Population Shifts and Civil War:
A Test of Power Transition Theory

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Abstract: Do shifts in the distribution of ethnic group populations within a multinational state make civil war more likely? This article tests the proposition that they do using the competing logic of two core theories of interstate politics: power transition (PTT) and balance of power theory (BPT). The universe of potential population transition types are reduced to nine, and the logic of each of the competing explanations of war likelihood are reduced to four testable hypotheses. Overall, PTT fares better than BPT; although the article concludes that, as is the case at the interstate level, the key determinate of war likelihood rests more with how power is perceived than with raw changes in its distribution across the spectrum of meaningful political actors. Finally, the article offers a useful framework for further specifying the conditions under which population shifts alter the likelihood of an escalation to civil war.

Key Words: Population, civil war, power transition, balance of power, demography, shift

I. Introduction

How, if at all, do shifts in the relative proportions of a state's ethnic groups affect the likelihood that conflicts between groups will escalate to civil war?

Conventional wisdom has it that in states where numbers matter, the prospect of a majority being overtaken by a minority is one fraught, at a minimum, with tension, and one which might eventually lead to violence and civil war (Levy and Krebs 2001, Toft 2002, and Håvard and Urdal 2005). The logic could work one of two ways. Either waning majorities might launch a preventive war – either by passing legislation designed to prevent a rising minority from acquiring influence commensurate with its increasing numbers or by outright assault – or a rising minority might make redistributive demands, again ranging from increased access to offices, contracts, wealth, or even outright independence.

Contemporary Israel seems a strong case in point. Its post-1967 occupation of Gaza and the West Bank of the Jordan River put this young parliamentary democracy in nominal control of millions of Palestinian Arabs, whose birthrates in the past forty years have far outstripped those of Israelis as a whole. In addition, a dramatically increasing segment of Israel's own society is made up of Ultra Orthodox Jews, who out birth all other Jews in Israel by a ratio of about three to one (Toft 2002). Only successive waves of Jewish immigration have kept Jews in the majority within Israel. But those waves of immigration have now ebbed, while birthrates among Ultra Orthodox Israeli and Palestinian Arabs have continued unabated. At anything like current comparative birthrates, the proportion of Jews in Israel will drop from 82% of the population today to 77% by 2020. Demographic shifts are thus a major issue – encompassing both identity and security issues – within Israeli politics.

A key question then is under what conditions do demographic shifts – ending in a transition of majority to minority and vice versa – lead to civil war? One good way to answer this question is to take two leading power and peace theories and apply them to the question of intrastate violence. The two leading candidates are power transition (PTT) and balance of power theory (BPT).

In this paper I argue that of the two, PTT provides a better overall explanation of the conditions under which demographic transitions will lead to civil war. This is not to deny that either theory – both of which suffer from the tendency to view power as necessarily and generally threatening independent of context – is ideal as a *general* explanation of the likelihood of dispute escalation within multinational states. But one of the paper's key contributions is its capacity to show that even in an environment in which context matters most, shifts in the distribution of power go a long way toward explaining the likelihood of violence. My analysis thus simultaneously reinforces the positive utility of PTT in isolating the conditions under which escalation to violence is most likely, and the limits of any approach which assumes that power shifts shorn of their context have explanatory value.

The remainder of this paper consists of three sections. In the next section I present an assessment of the two core theories of international relations: PTT and BPT; deriving logical, testable hypotheses from each. The third section presents statistical tests of the competing hypotheses to determine which theory best predicts civil war in relation to population changes among ethnic groups. The fourth and final section discusses the implications and limitations of the findings.

II. Power and Peace Theories

Power transition theory or PTT first emerged in the late 1950s as a critique of balance of power theory (BPT). BPT held that peace in an anarchic international system was most likely to obtain when no single state or coalition of states could gain enough of a power advantage over other states to make military conquest easy. Thus, an equilibrium – even a rough one – would ensure, by means of deterrence logic, a relatively peaceful international order.

A.F.K. Organski developed power transition theory in response to an empirical anomaly in BPT: major wars tended to break out when opposing great powers or coalitions were nearing or just past power parity – precisely the conditions held by BPT to be most conducive to peace. Why?

