.583**	**1.000**

solution coverage: 0.583340

solution consistency: 1.000000

Table 5.8 Intermediate Truth Table Solutions

Now I wish draw attention to the two necessary conditions 'secession' and 'internal secession'. How do we know if any of the sufficient causes are sources to secession and thus produce war through this causation? The necessary causes might be endogenous; one leading to another, thus both appears as necessary for the outcome. In statistics, this would be a problem of multicollinearity, but in fs/QCA, we can trace the causality to the subset-relationship between the conditions. We know that both Slovenia and Macedonia seceded without war, and the crisp-set analysis supported the theory in its emphasis of regime type as a decisive factor for whether or not the secession comes with conflict or not. Together with the presence of democracy, what contrasted peaceful secession from conflicted secessions was the absence of Serb minority, internal secession and diaspora. This shows that absence of secession itself is sufficient for not producing war, but not necessary. *It is possible to secede without war*. As long as the ethnic context is not tense (as when Serbian minorities live under Croat or Bosniak majority) and democracy is present, war will not follow the secession.

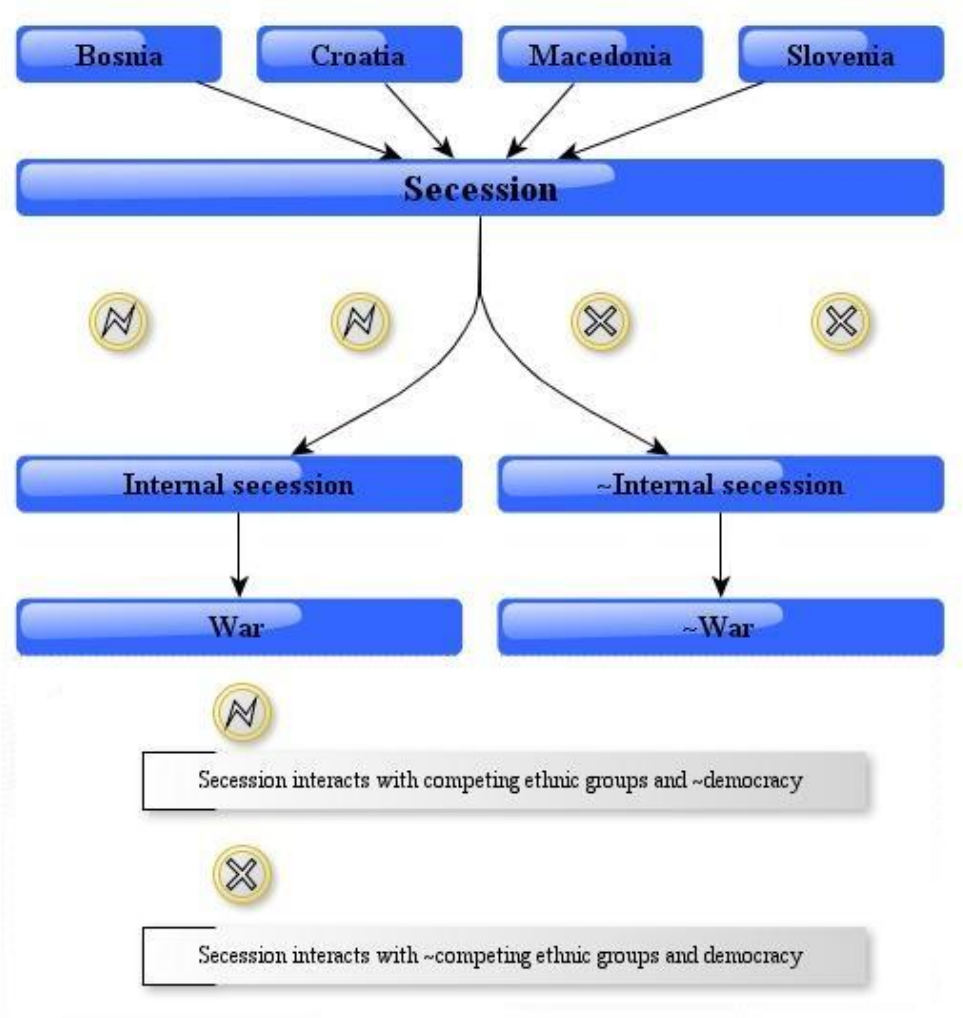

Figure 5.1 the observed causation linking war to regime type and ethnic grievances

The validity of such a conclusion suffers from the limited diversity; I have no cases of observation where Serbs are minorities under Croats and Bosniaks in a democracy. However, these conditions could be made more general: Secession appearing together with competing ethnic groups and democracy. This was also the case in Macedonia, where the Albanian minority constituted for over 20%, which is a larger proportion than the Serb fraction in Croatia. Thus, Macedonia's peaceful secession can work as an example where democracy is present, ethnic polarization is present, secession is present but war is absent. This would support that democracy could be sufficient to discharge ethnic tensions. However, it could be questioned how comparable Serbs and Albanians are. Albanians in Macedonia were not used to domestic majority and central kinship in power as Serbs were.

I have argued earlier that internal secession is a response to state secession. If so, internal secession should be a subset of secession and the latter a necessary condition for the former. The test for necessary causes for 'internal secession' for the secessionist states[90] in Table 5.9 supports this; secession is consistently necessary for producing internal secession[91]. 'Anocracy' is also consistently necessary for 'internal secession', and the absence of anocracy is consistently necessary for producing '~internal secession'.

Analysis of Necessary Conditions			
Outcome: Internal Secession		*Outcome: ~Internal Secession*	
	N=4		*N=4*
Conditions tested:	*Consistency*	*Conditions tested:*	*Consistency*
Cr	*1.000*	*~Cr*	*1.000*
Ser	*1.000*	*~Ser*	*1.000*
CrBo	*1.000*	*~CrBo*	*1.000*
Sec	*1.000*	*~Sec*	*0.000*
Ano	*1.000*	*~Ano*	*1.000*
D	*0.585*	*~D*	*1.000*

Table 5.9 Analysis of necessary conditions for internal Secession

Table 5.9 shows how all the necessary causes for 'war' reappear as necessary causes for 'internal secession', but when restricting the analysis to the secessionist states, 'anocracy' also becomes consistently necessary for the outcome. This suggests that when studying causes of war in Yugoslavia, much of the answer could lie within causes of secession. The different

[90] Thus, the same analysis, with N=4. An additional change is that Regime type is made crisp; Democracy 1 or 0, Anocracy 1 or 0. This de-fuzzying of the condition is in order to make a clear distinction between the two conditions.

