

Endogenizing Power-Sharing After Ethnonationalist Civil War*

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Abstract

Recent research has come to question power-sharing arrangements as a potent means to secure peace after ethnonationalist civil war. However, because such arrangements are adopted *deliberately* by the belligerents not only as the result of conflict, but also in direct *anticipation* of their prospects for peace, they must be considered endogenous to conflict. This suggests that power-sharing occurs empirically where peace is most fragile to begin with. Consequently, if not addressed properly, the causal effect of power-sharing is likely to be underestimated. I therefore model the accommodation of ethnic grievances and the recurrence of conflict as joint and interdependent processes. I apply the model to disaggregated data at the level of ethnic groups that captures various types of power constellations, including power-sharing agreements. Against criticism put forward by the literature, the results suggest that once endogeneity is accounted for, power-sharing indeed can serve as an effective tool to prevent recurrent violence.

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1 Introduction

Iraq, Afghanistan, Chechnya – conflicts fought in the name of ethnic groups are frequently among the longest, most violent and difficult to resolve in the long term (Wucherpfennig et al., 2010; Lacina, 2006; Chapman and Roeder, 2007). Indeed, one in four ethnic groups involved in ethnonationalist conflict will experience renewed violence within ten years following the settlement of a previous episode of conflict. This raises the important question under which conditions the recurrence of civil war can be contained effectively. In particular, can political arrangements help mitigate the risk of recurrence of such conflicts? Recent scholarship is skeptical.

In this paper I revisit the role of such political arrangements in the post-war environment, ethnic power-sharing in particular. Power-sharing has recently been severely criticized, suggesting that its disadvantages outweigh its benefits (Rothchild and Roeder, 2005), and that in direct comparison, victories tend to yield more stable peace (Toft, 2010). I argue that these conclusions are premature for two reasons. First, they are based on conceptualizations that focus on a single “snapshot”, namely the end of the war or the wake of peace. This disregards the dynamic context within which the effect of political arrangements must be evaluated as a response to ethnonationalist claims. Since ethnonationalist civil war is explicitly defined as violent struggle over control of the state, either fully or in some limited territory (Sambanis, 2004), it is crucial to assess the degree of control the belligerents were able to exercise prior to the war, and whether fighting altered their power position. In other words, rather than focusing on post-war conditions

alone, I advocate a dynamic analysis of change that tracks the fate of the belligerents over time.

Second, I argue that where change occurs, it is generated endogenously to recurrent conflict. Since war termination (short of complete eradication of the opponent) implies that both parties prefer peace over continued fighting, the post-war constellation of access to state power is also the result of anticipation of its prospects for peace. Put differently, changes in the political constellation as the result of war will occur where the chances for peace are slimmest to begin with, that is where they are anticipated to be essential for peace. Consequently, post-conflict arrangements are endogenous to future conflict, and thus their emergence and consequence for peace must be treated as correlated processes (cf. Christin and Hug, 2003, 2006).

This endogeneity makes it difficult to evaluate the causal effect of power constellations on the recurrence of war. In the empirical section of the paper I therefore present a first attempt to address this methodological challenge explicitly. Against the critiques, I find that once political constellations that focus on balancing, sharing, and improving the political conditions on the ground are properly accounted for as endogenous, they exert a strong effect on securing post-war peace. In fact, I find that power-sharing secures peace at least as effectively as does victory by either rebels or government.

The paper is organized as follows. In section 2 I begin with a literature review on the issue of civil war recurrence with a particular focus on war outcomes and political arrangements in the post-conflict setting. Criticizing the literature for being overly static and largely inconclusive, section 3 develops the theoretical argument that power-sharing in post-conflict environments is

likely to be highly endogenous to the prospects of peace. I then consider four factors that are likely to drive political concessions, such as power-sharing following ethnonationalist war. Taking the endogeneity argument seriously, section 4 introduces empirical data that allows for a dynamic tracking of the political fates of ethnic groups and describes my the seemingly unrelated bivariate probit as my main method. Section 5 carries out the empirical estimation, finding strong evidence that the effect of power-sharing following civil war is indeed endogenous, and that failure to take this into consideration is likely to underestimate its causal effect. Section 6 concludes.

2 Civil War Recurrence

Civil war recurrence is a frequent phenomenon (Walter, 2004), in particular in the case of ethnic conflicts (Kreutz, 2010; Cederman, Wimmer and Min, 2010, though see Quinn, Mason and Gurses 2007; Walter 2004). Whereas recent research has found that ethnicity—when charged with nationalist grievances—not only makes conflict onset more likely (Cederman, Wimmer and Min, 2010), but also provides the motivations necessary to support long fighting durations (Wucherpfennig et al., 2010), the literature on how to prevent such violence during a post-conflict period is less clear. This paper aims to contribute to filling this gap in the literature.

In any case, the apparent frequency of civil war recurrence has given rise to a growing literature that assesses the conditions under which recurrent violence can be prevented effectively. In particular, the analytical focus has been on either on (1) how civil wars ended, or (2) the political arrangements

following it. Examples of the former include military victory, ceasefires, and negotiated agreements, the latter include power-sharing, partition, and democratization. While the focus of this paper lies on power-sharing, I briefly review these two related literatures, criticize the literature where applicable, before laying out my own approach.