Organski (1958) and later Organski and Kugler (1980) theorized that the answer might lie – not in static snapshots of relative power among states in an anarchic international system – but rather in fluctuations in relative power brought about when a state or coalition of states, through industrial development, gained enough power to threaten a pre-existing order. At such times of *power transition*, Organski reasoned, rising powers eager to alter the status quo (in particular the distribution of valued resources assumed to favor incumbent powers) might threaten or attack incumbents once the threshold of power parity had been passed, even slightly.

Organski was also critical of the notion of *de facto* anarchy in an international system. While acknowledging that it was literally true that the international system of states had no formal sovereign, Organski noted that states within the international system nevertheless formed into hierarchically organized groups. This tendency to organize around powerful industrial states allowed for specialization of function among states, and made interstate interaction very similar to intrastate interaction.

More importantly, while BPT theorists argued that states could gain or lose power *either* through internal (development) or external (alliances) balancing, Organski argued that in the industrial age alliances had become far less flexible than in the pre-industrial age. As DiCicco and Levy summarize,

> Economically interdependent, militarily tied, and sentimentally bound nations cannot "switch sides" as easily as the dynastic states of the sixteenth, seventeenth, and early eighteenth centuries, and consequently alliances are not a primary means of enhancing national power (DiCicco and Levy 2001, 119).

In sum, what we now think of as PTT has six key assumptions.[1] First, states are the primary unit of analysis. Second, states may be considered unitary rational actors. Third, the international system is an ordered system with a dominant power (or coalition) and weaker powers. Fourth, the international political system is similar to domestic political systems. Fifth, the internal growth and development of states is the primary source of international change. Sixth, alliances are relatively stable and hence, alliance change is not a significant factor in a state's power calculations.

These assumptions underpin a focus on "two key explanatory variables: relative power, and the degree of satisfaction with the international order (or status quo). The interaction effect between them is the primary determinant of war and peace" (DiCicco and Levy 2001,115–116).

By contrast, BPT relies on the existence of a willingness among the members of an informal "power" order to shift commitments in response to power shifts among them. In essence, a willingness and ability to constantly monitor each others' power and counter internal power disparities with shifts in alliance commitments. If this fails to happen, the combination of bandwagoning (alliance from fear) or alliance from greed could create a situation in which one or some states could easily overwhelm one or some other states, and war would be the result. The paradigmatic case of failure, according to BPT, is the rise of German power from 1895 to

[1] Assumptions in the sense that they are not evaluated or tested. The following are paraphrases of "hard core" assumptions outlined in DiCicco and Levy 2001, pp. 119–120.

1914, and again from 1933 to 1939. In the first period, alliances did shift to take account of Germany's dramatically increasing population and industrial power, but they neither shifted quickly nor publicly enough to prevent the outbreak of war by deterring Germany.

BPT received a useful update in the early 1990s with the publication of Stephen Walt's *Origins of Alliances*, in which Walt argued that it is not raw power that mattered so much as the credible threat of its use (a combination of geographic proximity and stated or discovered intentions regarding the use of a given state's power). Thus, Walt's update has been called balance of threat (BOT) theory. The obvious weakness with BPT and BOT as policy is that by necessarily favoring a status quo it tends to confuse peace with justice. The problem for BPT/BOT as *policy* is that peace favors a particular distribution of valued goods within a system, so it will tend to benefit some states but not others, or benefit some states much more than others. Peace is clearly a value most states share, but not always and not always above all other values. This, in turn, leads us back to one of the key insights of PTT, which is that states expect their "power" to sooner or later represent (or obtain) their individual interests, even at the expense, periodically, of the shared or group interest in interstate peace. Again, Germany in the second period stands as a fair example. It was not only the rise of German power, but Hitler's overt willingness to use that power to redress grievances dating from Germany's signing of the Versailles Treaties ending World War I that led to the perception of a credible German threat. Once again, other interested powers in the system correctly assessed the potential threat of Germany's increasing power, but failed to coordinate an alliance capable of deterring Germany. The result, again, was war.