[91] When the set is expanded to include all eight units, 'Secession' is less consistently necessary for 'Internal secession'. The reason for this is Kosovo, where Albanians wanted to secede from Serbia. Kosovo never seceded from Serbia. Croat population is also absent in Kosovo; this could suggest that Croat population is necessary for either secession itself – or for the claim for secession to be of significant force. I.e., Croats in Bosnia-Herzegovina would have a stronger supporter in Croatia then Kosovo-Albanians would have in Macedonia or Albania. Finally, the Kosovo-Albanian cry for secession was not even strong enough for secession to become state/provincial policy. Point being, there are circumstances where Kosovo is a dubious case when deciding the case's importance as 'internal secession'. When Kosovo is excluded in the N=4-analysis, secession becomes a necessary condition for internal secession.

analyses have supported my theoretical propositions; ethnic grievances, in relation with secession and regime type expose a society to the risk of war. The reappearance of Serb minorities and Croats and Bosniaks suggest that ethnic grievances are best captured as competing groups and possibly also excluded groups. Croats and Bosniaks are domestic minorities to Serbs, while Serbs are a regional minority in Croatia and Bosnia-Herzegovina. Secession would arguably have triggered fear of future dominance within these regions, and this tension is not institutionally mediated because democracy is absent in both cases. Also, recall from the case-studies that ethnic nationalist parties dominated both Croatia and Serbia, and also the parliament of Bosnia-Herzegovina[92]. This reflects the ethnic tension the political context was charged with in these states. I turn back to the hypotheses to summarize the analysis.

Hypothesis 1: Competing ethnic groups are necessary for secession to produce the outcome 'war': I have shown how Serb minorities are present with Croat or Bosniak majority when 'war' is produced. In terms of competing groups, I remark that Serbian minority with a Kosovo-Albanian majority did not produce war. This could have various reasons, but I suggest that much of the explanation is in Kosovo's relative strength to Serbia, and that the submissive role of the region failed to put any real threat to the claim. Kosovo was a poor region and their policies were to a large degree directed from Belgrade. The political relevance of Croats and Bosniaks thus exceeds the relevance of Kosovo-Albanians in their competition with Serbs.

Hypothesis 2: Democracy is consistent in producing '~war': I have shown how democracy consistently produces '~war' even within secessionists. Unfortunately, no cases could prove the effect of democracy on competing groups' response to secession, because no cases where Serbs, Croats and Bosniaks operated together produced democracy. However, the case of Macedonia shows how a society with a large minority could secede with democracy and avoid war. Still, the Albanian minority of Macedonia was not disconnected from a majority like the Serbs were, so the validity of this comparison should not be taken for granted. The hypothesis is still supported as democracy is consistent in producing 'war', and war is never present when democracy is present.[93]

Hypothesis 3: War is produced when secession appears with competing groups and absence of democracy: Both Croatia and Bosnia-Herzegovina consistently fits this hypothesis. This could suggest that secession came unprepared on premature successor states. It could also

[92] Klemenĉiĉ and Žagar (2004:312)
[93] An interesting follow up to this study would be the causes to revolt in Macedonia, 1999-2000. Could this be due to institutional breakdown?

suggest that the legitimacy of the claim for secession suffered from a premature institutional state of development. It suggests that democracy is necessary to discharge the tension and uncertainty triggering ethnic competition. Could war occur because parts of the population wish to remain at status quo as long as the successor is just as institutionally inconsistent as the predecessor?

Hypothesis 4: When democracy is present at secession, internal secession is absent: Macedonia and Slovenia shows how secession does not provoke internal secession when democracy is present. The compactness of these units' nationalities is another possible explanation. But even though Slovenia was rather homogenous, Macedonia had a large minority which could have grabbed the opportunity to claim internal secession. However, even if this aspect suffers from limited diversity, it adds even further support *to the significance of the presence of competing groups*; i.e. ethnic grievances – because its absence produce an absence of internal secession.

As I am able to keep these hypotheses, I have gained empirical support for my theoretical proposition concerning the triangular relation between ethnic grievances in form of competing groups and fear of future dominance, secession policies and anocracy as regime type, and this relation's effect on civil war. I argue, in contrary to Collier and Hoeffler (2004) and Fearon and Laitin (2003), that ethnic grievances might lead to civil war and that this effect is best captured in relation with political circumstances rather than by the size of ethnic groups and degree of diversity. I find support in Cederman et al (2007; 2009; 2010) and the concepts of polarization (Ellingsen 2000; Reynal-Querol 2002). But as I previously have argued in favor of embracing causal complexity, there could be some explanatory power in the models of Collier and Hoeffler (2004) and Fearon and Laitin (2003) as well. Thus, I now turn to test these models' case-specific validity.

5.4 Comparison of Models

The models were fragmented into separate conditions in the crisp-set analysis. Diaspora, agricultural dependence, mountainous terrain and the alternative measure for hostile government were given attention in the analysis. The conditions related to primary commodity exports, the main component of Collier and Hoeffler (2004), were not applicable to the case of Yugoslavia. Especially the concern with oil; none of the federative units were oil producers. I suggested 'agricultural dependence' as a measure for dependence on primary sector, and thus also a proxy for the state of economic development. The absence of this condition is what is related to war in this case. This could arguably be due to the effect of

economic development on secession. Perhaps agricultural dependent regions are less likely to secede due to the premature economic development? This would anyway contradict the direction of Collier and Hoeffler's (2004) theoretical proposition; that such dependence would increase risk of war. Serbian hostility was also included in the analysis, and the aspect fits the theoretical intention of Collier and Hoeffler (2004). A revisit to the data would also show how Serb rebels in both Croatia and Bosnia-Herzegovina received support from Belgrade. The presence of diaspora was also part of the truth table solution (Table 5.8). Theoretically, this could be because a spread nationality could increase fear of ethnic 'disconnection' at secession. It could be interesting to pursue the effect of ethnic discontinuity in secessionist conflicts.