Focusing on modes of termination, Toft (2010) aims to demonstrate that especially rebel victory leads to a more durable peace, a finding that roughly matches Licklider (1995).¹ Wagner (1995) was the first to articulate a possible theoretical mechanism for this finding: arguing that organization is the critical resource necessary for civil war, victory has the advantage that it allows the complete destruction of the opponent's organization, thus removing the necessary means for mobilization. Although the argument is theoretically compelling, it is not without problems, especially in the case of ethnonationalist conflicts. First, it is not clear whether a group's organization can really be destroyed to the point that it can no longer mobilize. For example, we know that DDR (demobilization, disarmament, and reintegration) is more than a difficult task, not least because the human capital of fighting know-how is hard to destroy in the first place. Moreover, it is also well known that civil war commonly leaves a path-dependent impact on local military markets: excess weapons, such as Kalashnikovs, in post-war environments lead to widespread availability and low prices, which in turn makes organization as the critical resource feasible. Thus, since many civil wars are fought as asymmetric insurgencies using such light arms (Fearon and Laitin, 2003), the

¹Quinn, Mason and Gurses (2007) and Kreutz (2010) find that *government* victories reduce the likelihood of recurrence.

destruction of an opponent's organization may be difficult, if not impossible, in practice.

Second, the Wagner hypothesis focuses entirely on the opportunities to fight, but leaves out the role of grievances driving conflicts altogether. Indeed, from the viewpoint of emotions, losers should be inclined to seek revenge (Petersen, 2002). In any case, defeat is unlikely to soothe ethnonationalist grievances, especially since such grievances manifest themselves in everyday life. If conflict is considered a means to an end, prevailing grievances can then at best be suppressed temporarily from becoming effective again.

In addition, promoting victories has obvious ethical implications in that fighting (killing) must endure until one party cries uncle. Terminating war short of ultimate defeat may therefore save lives, but the question remains whether the peace produced by agreements is less stable and could eventually lead to even more casualties because violence cannot be contained in the long run. Hartzell and Hoddie (2007) therefore analyze the contents of negotiated settlements, finding that the more aspects of power-sharing along various dimensions are contained in such settlements, the better the prospects for peace.

Arguing that it is too early for a judgement call, Jarstad (2008) points out some of the weaknesses of power-sharing, such that it may invite spoiler-groups, foster radicalism, impede democratization, and lead to international dependence (see also Rothchild and Roeder, 2005). However, even though the empirical validity of these concerns is far from clear, least because the authors do not compare relative impacts of power-sharing vis-à-vis modes of termination, especially Chapman and Roeder (2007); Rothchild and Roeder

(2005) make the case that power-sharing agreements seem to break down easily and lead to renewed violence more often than does military victory.

Chapman and Roeder (2007); Rothchild and Roeder (2005) and Kaufmann (1996, 1998) therefore advocate a different strategy to deal with ethnonationalist conflict: partition. According to the argument, conflict hardens ethnic identities to the point where cooperation becomes difficult and the underlying conflict impossible to resolve. Separating the conflict parties from one another physically, so the argument goes, is therefore the only feasible way of preventing renewed violence. Moreover, in the context of nation-building, partition presumably facilitates the process of nation-building.

Rothchild and Roeder (2005) argue that all other viable alternatives, in particular power-sharing, are likely to be fragile and the necessary conditions for success, such as strong governmental institutions, unlikely to be met in practice. Against these claims, Sambanis and Schulhofer-Wohl (2009) show that the empirical evidence in favor is weak. Reanalyzing the dataset by Chapman and Roeder (2007), they show, critically, that partition is actually no more effective than autonomy.

In sum, there remains strong ambiguity with regard to the type of advice that scholars should give to practitioners in the midst of ethnonationalist conflict. Given the strong implications that could potentially cost the lives of thousands, we need further evidence before calling the debate closed. In the next session, I therefore turn to the theoretical underpinnings of ethnonationalist conflict.

3 A Dynamic Perspective on Recurrence

3.1 Learning from Clausewitz

I begin by positioning the recurrence of war within a larger bargaining process (see, e.g. Reiter, 2003).² Bargaining models are built around the presumption that coordination between two or more actors with conflicting preferences allows for higher returns than if they do not coordinate their actions (Wagner, 1994, 595). For the present purposes, the bargaining process can be separated into three periods. It starts with (1) the onset of conflict, followed by (2) a phase of fighting that eventually comes to an end. War termination, in turn, initializes (3) a period of post-war peace, which finally does or does not lead to recurrent conflict.

This broad conceptualization is in line with von Clausewitz, who famously argued that “war is the continuation of politics by other means” (Clausewitz, 1984). At this point several conceptual and definitional questions arise. According to the definition, conflict is not the end of bargaining, but a continuation thereof. Moreover, conflict occurs to achieve political goals. These are a reasonable assumption in the context of ethnonationalist conflicts; ethnic groups fight because of competing ethnonationalist claims to state power. While such claims constitute a motivational aspect, they are by no means sufficient, but result in fighting only where the necessary opportunity arises. For example, Wucherpfennig (2010) shows that ethnic groups are most likely to fight when they are both disadvantaged by the political status quo *and*

²Whereas most of the literature deals with the case of interstate war, the model carries over to the case of civil war without loss of generality, unless stated otherwise.

roughly at parity in terms of bargaining power with the government.

With regard to recurrence, by implication of Clausewitz' definition, peace following war is the return from politics by 'other' means to 'normal' or 'conventional' means. Thus, whereas the decision to start fighting entails that the expected utility of fighting exceeds that of finding a peaceful agreement, war termination implies that both parties have come to value peace more than continued fighting. More precisely, according to the bargaining model of war, the anticipated consequences of the potential conduct of warfare inform the decision whether to initiate war in the first place. Reversing this logic implies that the anticipated consequences of settlement should equally inform the decision to stop fighting. As Clausewitz (1984, 92) explains,

“war is not an act of senseless passion but is controlled by its political object, the value of this object must determine the sacrifices to be made for it in magnitude and also in duration. Once the expenditure of effort exceeds the value of the political object, the object must be renounced and peace must follow.”

Wittman (1979, 744) offers a similar interpretation when arguing that

“[a]n agreement (either explicit or implicit) to end a war cannot be reached unless the agreement makes both sides better off; for each country the expected utility of continuing war must be less than the expected utility of the settlement.”