Arguments

As should be obvious from the preceding discussion, both PTT and BPT focus on the likelihood of war between states, and in particular, it should be added, relatively powerful states. My primary concern in this paper, however, is on the likelihood of war between actors *within* a multinational state. I am interested in the question of what causes some intrastate conflicts to escalate to civil war while others do not, and here I test the argument with data on the relative power of substate actors, where "power" is represented by simple numbers or, the population size of ethnic groups.

The idea that population counts toward a given political unit's power is far from novel. In the late 19th Century, Ivan S. de Bliokh (1836–1902) – in his famous appraisal of the links between technology, industry, commerce and war – was summing up a common and widespread concern in Europe when he argued that differential population growth in Europe's great powers could lead to war. De Bliokh's assessment of German calculations in this regard reads like a paraphrase of PTT's logic concerning pre-emption incentives for declining incumbent powers:

> … certain nations, especially the Germans, who run the risk of becoming weaker on account of their population growth, are bound to go to war immediately against other nations with the aim of conquering territories from those placed in a more favorable conditions in terms of their future development (de Bliokh 1977, 138).

Population remains a major component of most social science indices of national capabilities (DeSoysa, et al. 1997). Rising or declining group populations within a given state do not correlate directly to *power* in the sense of a system of pure majority or proportional rule. However, neither does a state's industrial power correlate directly with its capacity to wage war. I therefore assume (rather than argue) that an ethnic group's relative population within a multinational state has implications for the control of that state in the same way that a state's industrial power has implications for who controls the international system.

There has been much scholarly work on the causes of civil wars and some nascent work on applying power parity theories to civil wars. Ellingsen (2000) examined the relationship of number of groups and group sizes to civil wars and found that wars are more likely to occur when the largest group is less than 80 percent of the population and that wars are more likely in multinational states with fewer numbers of groups rather than greater. Besançon (2005) approached the study of inequality and civil wars from the power theories as well as the relative deprivation theories. She found that economic inequalities and social inequalities impact revolutions and ethnic wars differently. Greater economic inequality more profoundly impacts revolutions and greater social and political inequality impacts ethnic driven wars. Benson and Kugler (1998) applied a limited test to power parity and war in intrastate wars using a proxy for political extractive capabilities for the government and the rebel groups. They found that increase in capacity of rebel groups was positively related to civil wars, whereas increasing capacity for the government was negatively related to civil wars. This rough estimate of capabilities showed that the opposing minority group needs some equalizing power (power parity) to challenge the status quo. These studies demonstrate that size dynamics and power dynamics are relevant to civil wars, but they do not identify which groups and the types of shifts between them that are correlated with war.[2]

I would argue that demographic shifts are relatively more important nowadays than in the past because the number of states in the international system with democratic "forms" of government has increased steadily since WWII. Because democracy has as its root principle of legitimacy the notion of majority rule, and because ethnic groups are apt to vote as blocs, democratization, *ipso*

[2] This study does not seek to address the vast literature on inequality and civil wars, greed, grievance, development, agent base, or the question of historical identity differences.

facto, makes relative demographic shifts more important (Hegre et al 2001, Reyna-Querol 2002, Toft 2003).

Power and Peace Theories and the Likelihood of Civil War

Although intended to explain interstate conflict, the logic of PTT and BPT would yield predictions on the likelihood of conflict within a state when majority and minority groups experience shifts in numbers. In brief, if we apply the logic of PTT to intrastate power shifts, PTT would hold that civil war--the domestic analog to interstate war--would most likely break out just before or just after a demographic transition. Just before or after, in other words, a minority became a relative majority within the state. The logic would be the same as for the interstate system: rising ethnic groups, unhappy with the status quo, may destroy the state's equilibrium by seeking a change in the distribution of valued goods within the state commensurate with their new and growing power. Incumbent majorities, soon to be minorities, would anticipate this, and would be tempted to preemptively attack soon-to-be majority groups before they could leverage a claim. Note that a persistent criticism of PTT is that it is not fine-grained enough of a theory to predict *when* in the transition process a civil war might be sparked, nor can it tell us which of the two (in the standard dyadic model) actors would be most likely to initiate hostilities. War could break out just prior to a minority-majority shift, during a shift (at parity), or following a shift, when the former minority group becomes a clear majority group; and either side might attack first.