The most important component in Fearon and Laitin (2003) is GDP/Capita as a proxy for state strength. This condition did not make an impact on this analysis. Low GDP/Capita was not consistent in producing war, and high GDP/Capita was not consistent in producing the absence of war. The secession of Slovenia and Croatia could suggest that a relatively high GNP/Capita could lead to secession, but this could again be contradicted by Vojvodina. High GNP/Capita was nevertheless not necessary for secession, as neither Bosnia-Herzegovina nor Macedonia were members of the condition[94]. The most prominent component of Fearon and Laitin's model (2003) in this study is mountainous terrain. Mountainous terrain is not necessary for war, but its absence is sufficient for not producing war. This is according to Fearon and Laitin's theory, but instead of its presence causing war, its absence is causing peace.

Concerning Hegre et al (2001), I have based a lot of my theoretical proposal and my focus in the analysis on their conception of regime types. However, when applying their measures for regime change and conflict directly in my analysis, the results suggest that the measures are too aggregated to be case-specifically applicable. This has not been given much emphasis in my analysis, because, following Lieberson's (1985) principles of level of analysis, these measures are made at an aggregated level and have no immediate purpose on country level. Why then is not Collier and Hoeffler (2004) and Fearon and Laitin (2003) treated under the same circumstances? Because they point to specific conditions within cases prone to conflict, conditions we should be able to locate. I would argue that Hegre et al (2001) are more concerned with abstract developments on an aggregated level, and these principles and "laws" are not traceable to a disaggregated level in the same way as the components in Collier and Hoeffler's and Fearon and Laitin's models.

[94] GNP/Capita measures the product of each federal unit, while GDP would measure the aggregated product of Yugoslavia

Table 5.11 shows the consistency of the models when both the original measures and alternative measures are included in the solution. When trivial and contradicting conditions are reduced away, diaspora and Serbian hostility remains from Collier and Hoeffler (2004) model. It is far from consistent. Mountainous terrain, absence of rich country and the alternative measure for instability constitute the solution for Fearon and Laitin's model. This solution has lower consistency score than Collier and Hoeffler's model. From Hegre et al (2001) remain regime types and regional instability. I suggest that neither of these models are directly applicable to the case of Yugoslavia; either because the theoretical aspects do not fit, or the level of analysis does not allow for translating the models' attributes to a country level.

Intermediate solution, outcome: WAR		
Assumptions:		
1) Collier and Hoeffler	**2) Fearon and Laitin**	**3) Hegre. Ellingsen, Gates and Gleditsch**
Cold War (present) **oil (present)** **Exports/GDP (present)** **diaspora (present)** **Serbia Hostility (present)** **Agriculturual dependence (present)**	**Terrain (present)** **Domestic instability (present)** **Rich Country (absent)** **Regional Instability (present)**	**Democracy (absent)** **Anocracy (present)** **Conflict (present)** **Regional instability (present)** **Regime change (present)**
	Raw and Unique Coverage	**Consistency**
1) Diaspora*Serbia Hostility	**0.585005**	**0.635872**
2) Terrain*~Rich Country*Region instability	**0.585000**	**0.534247**
3) ~Democracy*Anocracy*Region instability	**0.625005**	**0.357141**

Table 5.11 Intermediate Solution, Collier & Hoeffler, Fearon & Laitin, Hegre et al

5.5 Summary

In this chapter, the proposed hypotheses from Chapter 2 have been tested with the method of fs/QCA. The crisps- and fuzzy-sets analyses derived data from the case-studies presented in Chapter 4. From a list of 50 variables, I produced a truth table solution for sufficient causes of war and found support for the claim that war can be seen as a function of competing groups, secession and anocracy. The analyses have arguably given empirical support to the proposed significance of ethnic grievances, secession policies and regime type in a triangular relation affecting the risk of civil war. By this, I would support the claim made by Cederman et al (2007; 2009; 2010) and by Horowitz (1985), among others, that ethnic grievances' impact on civil war is more likely to be related to the political context rather than the size of the ethnic groups or the degree of diversity.

6.0 Conclusion

In this thesis, I have set out to capture a triangular relation consisting of ethnic grievances, secession policies and regime type, and explore how these factors interact in having an effect on civil war. Ethnic grievances can determine civil war, and this condition is best captured in relation to regime type and secession – as these components interact with ethnic competition to produce fear of dominance. It would be a false move to try to implement this proposition onto any diverse society. My propositions should be restricted to states where an ethnic tension can be captured. I have argued that some societies are ethnically 'charged' from fear of dominance or ethnic competition and that a factor like democracy might mediate this tension. If democracy is present, secession can be executed and do not need to be discouraged as advocated by others. Figure 6.1 attempts to combine the theoretical propositions of Figure 2.1 with the observed causations in Figure 5.1. Different lines are indicators for observed causations, proposed interactions and unobserved causation – limited diversity.