Several important implications arise from Clausewitz' and Wittman's insights. First, if war is considered as a means to an end, then the stakes

determine the process of war termination (see also Blainey, 1988). Specifically, the higher the stakes, the greater the probability that large costs will be tolerated and fighting is continued, which may explain why civil wars are notoriously difficult to end when ethnonationalist claims are at stake, since these define the immediate living conditions of the belligerents.

Second, any mode of termination short of complete eradication of the opponent is a bargaining outcome. This includes settlements negotiated, at the bargaining table, including peace agreements, as well those “negotiated” entirely on the battlefield, i.e. victories. Thus, I follow Goemans (2000) who defines war termination broadly as the tacit or formal agreement and implementation of decisions to stop fighting on the battlefield. Goemans (2010) points out that “in the bargaining model of war and war termination, “victory” crucially is not a military but a political outcome, where a player gets a better deal at the bargaining table.”

Again this is in line with Clausewitz who had distinguished between total war and limited war, but warned that total war, i.e. the complete eradication of the opponent, is empirically extremely rare. With the exception of some instances of attempted large-scale genocide, for example in Rwanda, this is an adequate description of ethnonationalist conflicts.

Third, Wittman emphasized that in limited wars, war termination requires *both* parties to be better off by termination. In other words, war termination is not a unilateral, but a bilateral act, an argument that was recently brought back to our attention by Goemans (2000, 2010). This insight is crucial for the recurrence of conflict, since it implies that at least initially *both* parties prefer peace over reverting to war. Thus, given that in the civil

war context the combatants will have to keep living in close contact with one another beyond the conflict, the combatants should reach a bargaining outcome based on expectations about living together in future.

The important implication of this line of argument is that the expected risk of recurrence determines how much both parties, including the government and/or the winner, will have to invest to secure it. While maximization of power is an important component of a group's utility, concessions towards the other party are therefore most likely to be observed where peace is most fragile to begin with (see also Werner, 1999*b*, 914). In short, we are likely to observe political constellations that focus on balancing, sharing, and improving the political conditions on the ground in exactly those cases where there is a high *ex ante* risk of recurrence. Institutions that aim at sharing rather than monopolizing power are therefore likely to be endogenous to recurrent conflict.

Consequently, whereas Hartzell and Hoddie (55 2007, emphasis added) argue that “[f]actors defining both the nature of the conflict as well as the domestic and international wartime environments determine whether combatants will view the creation of power-sharing [...] as both *desirable and possible*”, the point is rather under which conditions power-sharing is seen as *necessary* by the belligerents.

Additionally, since the value of the ‘political object’ (see quote above) is conditional on the stakes, its value in the post-conflict environment will be partially determined by how much has been achieved. Put differently, (endogenous) concessions aimed at reducing the risk of recurrence should be judged dynamically, that is to the degree that the object(ive) has been

achieved.

Finally, with regard to estimating their causal effect using empirical data, the implication is that we are likely to obtain biased estimates if the endogeneity is not properly addressed. Specifically, the theoretical prediction that such institutional change is likely to occur where recurrence is probable to begin with informs us about the direction of this bias. I therefore hypothesize that neglecting the endogeneity is likely to *underestimate* the causal effect of ethnic power-sharing.

3.2 Endogenous Institutions: The Causes of Concessions and Power-Sharing

So far, I have argued that concessions are most likely when the risk of recurrence is deemed high to begin with. With regard to ethnonationalist conflict, this begs the question under which conditions governments are most likely to share power and grant concessions to ethnonationalist claims by ethnic groups. Without any claim of completeness, in this section I therefore describe four factors that are likely to contribute to power-sharing.

1. *Power Parity*. A well established literature on interstate conflict and a relatively young literature on intrastate conflict argue that information problems in combination with dissatisfaction are a major cause of conflict (Powell, 1996, 1999; Werner, 1999*a*; Wucherpfennig, 2010). While the latter can be taken for granted (we did observe a previous conflict after all), the former is argued to be most pronounced under an equal distribution of observable power. In other words, when the state

and the challenger are roughly equally powerful, i.e. at power parity, information failure is likely (Walter, 2009*a*). Thus, at observable power parity, the belligerents will deem the risk of recurrent conflict as high. From a different perspective, power parity can be assumed to lead to stalemated wars than under asymmetry. Zartman (2000) has famously argued that stalemated wars “ripe” for resolution, giving combatants an incentive to negotiate. Political concessions through power-sharing are therefore likely to remove the necessary motivational requirement under conditions of power parity.

2. *‘Young’ Politics*. A related argument arises from the observation that countries which recently gained independence are likely to find themselves in a situation in which the distribution of benefits, i.e. the distribution of political power, does not match the actual distribution of power. In particular, since ‘young’ polities are likely to have an ethnic composition that differs significantly in setup from their predecessor country, such countries are likely to find themselves in a process of ‘finding’ the true balance of power and its political representation. Intense prior conflict is thus likely to demonstrate to the belligerents that renewed conflict is also likely, so governments should be more inclined to offer a political constellation that accommodates ethnonationalist claims. By contrast, for reasons of political path-dependence governments of well-established countries will find it difficult to accept changes to the power constellation at the political center. I therefore expect countries which recently gained independence to be more in-

clined to grant concessions to ethnonationalist claims (cf. Fearon and Laitin, 2003; Fearon, 1998).