By contrast, the logic of BPT anticipates civil war when there is an asymmetry of ethnic group power, such that one group felt it could easily and quickly destroy the other in the event of a conflict. Here the only difficulties are of measurement and falsifiability. If the asymmetry is too great, then BPT predicts the weaker power will not advance demands that could anger the

majority group and, logically, the majority group would be unlikely to feel threatened by the existence or demands of a minority group. So BPT predicts peace either when power is relatively balanced (so there is no prospect of a quick and easy victory), or when the asymmetry between groups is very high. Another fly in the ointment is the problem of external patrons: one thinks most famously of the position of Serb nationalists in Austria-Hungary just prior to the First World War, in which Serbs, the relative minority, had the support of Russia, then a great power within the European system. Serbia had aspirations out of proportion to its relative power within Austria-Hungary (though in fairness these never took the form of "demands" against the Empire), and its ties with Russia made its status a constant security concern (security most particularly in the sense of precedent setting) within the Empire (Toft 2003). This example does not rebut or contradict the logic of either BPT or PTT so much as highlight one considerable limitation of the dyad as an analytical model where ethnic group populations are concerned.

It remains to identify the universe of variations in relative population shifts within a multinational state (the independent variable) before teasing out the hypotheses that naturally follow, and attaching them to the likelihood of civil war (the dependent variable).

Hypotheses from the competing theories

At root, my interest is in the impact, if any, of *relative* shifts in population proportions of ethnic groups within a multinational state, and more specifically, the two largest groups. Could a shift in populations, analogous to power, make civil war more likely? Is civil war less likely when group populations are distributed asymmetrically or evenly? From an analytical perspective it makes sense to begin by introducing an ideal-type model featuring two actors, the majority group (the largest) and the minority group (the second largest group) and three variable conditions. The conditions are when the population of the group in question (1) increases, (2)

decreases, or (3) remains static relative to the other group. The two actors and three variables generate nine possible outcomes, as summarized here in Table 1:

Table 1: Types of demographic transitions[3]

		Minority group: increase	Minority group: decrease	Minority group: static
Majority group	increase	*1*	2	3
	decrease	**4**	*5*	**6**
	static	**7**	8	*9*

Keeping in mind that "power transitions" are only one of four posited conditions that must be met in order for violence to be *likely*, the logic of PTT generates expectations on each of these variations. Specifically, PTT leads us to expect that so long as both groups remain relatively static in terms of growth and decline (cells 1, 5, and 9), civil war is unlikely (no power transition equals no war). Conflict would also be less likely when a minority group was decreasing or exhibiting static growth while a majority group increased (cells 2 and 3: the logic being that since the majority group already determines the status quo in terms of the distribution of valued resources and security, a decline in the power of a minority group would not lead to civil war). According to the logic of PTT then, cells 4, 6, and 7 are the only of the nine variations expected to generate a civil war: in these cases a minority group is increasing relative to the majority group.

Another important variable is the *rate* at which transition appears likely to occur; and this too is captured by the nine-cell matrix. For the sake of simplicity we can imagine the concept of transition graphically as two lines whose slopes eventually cause them to intersect. The steeper the positive slope of the minority line relative to the majority line, the faster the transition; and

[3] Numbers in **bold** indicate where civil war is likely, and *italic* numbers indicate where civil war is unlikely per power transition theory.

the more closely parallel the slope of the minority line to the majority line, the slower the transition. Logically, we expect the predictions of PTT to hold more robustly in faster rather than in slower transitions, since the logic of PTT mirrors that of windows of opportunity and vulnerability already well canvassed by IR theory more generally.[4] So for example, in Table 1, cells 1, 5, and 9 all share the characteristic of relatively *slow* transition: although in each case it may literally be true that at some point minorities and majorities might switch, the fact that change is held relatively constant means for all intents and purposes there is no transition. By contrast, cells 4, 6, and 7, all indicate faster changes, with 4 being the fastest and 6 and 7 being equivalent.