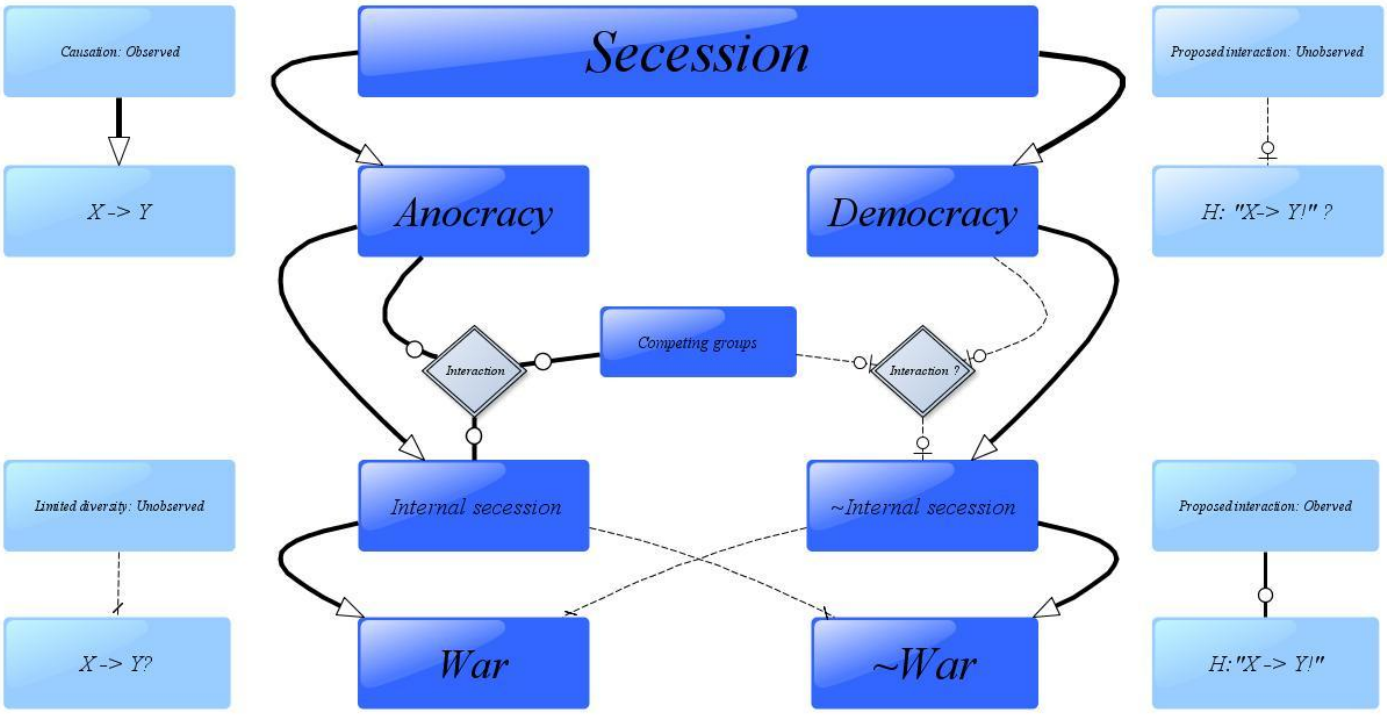

Figure 6.1 Ethnic grievances affecting civil war through the political context; Regime type and Secession policies

I have discussed how earlier attempts to capture ethnic grievances have failed and based my objections to these attempts on a critique of methodological choices; how the measures are conducted, what they are aimed to measure and the theoretical context they are charged with. I argue that the validity of Collier and Hoeffler's (2004) and Fearon and Laitin's (2003) attempts to capture grievances suffer from both level-of-analysis problems and from their use

of overtly simplistic proxies, and thus support the proposition that hypotheses of grievance for a long time were never really tested properly, only proxied.

In Chapter 2 I introduced and discussed the theory; civil war literature, the concepts of ethnic grievances and fear of dominance in relation with regime type and secession and conflicts. In Chapter 3, I introduced the fs/QCA methods, reviewed earlier applications and argued in favor of applying the method on disaggregated studies of civil war. This could increase our level of understanding of certain kinds of wars. In Chapter 4, I presented the within case-studies which constitute the data for the further analysis. In Chapter 5, I conducted crisp- and fuzzy-sets analyses to produce truth table solutions to war and the absence of war, and explored causations of war, secession and internal secession by conducting tests of necessary conditions. Finally, I evaluated the models of Collier and Hoeffler (2004), Fearon and Laitin (2003) and Hegre et al (2001) and found that most of their measures are too aggregated to be applied in specific cases, and although alternative measures provided support to some of the theoretical claims, the key components of their models received little support both substantially and theoretically.

7.0 Literature

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Appendix 1

Classifications of memberships applied in the analysis, Table 6.1 in Ragin 2000:156			
Crisp Set (1)	**Three-Value Fuzzy Set (2)**	**Five-value Fuzzy Set (3)**	**Seven-value Fuzzy Set (4)**
1= fully in	**1=fully in**	**1=fully in**	**1=fully in**
		0.75=more in than out	**0.83=mostly but not fully in**
			0.67=more or less in
	0.5=not fully out or in	**0.5=crossover: neither in nor out**	**0.5=crossover: neither in nor out**
			0.33=more or less out
		0.25=more out than in	**0.17=mostly but not fully out**
0=fully out	**0=fully out**	**0=fully out**	**0=fully out**

Appendix 2

Verbal label	*Degree of membership*	*Associated odds*	*Log odds of full membership*
Full membership	***0.993***	***148,41***	***5,0***
Threshold of full membership	***0.953***	***20,09***	***3,0***
Mostly in	***0.881***	***7,39***	***2,0***
More in than out	***0.622***	***1,65***	***0,5***
Crossover point	***0.5***	***1,00***	***0,0***
More out than in	***0.378***	***0,61***	***-0,5***
Mostly out	***0.119***	***0,14***	***-2,0***
Threshold of full nonmembership	***0.047***	***0,05***	***-3,0***
Full nonmembership	***0.007***	***0,01***	***-5,0***

Appendix 3

Case	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Variables	*Bosnia-Herz*	*Croatia*	*Kosovo*	*Macedonia*	*Montenegro*	*Serbia*	*Slovenia*	*Vojvodina*
War	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*
Serb minority 5%-49%	*1*	*1*	*1*	*0*	*1*	*0*	*0*	*0*
Croat minority 5%-49%	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Bosniak majority	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Bosniak majority <50%	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Serbian majority	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*1*
Serb majority <50%	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Croat majority	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*
Croat majority <50%	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Largest ethnic group > 50%	*0*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Largest ethnic group <50%	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Ethnic pluralism	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
ELF > 50	*1*	*0*	*1*	*1*	*0*	*0*	*0*	*1*
Multiple languages	*0*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Alternative tounge	*0*	*0*	*1*	*1*	*0*	*0*	*1*	*0*
Multireligious	*1*	*1*	*1*	*1*	*1*	*1*	*0*	*0*
Large fraction of nationality outside republic	*1*	*1*	*1*	*0*	*1*	*1*	*0*	*1*
Democracy	*0*	*0*	*0*	*1*	*0*	*0*	*1*	*0*
Anocracy	*0*	*1*	*1*	*0*	*1*	*1*	*0*	*1*
Autocracy	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Multiparty elections	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Majoritarian representation	*0*	*1*	*1*	*1*	*0*	*1*	*0*	*1*
Proportional representation	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*0*
State interference (<1991)	*0*	*1*	*1*	*0*	*0*	*0*	*1*	*1*
Secessionist (from federation)	*1*	*1*	*0*	*1*	*0*	*0*	*1*	*0*
Secessionist (internal)	*1*	*1*	*1*	*0*	*0*	*0*	*0*	*0*
Exports/GDP above 30%	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Relative Agricultural Dependence	*0*	*0*	*1*	*1*	*0*	*1*	*0*	*1*
Oil producer	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Significant Diaspora	*1*	*1*	*1*	*0*	*0*	*1*	*0*	*0*
COLD WAR	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Hostile Government B-H	*-*	*0*	*0*	*0*	*0*	*1*	*1*	*1*
Hostile Government Cro	*0*	*-*	*0*	*0*	*1*	*1*	*0*	*1*
Hostile Government Kos	*0*	*0*	*-*	*0*	*0*	*1*	*0*	*0*
Hostile Government Mac	*0*	*0*	*0*	*-*	*0*	*0*	*1*	*0*
Hostile Government Mon	*0*	*1*	*0*	*0*	*-*	*0*	*1*	*1*