3. *Imperialist Past.* A particular case of this scenario concerns countries with an imperialist past. Such countries were frequently born with a relatively arbitrary power constellation at the political center, since it was not uncommon for imperialist rulers to artificially install particular groups as their deputies. This is likely to undermine the legitimacy of the political power constellation. Moreover, Wimmer, Cederman and Min (2009, 323) point out that, “[i]mperial past ... [is a] measurement[...] of state cohesion, that is, the degree to which the population takes a state’s territorial borders for granted and identifies with a state independent of who controls its government.” Examples for this scenario include minority rule by the Sara in Chad, or the Riverine groups in the Central African Republic. Consequently, I expect an imperialist past to associate with political concessions by governments as a response to initially “artificial” balances of political power.
4. *Reputation.* Finally, governments will face strategic concerns in situations with multiple potential followers (Walter, 2009*b*, 2006). That is, governments will refuse to negotiate with, and/or accommodate early challengers in order to build a reputation that discourages further demands by other groups. This is a signal to other minorities that fighting will not pay off. I therefore expect constellations with numerous excluded groups to be less likely to result in power-sharing and political power concessions after civil war.

4 Data and Method

To test the theory, I require data that allows the dynamic tracking of ethnic groups involved in conflict. Thus, I analyze a dataset called Ethnic Power Relations (EPR) analyzed Cederman, Wimmer and Min (2010). EPR identifies *all* politically relevant ethnic groups around the world in all years from 1946 to 2005 and measures in how far they differ in terms of access to state power. Thus, unlike alternative sources, EPR does not mainly focus on mobilized minorities, but also provides the *complete* ethnic constellation of power in the political center.

4.1 Dependent Variable: Recurrent Conflict

Although EPR comes with a coding of ethnonationalist conflict, this coding is not suitable for the purposes of this paper because of a rule that omits any conflict onsets which occurred within a ten year window following the end of a previous conflicts as to avoid interdependent onsets. This is, however, precisely what makes recurrent conflict.

In order to measure recurrent conflict, I therefore draw on a new data project that systematically codes the linkage between ethnic groups and rebel organizations (see Wucherpfennig et al., 2010) EPR to the Non-State Actor (NSA) dataset by Cunningham, Gleditsch and Salehyan (2009), derived from Gleditsch et al. (2002). Thus, rather than determining whether a given conflict is ethnic or not, the dataset focuses on the explicit linkage between rebel organizations and ethnic groups. Two criteria were used in order to establish an ethnic linkage. The first criterion assesses the ethnicity of the fighters. In

other words, we coded from which ethnic groups, if any, a particular rebel organization recruits their fighters. This requires a significant number of the group members to actively participate in the organization's combat operations.

Yet, while not all rebel organizations recruit along ethnic lines, recruitment alone is insufficient because it may be merely the result of local availability of rebel soldiers. Depending on where a rebel organization is active, agency may not be deliberate; it may have little to do with the organization's actual agenda other than coinciding with the ethnic demography of the relevant area. The second criterion is therefore whether a given rebel organization publicly announces to operate on behalf of the relevant ethnic group, that is whether it pursues an interest that is directly linked to the group's fate. If recruitment and claim occur jointly, a rebel group was coded as ethnic.

In converting this dataset to the level of ethnic groups, I then determined the earliest onset and the latest termination dates for a given group active—through rebel organizations as their agents—in a given conflict period. Finally, to compute a measure of recurrence I then checked whether the same group was involved in recurrent conflict within a window of five and ten years following the termination of the previous conflict.

4.2 Ethnonationalist Claims: Access to Central Power

In terms of coding access to state power, EPR is an expert survey that focuses exclusively on executive power. Depending on the country, executive power

is either the presidency, the cabinet or senior posts in the administration, including the army. Additionally, it is noteworthy that EPR is time-variant in its coding, i.e. it captures major shifts in the power constellation across time. This makes EPR particularly suitable for a dynamic tracking of the political fates of ethnic groups.

EPR distinguishes between three major types of access to power: absolute power, power sharing regimes, and exclusion from political power. Each of these comes with a number of subcategories.

1. **Absolute Power:** no significant sharing of power

- *Monopoly:* complete exclusion of other ethnic groups
- *Dominance:* only limited inclusion of “token” members of other groups

2. **Inclusion:** any division of power (formal or informal) among elites from multiple ethnic groups

- *Senior Partner:* superior partner in a power sharing agreement
- *Junior Partner:* inferior partner in a power sharing agreement

3. **Exclusion from Central Power:** no access to central power by elites claiming to represent particular ethnic groups

- *Regional Autonomy:* no access to central power, but some limited autonomy at the sub-state level, e.g. in provinces
- *Separatist Autonomy:* local authority due to self-declaration of independence of territory

- *Powerless*: group members do not hold central power
- *Discrimination*: group members do not hold central power because of active, intentional and targeted discrimination (formal or informal)

4.3 Endogenous Variable: Upgrading

In the theoretical section it was argued that a dynamic tracking of the fates is necessary in order to evaluate whether their ethnonationalist claims were accommodated, whether the government was willing share power, and whether their political reality changed. Thus, the key variable that was hypothesized to be endogenous is power-sharing and accommodation of ethnonationalist claims. In order to derive a measure thereof, I assume that the above list of categories of power statuses is ordinal. This allows me to construct a binary measure indicating whether a group enjoyed an improved relative political status during the year following the termination of a conflict, compared to the group's status during the year preceding the onset of the conflict.

With regard to the ordinality of the scale, the logic is as follows: Clearly, *discriminated* groups are worst off, since compared to *powerless* groups, the state takes active measures to prevent the group from political representation. *Separatist* groups exert some local power, but compared to groups with *regional autonomy*, they do not enjoy political legitimacy from the political center. For the remaining categories, the rank-ordering is self-explanatory.