PTT itself does not generate specific predictions at the level of detail highlighted in Table 1, but four main hypotheses follow from the logic of PTT; and isolating them allows us to analyze whether there is a statistically significant correlation between variation in group population (power) transitions and variation in the likelihood of civil war as an outcome:

H1: states in which minority ethnic group population size is increasing relative to the majority are more likely to suffer civil war.

H2: the closer the groups become in size (approach transition), the higher the likelihood of civil war.[5]

H3: the faster the relative rate of change of group size (transition) within a state, the greater the likelihood of civil war.

H4: the greater the dissatisfaction between majority and minority groups, the greater the likelihood of violence.

Note that these are more concise restatements of the four circumstances in which violence is most likely to obtain during (or after) a power transition. Hypothesis 1 captures the dynamics of transitions in which the minority group is increasing in size relative to the majority: in these

[4] PTT is an evolving theory. Tammen et al. (2000) hypothesize that slower rate of change (i.e. a longer period of parity or transition) increases the likelihood of war.

[5] Horowitz (1985), among others, posits that the closer the ethnic groups are in size, the more likely the violence. Ellingsen's (2000) hypothesis is that the larger the size of the largest minority, the more likely that domestic conflict will occur (p. 234).

instances, PTT predicts war. Hypothesis 2 gets at the root causal logic of PTT which is that either fear of loss of power (value redistribution) by majorities *or* a soon-to-be facilitated desire for revenge for past discrimination or abuse of minorities makes periods of transition likely to correlate with violence and, in out particular case, civil war. Hypothesis 3 includes the time dimension, which simply states that when transitions are indicated but very distant, they become less politically important or, put differently, are unlikely to serve as causus belli in the sense indicated by Hypotheses 1 and 2. Hypothesis 4 again moves beyond PTT in bracketing the notion of a *relationship* between actors that is independent of their relative power and of shifts in relative power. This is a key hypothesis because it provides a solid logic behind the prediction of Hypothesis 1: where significant dissatisfaction exists is precisely where majorities will fear the consequences of a loss of power and minorities will be motivated to retribution should they acquire power.[6]

Power Transition Theory versus Balance of Power

The data allow us to test PTT against Balance of Power Theory (BPT): a competing general explanation of the relationship of power to outcomes. If we imagine ethnic groups within a state as existing in an equilibrium subject to rapid (shocks) or gradual disruption, then it makes sense to ask the question: does a theory which expects violence to obtain from dis-equilibrium (either externally or internally caused) do a better job of explaining variation in outcomes than PTT?

The logic of this argument is that groups only consider violence when they are relatively more sure of winning a subsequent fight. As numbers (the proxy for relative power) approach parity, the likelihood of a quick or easy victory in the event of violence diminishes. This is true so long

6 PTT also concerns itself with, but does not answer, the question of *who* is most likely to escalate a conflict of interests to violence given a rapid and decisive shift in group power. This argument is not tested here.

as we assume (1) that actors are relatively and proportionately risk averse; and (2) numbers equal power.

In reality, *within* states neither assumption is likely to be accurate. Empirically, the governments of most states with long-standing ethnic tensions are dominated by a single ethnic group (e.g. whites in Europe and North America). Furthermore, these governments maintain advantages in both their use of force and in how their use of force is perceived by neutral audiences.

In terms of our hypotheses, the only one that directly tests PTT against BPT is Hypothesis 2 which questions the relative proportions of ethnic groups within states. Whereas PTT predicts that war is more likely when the groups approach parity, BPT predicts peace.

IV. Tests of the Hypotheses

This section presents an empirical assessment of the likelihood of civil war. Two sets of tests are presented. The first set consists of crosstabulations to see whether change and different types of changes in relative ethnic group sizes are associated with a greater likelihood of civil war. These crosstabulations test only the first hypothesis. Furthermore, these tests mimic the tests conducted by early PTT scholars in trying to understand the outbreak of interstate wars.

The second series of tests are more comprehensive in that they test all four hypotheses. Using logit models, I test for the likelihood of civil war in relation to population transitions, but control for economic and political factors.