Hostile Government Ser	*1*	*1*	*1*	*0*	*0*	-	*1*	*0*
Hostile Government Slo	*1*	*0*	*0*	*1*	*1*	*1*	-	*1*
Hostile Government Voj	*1*	*1*	*0*	*0*	*1*	*0*	*1*	-
GDP/Capita 1st interval	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
GDP/Capita 2nd interval	*1*	*0*	*1*	*1*	*1*	*0*	*0*	*0*
GDP/Capita 3rd Interval	*0*	*1*	*0*	*0*	*0*	*1*	*1*	*1*
Mountainous terrain	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Political instability (domestic)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Political instability (regional)	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Regime change (1980-1990)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Conflict before 1991	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Regime pre breakup: Democracy	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Regime pre breakup: Anocracy	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*
Regime pre breakup: Autocracy	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Appendix 4

Reynal-Querol (2002) measures polarization of linguistic and religious groups. This diversity should be captured. Ellingsen (2000) and Klos and McConnell (1974) are employed to specify the conditions within the aggregated "Yugoslavia"; which in Ellingsen's dataset would account for Serbia, Montenegro, as well as Kosovo and Vojvodina. The supplementation is done by exploring these four units' application of Albanian, Hungarian[95] and Slovene. *Ellingsen (2000) reports that 'Yugoslavia', alongside Macedonia, Croatia[96] and Slovenia are multi-linguistic, while Bosnia-Herzegovina is not.* Serbo-Croatian was the alternative language in Slovenia, whilst the largest alternative language in 'Yugoslavia' and Macedonia, was Albanian. Klos and McConnell (1974) add that for Kosovo, the majority tongue was Albanian, while the largest minority was Serbo-Croat, reflected in the ethnic composition (Kalvyas and Sambanis 2005; Klos and McConnell 1974). In Vojvodina, Serbian was the official language, but there were relatively large factions speaking Hungarian and other languages (Klos and McConnell 1974). In Serbia "proper", there were smaller factions of Albanian- and Slovene speakers. In Montenegro, a vast majority spoke Serbo-Croat, about 81.4%, while about 5.5% spoke Albanian (Klos and McConnell 1974:782;766). I interpret these data as sufficient for counting Croatia, Kosovo, Macedonia, Montenegro, Serbia and

[95] In Vojvodina, the application of Hungarian is added to reflect the ethnic composition given by Kalvyas and Sambanis (2005).

[96] The dataset has some problems with the largest minority in Croatia, while some sources report "Albanian"; I choose to interpret this as a temporal mistake, based on data from pre-disintegration. However, the Slovenian speaking faction in Croatia is sufficient to account Croatia as multi-linguistic (Klos and McConnell (1974). However, note that this deviates from Kalvyas and Sambanis' (2005) accountant of ethnic Slovenians in Croatia, separating linguistics from conventional ethnicity.

Slovenia as multi-linguistic, while the condition is absent in Bosnia-Herzegovina.

Appendix 5

In Montenegro, Albanians constituted 1.9 % and Muslims 3.9% - qualifying Montenegro as a multi-religious society as estimated Muslims exceed 5% of the population (Mønnesland 2006). In 1981, Ramet (2006) reports that Ethnic Muslims constituted for 78'080 of a total population of 585'000. In Serbia "proper", Albanians constituted for 3.5% and Muslims for 7.6% (Mønnesland 2006). In 1981, Muslims constituted 151'674 of 5'679'000 (Ramet 2006). In Kosovo, Albanians were in majority with 74% according to Mønnesland, and 90% according to Kalvyas and Sambanis. In addition, Mønnesland reports 2.9% Muslims. Ramet reports 58'562 Ethnic Muslims in Kosovo in 1981, of a total 1'595'000. In Vojvodina, however, Mønnesland reports only 0.2% Muslims and 0.1% Albanians. These numbers match with those of Kalvyas and Sambanis (2005). Ramet reports 4'930 Muslims of a total population of 2'029'000 in Vojvodina in 1981. Thus, Vojvodina, alongside Slovenia does not qualify as a multi-religious society

Appendix 6

By December 1971, a Croat nationalist movement had gained force and momentum with demands of increased Croat autonomy charged with certain anti-serbism. To settle the disputes, police and military forces entered Zagreb December 2nd (Mønnesland 2006:226). This is often referred to as "the Croatian spring" (Ramet 2006:91). In 1990, the Krajina-Serb rebellion in Kninska Krajina forced Croat authorities to intervene. This was met by interference from JNA, arguably on behalf of the Serb rebellion (Silber and Little 1997:92-104). This rebellion was followed by a similar Serbian movement in Slavonia, in Croatia – also met by JNA interference (Klemenĉiĉ and Žagar 2004:303ff).

For Kosovo, Tito's death led to a demand for republican status from a Kosovo Albanian nationalist movement which accumulated in 1981. Government reacted sharply, and deployed 30'000 troops. Reportedly, there were nine casualties (Mønnesland 2006:239). In 1988, Kosovo saw large demonstrations and counter-demonstrations. Belgrade sought to end strikes by force (Silber and Little 1997:62-69). Political leaders were arrested and demonstrations put down. The national assembly was besieged by tanks and forced to accept changes in the constitution removing Kosovo autonomy (Mønnesland 2006:247).

Vojvodina saw turbulence in the same period as Kosovo. The political leaders pleaded Belgrade to aid to end the turmoil known as "The Yoghurt Revolution". Milosevic demanded

the regime's resignation in return and made them accept the reformed constitution and thus managed to crumble Vojvodina's autonomy and increase Serbian field of power (Silber and Little 1997:58ff). Montenegro also saw large demonstrations and attempts at coups through 1988-89, arguably directed and backed by Belgrade – with the ultimate result of Serbia securing Montenegrin support in the federative presidency. Still, direct interference by JNA and central government is not reported (Silber and Little 1997:61).