4.4 Independent Variables

- *Power Parity.* Following standard practice in the social sciences (De Soysa, Oneal and Park, 1997, see, e.g. Forsberg, 2008; Bhavnani and Miodownik, 2009 for recent examples), I employ population size as a measure of capabilities. Compared to other possible measures, this indicator has several advantages. First, unlike measures of military capabilities (number of troops, expenditures, etc.), population size is likely to be exogenous to conflict. Second, whereas accurate numbers on rebel military capabilities are unavailable for most rebel organizations, population size is widely available along my conceptualization of ethnic groups as the relevant actors. This allows me to pit governments against challengers on the same scale, which in turn permits me to calculate *relative* dyadic strength on a meaningful and readily interpretable scale. I calculate this dyadic balance of power separately for groups excluded from political, as well as within power-sharing regimes.

Following Buhaug, Cederman and Rød (2008) I therefore proceed by computing dyadic balance, r , of bargaining power as follows

$$r_{MEGi} = \frac{size_{MEGi}}{size_{MEGi} + \sum size_{EGIP}} \quad (1)$$

where $size_{MEGi}$ is the demographic share of the excluded group i , while $\sum size_{EGIP}$ represents the sum of the demographic shares of all groups currently in the political center. Thus the range of r is the interval (0,1); values close to 0 denote weak bargaining power of the excluded group i vis-à-vis EGIPs from the political center; values close to 1 characterize

minority rule (i.e., exclusion of large parts of the population), while values around 0.5 characterize bargaining power parity.

In addition, given the theoretical actor constellation, I create a measure of the balance of power for EGIPs, that is bargaining power *within* the political center for groups within a power-sharing agreement. Accordingly,

$$r_{EGIPi} = \frac{size_{EGIPi}}{\sum size_{EGIP}} \quad (2)$$

denotes the demographic share of EGIP i among all groups in power.

Finally, in order to capture parity, I create a squared term or r^2 . Thus, given the (0,1) range of the variables, power-parity would suggest that the coefficient for r is positive and negative for r^2 , as well as of roughly equal magnitude.

- *Age of Polity.* This measure denotes the number of years since independence (logged, +1). The data come from Gleditsch (2004).
- *Imperialist Past.* This variables measures the number of years under imperialist rule (logged, +1). The data source is Wimmer, Cederman and Min (2009).
- *Other Excluded Groups.* In order to capture situations in which governments are inclined to invest in reputation building and deter other groups from putting forward ethnonationalist claims, I include a measure of the number of excluded groups (logged, +1).

4.5 Control Variables

- *GDP per capita*. Taken from Penn World Tables.
- *Territorial Conflict*. This dichotomous variable distinguishes whether the incompatibility of the conflict is a limited territory (=1), or control over the government (=0) (see, e.g. Buhaug, 2006). It is taken from the Uppsala/PRIO conflict coding (Gleditsch et al., 2002).
- *Government/Rebel Victory*. This variables codes whether the previous conflict ended in victory by either the challenger, (the rebels) or the government. According the setup of the data, excluded groups are by definition the challenger, whereas there cannot be a rebel victory for cases of infighting between included groups. The data source is Cunningham, Gleditsch and Salehyan (2009), who in turn rely on (Kreutz, 2010).

4.6 Method: (Seemingly Unrelated) Bivariate Probit

To tackle the endogeneity issue, I use a seemingly unrelated bivariate probit which I contrast to a standard probit. The bivariate probit is a model suitable for two processes with dichotomous outcomes for which the error terms are correlated and the binary dependent variable of the first equation can be an endogenous regressor in the second equation. This can be written as follows (Maddala, 1983, 122):

$$\begin{aligned} y_{1i}^* &= X_{1i}\beta_1 + \epsilon_{1i} \\ y_{2i}^* &= \delta_{2i}y_{1i} + X_{2i}\beta_2 + \epsilon_{2i} \end{aligned} \tag{3}$$

$$y_{1i} = \begin{cases} 1 & \text{if } y_{1i}^* > 0 \\ 0 & \text{otherwise} \end{cases}, y_{2i} = \begin{cases} 1 & \text{if } y_{2i}^* > 0 \\ 0 & \text{otherwise} \end{cases} \quad (4)$$

where i is the unit (ethnic group) identifier, y_{1i}^* and y_{2i}^* are latent variables for which only the dichotomous variables y_{1i} and y_{2i} can be observed and X_{1i} and X_{2i} are vectors of (not necessarily distinct) exogenous variables. Importantly, these equations are estimated jointly. Thus, rather than assuming independence between the two equations by letting their error terms each follow (separate) independent normal distributions ($\Phi(\epsilon_1), \Phi(\epsilon_2)$), the error terms follow a (joint) bivariate normal distribution ($\Phi_2(\epsilon_1, \epsilon_2)$). In other words, I assume that the error terms are independent and identically distributed bivariate normal with correlation ρ , i.e. $Cov(\epsilon_1, \epsilon_2) = \rho$, across observations.³

Such correlation occurs in the following case:

$$\begin{aligned} \epsilon_{1i} &= \eta_i + u_{1i} \\ \epsilon_{2i} &= \eta_i + u_{2i}, \end{aligned} \quad (5)$$

that is when each process consists of a unique (u_i) and a shared part (η_i). The correlation coefficient ρ then denotes the degree to which the two processes in equation (3) are interrelated through the common part.

How does this match the theoretical considerations outlined in the earlier part of this paper? I argued that concessions of power-sharing (upgrading) (y_1) are most likely to be enacted where post-conflict peace (y_2) is deemed

³Of course, as in the standard probit, (conditional) zero mean and unit variance are also assumed.

most precarious (η_i). Thus, I hypothesize a positive correlation coefficient ρ between the two processes. Moreover, neglecting the endogeneity is equivalent to omitted variable bias (η_i is omitted), which would lead to underestimation of the causal effect of power-sharing in the conflict-equation. In this context, it should be noted that I do not claim the conditions listed as favoring power-sharing arrangements comprise a complete list, nor is this required by the estimator.⁴

Finally, it is worth mentioning that the model does not explicitly require an exclusion restriction (instrumental variable), but can be identified if the same exogenous regressor appears in both equations, provided they are variable (Wilde, 2000).