During the "Slovene spring" in 1988, JNA interfered in the Slovene political scene, taking over the investigation of Slovene nationalists and arresting opponents at own will. This violation of republic autonomy, arguably qualifies to state interference (Silber and Little 1997:48-57). There are no specific reports of state interference in Macedonia and Bosnia-Herzegovina.

Appendix 7

The Primary Commodity Exports-thesis is disaggregated in three components; exports/GDP, oil and agricultural dependence. Since it is complicated to find data covering the units' national exports ratio, an estimate of the units' contribution to Exports/GDP have to do. This will be unproblematic if all the ratio's are below the threshold interval, because the 'Primary Commodity Exports' is a subset of 'Total Exports', thus 'Primary Commodity Exports' must be ≤ 'Total Exports'. The major problem in this case is to measure GDP, commodity exports and production at a national level (GNP). Even Collier and Hoeffler had problems with the GDP sample in the case of Yugoslavia (Collier and Hoeffler 2004:567). The variable is thus operationalized as "Exports/GDP", and estimated from data presented by Mønnesland (2006:396) and data extracted from Teodora.com and CIA Factbook[97]. The variable is constructed from the federative units' exports-contributions, relative to their total contribution to Yugoslavian GDP. All relevant data is presented in the tables.

	GNP	**Exports**
Yugoslavia*	**$129,5 billion**	**$13,1 billion**
1989		
Source: Theodora.com; CIA Factbook		

[97] http://www.theodora.com/wfb1990/yugoslavia/yugoslavia_economy.html, Accessed 03.15.11.

	% of Yugoslavia's *	
	Exports	**GDP**
Slovenia	**30,2**	**16,5**
Croatia	**20,4**	**25**
Bosnia-Herzegovina	**14,4**	**12,9**
Montenegro	**1,6**	**2**
Macedonia	**4**	**5,8**
Serbia "proper"	**20,7**	**25,6**
Vojvodina	**8,3**	**10,3**
Kosovo	**1,2**	**2,1**
1990. Source: Mønnesland 2006:396		

	Estimated ratios
	Exports/GDP
Slovenia	**18,52 %**
Croatia	**8,25 %**
Bosnia-Herzegovina	**11,29 %**
Montenegro	**8,09 %**
Macedonia	**6,98 %**
Serbia "proper"	**8,18 %**
Vojvodina	**8,15 %**
Kosovo	**5,78 %**

When applying the 30-35% interval as cutting point between absent and present, the variable "exports/GDP" is not present in any of the units. Hence, there is no reason to expect primary commodity exports/GDP to have neither reached nor surpassed 33%.

Appendix 8

The economic factors are important in the Yugoslav case, regardless of Collier and Hoeffler's (or Fearon and Laitin's) findings. The economic development might have been crucial in the definition of the ethno politics – as pointed by John Allcock:

> *"The steady republicanisation of the economy, however, meant that the commitment of liberals to widening the scope of market forces came to be given a nationalist expression, and the case for accelerated economic modernization came to be represented (...) as a matter of the adverse effects of the power of "Belgrade", working together with the "backward South" (Bosnia-Herzegovina, Macedonia, Montenegro), upon the economic development of the "advanced" North (Croatia and Slovenia). Economic modernization thereby came to be linked generally to the forces*

of nationalism which the Tito regime had worked so hard since 1945 to defeat" (Allcock 2000:90).

Generally, Yugoslavia had by 1971 seen an overall fall in the population engaged in agriculture, a fall in the rural population and an increase in the urban population (Allcock 2000:89). During the forging of the regime, and when the units' were under previous empires, the export-based economy was crafted around primary products. What separated the units' form of production was the form of the agricultural *products*, not the dependence on the agricultural *sector*. Later, the regime turned away from agricultural exports and towards heavy industry (Allcock 2000:101).

Appendix 9

Of several reasons the Yugoslavian economy might very well have been dependent on primary commodities even though it was not evident through exports rates. Thus, the study should also account for domestic dependency on the agricultural sector. The table shows employment in agriculture.

	Employed in agriculture, %
Slovenia	**9,4**
Croatia	**15,2**
Bosnia-Herzegovina	**17,3**
Montenegro	**13,5**
Macedonia	**21,7**
Serbia "proper"	**27,6**
Vojvodina	**19,9**
Kosovo	**24,6**
	Source: Mønnesland 2006:396

From these data, one could construct measures of relative agricultural dependence based on pairwise analyses. By this approach the most dependent unit in a pair should be the most prone to war. The next table shows the pairwise relationships among the states. The variables are constructed as follows: One unit's employment ratio is divided with each of the other units' employment rates. Where 'units' value' ≥ 1.0, the observed unit is MORE dependent on agriculture than its partner. Where 'units' value' ≤ 1.0, the observed unit is LESS dependent on agriculture than its partner.

Measure of relative agricultural dependence								
	Bosnia-Herzegovina	Croatia	Kosovo	Macedonia	Montenegro	Serbia "proper	Slovenia	Vojvodina
Bosnia-Herzegovina		1,138158	0,703252	0,797235023	1,281481481	0,626811594	1,840426	0,8693467
Croatia	0,878612717		0,617886	0,700460829	1,125925926	0,550724638	1,617021	0,7638191
Kosovo	1,421965318	1,618421		1,133640553	1,822222222	0,891304348	2,617021	1,2361809
Macedonia	1,25433526	1,427632	0,882114		1,607407407	0,786231884	2,308511	1,0904523
Montenegro	0,780346821	0,888158	0,54878	0,622119816		0,489130435	1,43617	0,678392
Serbia "proper"	1,595375723	1,815789	1,121951	1,271889401	2,044444444		2,93617	1,3869347
Slovenia	0,543352601	0,618421	0,382114	0,433179724	0,696296296	0,34057971		0,4723618
Vojvodina	1,150289017	1,309211	0,808943	0,917050691	1,474074074	0,721014493	2,117021	
Source: Mønnesland 2006:396								

More dependent on agriculture than (MDEPONAG)	*Cases - units of observation*							
	Bosnia-Herzegovina	*Croatia*	*Kosovo*	*Macedonia*	*Montenegro*	*Serbia "proper"*	*Slovenia*	*Vojvodina*
MDEPONAG Bosnia-Herz.	-	*0*	*1*	*1*	*0*	*1*	*0*	*1*
MDEPONAG Croatia	*1*	-	*1*	*1*	*0*	*1*	*0*	*1*
MDEPONAG Kosovo	*0*	*0*	-	*0*	*0*	*1*	*0*	*0*
MDEPONAG Macedonia	*0*	*0*	*1*	-	*0*	*1*	*0*	*0*
MDEPONAG Montenegro	*1*	*1*	*1*	*1*	-	*1*	*0*	*1*
MDEPONAG Serbia "proper"	*0*	*0*	*0*	*0*	*0*	-	*0*	*0*
MDEPONAG Slovenia	*1*	*1*	*1*	*1*	*1*	*1*	-	*1*
MDEPONAG Vojvodina	*0*	*0*	*1*	*1*	*0*	*1*	*0*	-
(Souce: Mønnesland 2006:396)								

Next, there is made a basic summary of each unit's ratio of more/less dependence on agricultural sector, by dividing the amount of pairs where the unit is more dependent by the total amount of pairs where the unit appears. This gives a 0-1 figure. To be more "in than out" in relative dependence, the unit needs a value ≥ 0.5. The relative agricultural dependent units are thus Kosovo, Macedonia, Serbia and Vojvodina.

	Cases - units of observation							
Relative agricultural dependence*	Bosnia-Herzegovina	Croatia	Kosovo	Macedonia	Montenegro	Serbia "proper"	Slovenia	Vojvodina
Relative agricultural dependence	0,428571429	0,285714	0,857143	0,714285714	0,142857143	1	0	0,5714286
Relative agricultural dependence >0,5 = Present (1)	0	0	1	1	0	1	0	1
**(presense/absense of MDEPONAGi)*								
(Souce: Mønnesland 2006:396)								

Appendix 10

The matter of diaspora in the case of Yugoslavia is as tricky and complex as the ethnic composition and the distribution of nationalities throughout the republics. How should the variable be measured when analyzing at state-level? It becomes problematic when translating continuous variables into dichotomous variables; where to put the threshold for membership? What is a significant diaspora?

This study chose to relate "diaspora" and "hostile government" to two levels of external support; non-state actors and state actors *within* Yugoslavia. Meaning, if a federative unit has a sufficient proportion of its' national group living in another unit, this is counted as "significant diaspora". If one unit continuously sides against another unit, this counts as hostility. By restricting the actors to the Yugoslavian units, we make sure that the diaspora accounted for is not a reflection of the conflict, but emigrated before the conflict. Also, by keeping hostile governments within Yugoslavian units, it is more approachable to operate on the basis of the units' policies.

To stay true to what have been defined as the threshold for a significant proportion of population, it could be argued that the "diaspora"-variable is present if a unit has more than 5% of its nationality within the other units. But we wish to distinguish the diaspora variable from the "compact nationality" variable, thus the threshold is lifted from 5% to 10%.

% of nationality in other units		
Bosnia-Herzegovina	**17,4**	*
Croatia	**18**	*
Macedonia	**4,4**	
Montenegro	**34,2**	*
Kosovo	**35,1**	*
Serbia	**24,6**	*
Slovenia	**1,8**	
Vojvodina	**9,7**	

(Mønnesland 2006:396). *Above 10%=Present

ETHNIC DIVERSITY, revisited							
Nationalities - fractions in percents							
	Serbs	Muslims	**Croats**	**Montenegrins**	**Albanians**	**Slovenes**	**Macedonians**
Bosnia-Herzegovina	31,40	**43,70**	**17,30**				**0,00**
Croatia	12,20	**0,90**	**78,10**	**0,20**	**0,30**	**0,50**	**0,10**
Macedonia	2,20				**21,00**		**64,60**
Montenegro	9,30	**14,60**		**61,80**	**6,60**		
Serbia "proper"	**87,30**						
Vojvodina	**57,20**	**0,00**	**4,80**	**2,20**	**0,00**	**0,80**	
Kosovo	**10,00**				**90,00**		
Slovenia	**2,40**	**1,40**	**2,70**	**0,20**	**0,20**	**87,60**	**0,20**

Theoretically, those units with present diaspora will be the most prone to enter conflict. Serbia, with submissive units Kosovo and Montenegro, Croatia and Bosnia-Herzegovina, all participated in conflict, one way or the other. The four ethnicities/units that surpassed the threshold at 10 % living abroad was Bosnians (Muslims), Croats, Montenegrins, Kosovo Albanians and Serbs.

If we are to keep the threshold at 10% of a population, in order to meet the expected requirements of cohesion and influence, Serbs are a relevant group in Bosnia-Herzegovina, Croatia, Vojvodina and Kosovo. Bosnian Muslims are only a relevant group in Montenegro. Croats are relevant in Bosnia-Herzegovina. Montenegrins are too spread outside Montenegro's borders for sufficient cohesion (theoretically off course) and Albanians are a relevant minority in Macedonia. From this two-step analysis, it is hereby argued that the variable "Significant Diaspora" should be present in Bosnia-Herzegovina, Serbia, Croatia and Kosovo, to account for the spread of their "home nationality".

Hostile governments are located by a pairwise analysis. The variable is based on Ramet's (1992) account of Alliance Behavior among the Yugoslav Republics, 1961-90 (Ibid 281-285). This data counts all sidings in federative disputes and gives an account of contradicting policies and reveals "opponents" among the units. When analyzing, the data is narrowed down to 1980-90. The data accounts for alliance behavior in 11 disputes in that period. It is operationalized as follows: if Serbia sides *against* Slovenia, these units are "hostile" in that dispute. The frequency of opposing couples is then measured against the total amount where the units both appear in a pair. Maximum possible is 11 pairs, as there are 11 disputes. Example; Slovenia's relative hostility towards Montenegro is measured by how many times they side against *each other* in the disputes they *both* appear in. This gives a 0-1 ratio for all couples. The value ≥ 0.6 qualifies for "hostile government$_i$".