5 Specification and Empirical Results

Having described the data and method, I now turn to the empirical results. These are given in Table 1. The dependent variable for models 1 to 4 is recurrence of conflict within ten years. In order to ensure for this full period, I exclude cases which terminated beyond 1995 since the dataset ends in 2005. This yields 91 groups in post conflict situations.⁵ The main variable of interest is upgrade, of which there are 30 instances.

I begin with a standard probit model of the type used by the literature (model 1). The results suggest that upgrade has no effect on the recurrence of conflict, a finding that is in line with much of the empirical literature.

⁴If it was possible to control for all such factors directly, a standard probit would be sufficient. The important point is that this is not probably not possible.

⁵In order to account for possible non-independence between multiple groups within the same conflict, I employ robust standard errors clustered by conflict ID.

Table 1: Estimates of Recurrence of Ethnonationalist Conflict

	1	2	3	4	5
	probits	Biprobit	Biprobit	Biprobit	Biprobit
	recurrence10	recurrence10	recurrence10	recurrence10	recurrence5
Upgrade	-0.0639	-1.017***	-1.048***	-1.036***	-1.294***
	(0.42)	(0.34)	(0.34)	(0.38)	(0.45)
GDP per capita	0.0152	0.0132	0.0108	-0.0242	-0.000831
	(0.045)	(0.040)	(0.040)	(0.045)	(0.038)
Territorial Conflict	-0.0288	-0.353	-0.374	-0.210	-0.349
	(0.41)	(0.34)	(0.33)	(0.45)	(0.34)
Rebel Victory	-0.367	-0.258	-0.281	-0.467	0.0260
	(0.66)	(0.58)	(0.57)	(0.60)	(0.55)
Government Victory	-0.882**	-0.896**	-1.033**	-0.994**	-1.223**
	(0.44)	(0.38)	(0.42)	(0.46)	(0.53)
Included Group	-0.213	-0.520	-0.529	-0.627	-0.0428
	(0.41)	(0.36)	(0.36)	(0.39)	(0.35)
Power Balance				0.444	
				(2.39)	
Power Balance ²				-0.539	
				(2.69)	
Age of Polity (logged)				0.160	
				(0.15)	
Imperialist Rule (logged)				0.0653	
				(0.11)	
Excluded Groups (logged)				-0.195	
				(0.26)	
Constant	-0.408	0.247	0.315	0.0227	0.00305
	(0.46)	(0.40)	(0.40)	(0.82)	(0.43)
Log Lik	-49.43				
Upgrade					
Power Balance	5.236*	5.623**	5.208*	5.755*	6.414***
	(2.70)	(2.60)	(2.76)	(2.99)	(2.44)
Power Balance ²	-8.707**	-8.982**	-8.393**	-9.093**	-9.200***
	(3.46)	(3.56)	(3.76)	(3.83)	(3.16)
Age of Polity (logged)	-0.257**	-0.357***	-0.354***	-0.278**	-0.303***
	(0.12)	(0.10)	(0.11)	(0.12)	(0.11)
Imperialist Rule (logged)	0.370***	0.389***	0.362***	0.383***	0.317***
	(0.12)	(0.12)	(0.12)	(0.12)	(0.10)
Excluded Groups (logged)	-0.485**	-0.464**	-0.410*	-0.470*	-0.282
	(0.24)	(0.21)	(0.21)	(0.25)	(0.25)
Included Group	-1.816***	-1.792***	-1.730***	-1.774***	-1.501***
	(0.54)	(0.53)	(0.54)	(0.57)	(0.56)
Territorial Conflict	-1.507***	-1.617***	-1.615***	-1.529***	-1.166***
	(0.44)	(0.46)	(0.47)	(0.49)	(0.42)
Government Victory			-0.403	-0.332	-0.404
			(0.44)	(0.46)	(0.46)
Constant	1.673**	1.832**	1.860**	1.599*	0.959
	(0.81)	(0.75)	(0.77)	(0.87)	(0.77)
Correlation ρ		0.780***	0.806****	0.802***	0.671*
Observations	91	91	91	91	108
Log Lik	-39.92	-85.67	-85.24	-83.76	-94.20
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1					

However, in particular government victories seem to have a negative effect on recurrence, whereas the effect for rebel victories is not significant. Yet, this model neglects the theorized endogeneity. Model 2 therefore employs the bivariate probit described in the previous section. The lower part of each column denotes the equation explaining upgrade (for reference purpose, the first column contains the results from a standard probit model for this equation).

The independent variables all yield the predicted effect. I find an inverted U-shape for the balance of power, suggesting that upgrades are more likely when challenger and government are roughly at power parity. Moreover, upgrades are more likely in states which recently gained independence, as well as in states with an imperialist past. Smaller numbers of excluded groups also associate with political concessions, suggesting that governments are careful in the shadow of multiple future demands. Groups excluded from power are more likely to receive an upgrade in the political power status, a finding that should not surprise, since an upgrade in most cases would boost them to senior partner or beyond. Finally, groups engaged in territorial conflict are less likely to receive an upgrade, suggesting that governments are less likely to accommodate separatist demands. In sum, the equation explaining upgrading appears to yield considerable explanatory power.

Having accounted for the endogeneity of upgrading yields striking results in the recurrence equation; the coefficient is now negative, highly statistically significant, and of roughly equal, if not larger, magnitude as the coefficient for government victory. While this difference is not statistically significant, upgrades are statistically more significant to yield lasting peace than rebel

victories.