Sided against each other	Bosnia	Croatia	Kosovo	Macedonia	Montenegro	Serbia	Slovenia	Vojvodina	Total
Bosnia-Herzegovina		4	2	3	2	5	5	4	8
Croatia	4		1	2	7	9	1	3	10
Kosovo	2	1		0	2	4	2	2	5
Macedonia	3	2	0		2	3	4	2	6
Montenegro	2	7	2	2		3	8	4	9
Serbia	5	9	4	3	3		9	1	10
Slovenia	5	1	2	4	8	9		3	11
Vojvodina	4	3	2	2	4	1	3		5

Total appearances together	Bosnia	Croatia	Kosovo	Macedonia	Montenegro	Serbia	Slovenia	Vojvodina	Total
Bosnia-Herzegovina		8	5	6	8	8	8	5	8
Croatia	8		5	5	9	9	10	5	10
Kosovo	5	5		4	5	5	5	5	5
Macedonia	6	5	4		6	6	6	4	6
Montenegro	8	9	5	6		9	9	5	9
Serbia	8	9	5	6	9		10	4	10
Slovenia	8	10	5	6	9	10		5	11
Vojvodina	5	5	5	4	5	4	5		5

Opposing-ratio	Bosnia	Croatia	Kosovo	Macedonia	Montenegro	Serbia	Slovenia	Vojvodina
Bosnia-Herzegovina		0,5	0,4	0,5	0,25	0,625	0,625	0,8
Croatia	0,5		0,2	0,4	0,777777778	1	0,1	0,6
Kosovo	0,4	0,2		0	0,4	0,8	0,4	0,4
Macedonia	0,5	0,4	0		0,333333333	0,5	0,666667	0,5
Montenegro	0,25	0,777778	0,4	0,333333333		0,333333	0,888889	0,8
Serbia	0,625	1	0,8	0,5	0,333333333		0,9	0,25
Slovenia	0,625	0,1	0,4	0,666666667	0,888888889	0,9		0,6
Vojvodina	0,8	0,6	0,4	0,5	0,8	0,25	0,6	

With the threshold at ≥0.6 to qualify as present, the following truth table indicates which states receive "present" at what "hostile couple":

	Bosnia	Croatia	Kosovo	Macedonia	Montenegro	Serbia	Slovenia	Vojvodina
Hostile Government Bosnia-Herz		0	0	0	0	1	1	1
Hostile Government Croatia	0		0	0	1	1	0	1
Hostile Government Kosovo	0	0		0	0	1	0	0
Hostile Government Macedonia	0	0	0		0	0	1	0
Hostile Government Montenegro	0	1	0	0		0	1	1
Hostile Government Serbia	1	1	1	0	0		1	0
Hostile Government Slovenia	1	0	0	1	1	1		1
Hostile Government Vojvodina	1	1	0	0	1	0	1	

Also, it is interesting to see that those couples with highest frequency reveal a polarization between Croatia and Slovenia on one side, against Serbia and Montenegro on the other. The most allied couples are Croatia and Slovenia, and Serbia and Vojvodina.

Appendix 11

Fearon and Laitin (2003) refers to political instability as minor changes in regime, but not necessarily sufficient for actual regime *changes*. This is supposed to mirror events that have lead to a disorganized and weak centre. If events took place that destabilized the regions, this could qualify as political instability at a disaggregated level, even though it did not provoke a sufficient change in the federative center's regime value as given by the Polity IV measure. Kosovo and Vojvodina definitely saw a change of political conditions when Serbia unconstitutionally withdrew their autonomy. As in these two, Montenegro saw large demonstrations and attempts at coup d'état in the republic presidency, the second attempt even succeeded (Silber and Little 1997:58-69). In Croatia, there were rebellions in Knin/Krajina, with a capital-backed claim for autonomy for the region, and secessionist attempts in Slavonia (Ramet 1999:61). All units introduced multiparty elections in 1990 and the League of Communists lost hegemony in most republics (Klemenĉiĉ and Žagar 2004:288ff; Mønnesland 2006:261; Ramet 2006:356-359).

Appendix 12

Variables	**WAR**	**~WAR**
Secession	***1***	***1***
Serb minority 5%-49%	***1***	***0***
Democracy	***0***	***1***
Anocracy	***1***	***0***
Secessionist (internal)	***1***	***0***
Diaspora and Large fractions of nationality outside republic	***1***	***0***

'War' and '~War' in 'Secession'

Negated conditions for ~War →War	**Negated conditions for War → ~War**
Croats (2/2 cases)	***~Serbian minority (4/6 cases)***
~Positive Ethnic Majority, non-Croat, non-Bosniak (2/2 cases)	***~Secession (4/6 cases)***
~Multiple languages (1/2 cases)	***~Internal secession (5/6 cases)***
Mountainous terrain (1/2 cases)	***Agricultural Dependence (4/6 cases)***
	~ Diaspora (4/6 cases)
	~Serbian hostility (3/5 cases)

Negated conditions

Appendix 13

	Cases	Value
WAR	***2/8***	***0,25***
Secession	***4/8***	***0,50***
Internal secession	***3/8***	***0,38***
Serbian minority	***4/8***	***0,50***
Croats (Croat minority OR majority)	***2/8***	***0,25***
Diaspora (Sig.Diaspora AND Large fraction outside republic)	***4/8***	***0,50***
Serbian hostility	***5/7****	***0,71***
~Agricultural dependence	***4/8***	***0,50***
Croat majority	***1/8***	***0,13***
Bosniak majority	***1/8***	***0,13***
Negative majority	***1/8***	***0,13***
Anocracy	***6/8***	***0,75***
Mountainuos terrain	***1/8***	***0,13***
~Multiple languages	***1/8***	***0,13***

*Serbian hostility is not measured for Serbia, thus only in seven cases

	Cases	Value
~WAR	***6/8***	***0,75***
~Internal secession	***5/8***	***0,63***
~Serbian minority	***4/8***	***0,50***
~Croats (Croat minority OR majority	***6/8***	***0,75***
~Dispora	***4/8***	***0,50***
~Serbian hostility	***3/7****	***0,43***
Agricultural dependence	***4/8***	***0,50***
~Croat majority	***7/8***	***0,88***
~Bosniak majority	***7/8***	***0,88***
Positive majority	***7/8***	***0,88***
Democracy	***2/8***	***0,25***
~Mountainuos terrain	***7/8***	***0,88***
Multiple languages	***6/8***	***0,75***

*Serbian hostility is not measured for Serbia, thus only in seven cases

Appendix 14

Conditions accociated with War	Conditions accociated with ~War
Secession, state AND internal	***~Iinternal secession***
Serbian minority	***~Serbian minority***
Croats	***~Croats***
Diaspora	***~Diaspora***
Serbian Hostility	***~Serbian Hostility***
~Agricultural dependence	***Agricultural dependence***
Croat/Bosniak, OR negative majority	***Non-Croat/Bosniak, AND positive majority***
Anocracy	***Democracy***
Mountainous terrain	***~Mountainous terrain***
~Multiple languages	***Multiple languages***