Importantly, the correlation coefficient ρ is considerably large at a magnitude of 0.8, and highly statistically significant (Wald statistic). This suggests that power sharing arrangements following ethnonationalist war and recurrence are correlated processes that should be treated jointly. Moreover, the positive direction of the coefficient suggests that unmeasured factors that make upgrading more likely also increase the probability of recurrence. In other words, upgrading occurs where peace is most fragile to begin with. Neglecting this duality is therefore likely to result in biased estimates, as displayed in Model 1.

Model 3 expands Model 2 by including government victory as a possible cause of (the absence of) upgrades; including rebel victory in a similar fashion was not possible due to separation because all cases of rebel victory lead to an upgraded political status. According to this specification, winning governments should find themselves in a position in which they are better able to press for the own interests, i.e. deny power sharing. Empirically, however, the evidence for this line of reasoning is weak at best; whereas the coefficient for government victory is negative, it is not statistically significant.

In Model 4 I consider whether the effect of the independent variables hypothesized to have an effect on upgrade also have a direct effect on recurrence. The results suggest that this is not the case, and that their effect goes entirely through upgrading. Finally, as a last robustness check, I consider a different dependent variable, namely recurrence within five instead of ten years. While this allows me to consider conflicts which ended up to the year 2000, thus increasing the number of observations, it also generates

less variance on the dependent variable (21 conflicts of recurrence within 108 observations). This does not alter the results.

In sum, the results robustly underscore the endogenous effect of power sharing, and that negligence of this is likely to yield biased results. In this context, across all models I find that the correlation coefficient is strongly positive and statistically significant. This is important because it suggests that the two processes are indeed interrelated.

6 Conclusion

In this paper I have argued that the current literature that considers or compares the causal effect of ethnic power-sharing in post-conflict environments neglects the endogenous origins of such arrangements. The paper presents a theoretical argument that suggests that power-sharing arrangements that aim at balancing and sharing political power are likely to emerge where the prospects for enduring peace are slimmest to begin with. In other words, power-sharing after ethnonationalist war occurs empirically where the risk of recurrence is highest. Failure to consider these processes as interdependent is therefore likely to result in biased estimates, underestimation in particular. These considerations – both the underestimation due to endogeneity, as well as the interdependence between the emergence of power-sharing and the recurrence of conflict – are supported by my empirical treatment of ethnonationalist war recurrence.

While the empirical test is preliminary, the results are encouraging, and it appears that the power-sharing can make a difference, and that victory is

not the only solution to stable peace. Indeed, if power-sharing works just as effectively it would be unjustifiable to recommend to continued fighting until one of the belligerents cries uncle. Thus, I side with Wagner (1995, 261) who rightfully points out that “[m]ore important than the way civil wars end, then, is the nature of the political arrangements created after they are over” but emphasize that protracted conflicts can find resolution.

Future research will have to assess two aspects in particular. First, while (Sisk, 1996, 118), in line with the theoretical and empirical treatment given in this paper, argues that power-sharing is more effective when it is arrived at indigenously, closer attention will have to be paid to instances where it is installed through external intervention. Second, in order to allow for better direct comparison, the effect of partition should equally be considered.

References

- Bhavnani, Ravi and Dan Miodownik. 2009. "Ethnic Polarization, Ethnic Salience, and Civil War." *Journal of Conflict Resolution* 53(1):30–49.
- Blainey, Geoffrey. 1988. *The Causes of War*. 3rd ed. Houndmills: MacMillan Press.
- Buhaug, Halvard. 2006. "Relative Capability and Rebel Objective in Civil War." *Journal of Peace Research* 43(6):691–708.
- Buhaug, Halvard, Lars-Erik Cederman and Jan Ketil Rød. 2008. "Disaggregating Ethno-Nationalist Civil Wars: A Dyadic Test of Exclusion Theory." *International Organization* 62(3):531–551.
- Cederman, Lars-Erik, Andreas Wimmer and Brian Min. 2010. "Why Do Ethnic Groups Rebel? New Data and Analysis." *World Politics* 62(1):87–119.
- Chapman, Thomas and Philip G. Roeder. 2007. "Partition as a Solution to Wars of Nationalism: The Importance of Institutions." *American Political Science Review* 101(4):2007.
- Christin, Thomas and Simon Hug. 2003. "Federalism and Conflict Resolution Considering Selection Biases." *Paper prepared for presentation at the ECPR General Conference Marburg, September 18-21* .
- Christin, Thomas and Simon Hug. 2006. "Political Institutions and Ethnic Conflict Resolution: Dealing with the Endogenous Nature of Institutions." *Paper prepared for presentation at the ISA conference in San Diego, March 21-25* .
- Clausewitz, Karl von. 1984. *On War*. Princeton: Princeton University Press.
- Cunningham, David E., Kristian Skrede Gleditsch and Idean Salehyan. 2009. "It Takes Two: A Dyadic Analysis of Civil War Duration and Outcome." *Journal of Conflict Resolution* 53(4):570–597.
- De Soysa, Indra, John R. Oneal and Yong-Hee Park. 1997. "Testing Power Transition Theory Using Alternative Measures of National Capabilities." *Journal of Conflict Resolution* 41(4):509–528.
- Fearon, James D. 1998. "Bargaining, Enforcement, and International Security." *International Organization* 52(2):269–305.

- Fearon, James D. and David D. Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *American Political Science Review* 97(1):75–89.
- Forsberg, Erika. 2008. "Polarization and Ethnic Conflict in a Widened Strategic Setting." *Journal of Peace Research* 45(2):283–300.
- Gleditsch, Kristian Skrede. 2004. "A Revised List of Wars Between and Within Independent States, 1816-2002." *International Interaction* 30:231–262.
- Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Solenberger and Håvard Strand. 2002. "Armed Conflict 1946-2001: A New Dataset." *Journal of Peace Research* 39(5):616–637.
- Goemans, H.E. 2010. War Termination. In *The International Studies Encyclopedia*, ed. Robert A. Denemark. Blackwell Publishing pp. http://www.isacompendium.com/subscriber/tocnode?id=g9781444336597_chunk_g978142.
- Goemans, Henk E. 2000. *War and Punishment. The Causes of War Termination and the First World War*. Princeton: Princeton University Press.
- Hartzell, Caroline A. and Matthew Hoddie. 2007. *Crafting Peace: Power-Sharing Institutions and the Negotiated Settlement of Civil Wars*. University Park: Pennsylvania State University Press.
- Jarstad, Anna K. 2008. Power Sharing: Former Enemies in Joint Government. In *From War to Democracy*, ed. Anna K. Jarstad and Timothy D. Sisk. Cambridge: Cambridge University Press.
- Kaufmann, Chaim. 1996. "Possible and Impossible Solutions to Ethnic Civil Wars." *International Security* 20(4):136–175.
- Kaufmann, Chaim. 1998. "When All Else Fails: Separation as a Remedy for Ethnic Conflicts, Ethnic Partitions and Population Transfers in the Twentieth Century." *International Security* 23(3):120–156.
- Kreutz, Joakim. 2010. "How Armed Conflicts End." *Journal of Peace Research* 47(2):243–250.
- Lacina, Bethany. 2006. "Explaining the Severity of Civil Wars." *Journal of Conflict Resolution* 50(2):276–289.
- Licklider, Roy. 1995. "The Consequences of Negotiated Settlements in Civil Wars, 1945-1993." *The American Political Science Review* 89(3):681–690.

- Maddala, Gangadharrao Soundalyarao. 1983. *Limited Dependent and Qualitative Variables in Economics*. New York: Cambridge University Press.
- Petersen, Roger D. 2002. *Understanding Ethnic Violence: Fear Hatred, and Resentment in Twentieth-Century Eastern Europe*. Cambridge: Cambridge University Press.
- Powell, Robert. 1996. "Stability and the Distribution of Power." *World Politics* 48(2):239–267.
- Powell, Robert. 1999. *Bargaining in the Shadow of Power*. Princeton: Princeton University Press.
- Quinn, Michael J., T. David Mason and Mehmet Gurses. 2007. "Sustaining the Peace: Determinants of Civil War Recurrence." *International Interactions* 33(2):167–193.
- Reiter, Dan. 2003. "Exploring the Bargaining Model of War." *Perspectives on Politics* 1(1):27–43.
- Rothchild, Donald and Philip G. Roeder. 2005. Power Sharing as an Impediment to Peace and Democracy. In *Sustainable Peace: Power and Democracy After Civil War*, ed. Philip G. Roeder and Donald Rothchild. Ithaca: Cornell University Press.
- Sambanis, Nicholas. 2004. "What Is Civil War?: Conceptual and Empirical Complexities of an Operational Definition." *Journal of Conflict Resolution* 48(6):814–858.
- Sambanis, Nicholas and Jonah Schulhofer-Wohl. 2009. "What's in a Line? Is Partition a Solution to Civil War?" *International Security* 34(2):82–118.
- Sisk, Timothy D. 1996. *Power Sharing and International Mediation in Ethnic Conflict*. Washington: Carnegie Corporation of New York.
- Toft, Monica Duffy. 2010. *Securing the Peace: The Durable Settlement of Civil Wars*. Princeton: Princeton University Press.
- Wagner, R. Harrison. 1994. "Peace, War, and the Balance of Power." *American Political Science Review* 88(3):593–607.
- Wagner, R. Harrison. 1995. The Causes of Peace. In *Stopping the Killing: How Civil Wars End*, ed. Roy Licklider. New York: New York University Press pp. 235–268.

- Walter, Barbara F. 2004. "Does Conflict Beget Conflict? Explaining Recurring Civil War." *Journal of Peace Research* 41(3):371–388.
- Walter, Barbara F. 2006. "Building Reputation: Why Governments Fight Some Separatists but Not Others." *American Journal of Political Science* 50(2):313–330.
- Walter, Barbara F. 2009a. "Bargaining Failures and Civil War." *Annual Review of Political Science* 12:243–261.
- Walter, Barbara F. 2009b. *Reputation and Civil War: Why Some Separatist Conflicts Are So Violent*. Cambridge: Cambridge University Press.
- Werner, Suzanne. 1999a. "Choosing Demands Strategically: The Distribution of Power, the Distribution of Benefits, and the Risk of Conflict." *Journal of Conflict Resolution* 43(6):705–726.
- Werner, Suzanne. 1999b. "The Precarious Nature of Peace: Resolving the Issues, Enforcing the Settlement, and Renegotiating the Terms." *American Journal of Political Science* 43(3):923–934.
- Wilde, Joachim. 2000. "Identification of Multiple Equation Probit Models With Endogenous Dummy Regressors." *Economics Letters* 69(3):309–312.
- Wimmer, Andreas, Lars-Erik Cederman and Brian Min. 2009. "Ethnic Politics and Armed Conflict: A Configurational Analysis of a New Global Data Set." *American Sociological Review* 74(2):316–337.
- Wittman, Donald. 1979. "How War Ends: A Rational Model Approach." *Journal of Conflict Resolution* 23(4):743–63.
- Wucherpfennig, Julian. 2010. "Bargaining, Power, and Ethnic Conflict." *Typescript: ETH Zurich* .
- Wucherpfennig, Julian, Nils W. Metternich, Lars-Erik Cederman and Kristian Skrede Gleditsch. 2010. "Ethnicity, the State, and the Duration of Civil Wars." *Typescript: ETH Zurich and University of Essex* .
- Zartman, I. William. 2000. Ripeness: The Hurting Stalemate and Beyond. In *International Conflict Resolution after the Cold War*, ed. Paul C. Stern and Daniel Druckman. Washington: National Academy Press pp. 225–250.