The main independent variable for all of the tests is shifts in the population size of ethnic groups within states and the dependent variable is the occurrence of civil war.

For the main independent variable, I used Tanja Ellingsen's 'Ethnic Witches Brew' Data Set to determine the population figures of ethnic groups.[7] These data enumerate (1) the largest group in a country as percentage of total population; (2) the name of the largest group; (3) the second largest group as percentage of total population; (4) the name of second-largest group, and (5) the number of groups each constituting five percent or more of the total population for each year from 1945 to 1994 for 229 countries. Although Ellingsen provides data on religious and linguistic groups, only the ethnic group data are used here. This is due to quite a bit of missing data for the linguistic and religious categories.

These population data were used to create the independent variable—transition type— for this analysis. First, I calculated the change in population percentage of the largest and second-largest groups for each decade (change from 1945 to 1955, 1955 to 1965, 1965 to 1975, 1975 to 1985, and 1984 to 1994). These calculations were then correlated with the transition types outlined in Table 1 above.

After identifying the nine types of transitions and matching them with Ellingsen's data, I then combined my data on civil wars with her ethnic group data to identify civil wars that took place between majority and minority groups. There were a total of 134 civil wars.[8] This data set includes all civil wars fought from 1940 to 2000. A war was coded if it met the following criteria:

1. The focus of the war was control over which group would govern the political unit.
2. There were at least two groups of organized combatants.
3. The state was one of the combatants.
4. There had to be at least 1000 battle deaths per year on average.

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[7] The data set is available at http://www.svt.ntnu.no/iss/Tanja.Ellingsen/Default.htm.

[8] See the Appendix A for cases and Appendix B for summary statistics. The full dataset if available electronically from the author.

5. The ratio of total deaths had to be at least 95 percent to 5 percent, meaning the stronger side had to have suffered at least 5 percent of the casualties.
6. The war had to occur within the boundaries of an internationally recognized state or entity at the start of the war.

I then determined whether civil war broke out in the preceding or current decade.[9]

Although Ellingsen measured the ethnic group make-up or structure of the state and tested this structure against the likelihood of intrastate war in general, she was not trying to explain how transition dynamics between distinct identity groups influence their behavior toward war. In other words, in order to test the narrower and more precise proposition – that demographic transitions correlate with increased levels of violence within multinational states among particular identity groups – we need to do the additional steps of discerning whether identity groups were involved, and thereby possibly demographic dynamics, and whether the groups coded by Ellingsen are indeed the same groups involved in the civil war.

If the war concerned was coded as identity-based in my civil war dataset, I determined whether the group combatants involved in that war corresponded to the demographic figures of largest and second-largest ethnic group. If this was so, I considered this case a "match" and included it in the statistical analysis.

Crosstabulations of Demographic Transition and Civil War

Recall from Table 1, that a transition in line with the logic of PTT included Transition types 4, 6 and 7. These are situations in which the relative sizes of the groups change, with the minority gaining on the majority. The remaining Transition types are not considered transitions per the

[9] Because demographic shifts take a long time, I thought it best to have as large a window for violence as possible. Here I use 20 years: most countries hold decennial censuses, so this allows for two counts, and 20 years allows for two generations of births and their rates to be assessed.

logic of PTT. With this aggregation we can then test whether transition was correlated with civil war. The results are shown in Table 2:[10]

Table 2: Correlation Matrix of Transition to Civil War

	No war	War
No transition	518	38
Transition	70	7

Kendall's tau-b = 0.029
Pearson chi2 (1) = 0.521 p=0.470

As Table 2 shows there seems to be little relationship between demographic transitions and civil war. Note however this is a gross aggregation of the nine types. We get a different picture if we examine the nine transition types individually against the outbreak of civil war. Table 3 shows the results:

[10] See Appendix D.

Table 3: Relation of Demographic Transition Type to Civil War
Matching Combatants to Transition Type

Transition Type	No war (n)	No war (%)	Civil war (n)	Civil war (%)
1. Both increase	9	2	1	2
2. Majority increase/ minority decrease	36	6	6	13
3. Majority increase/ Minority static	13	2	0	0
4. Majority decrease/ Minority increase	37	6	3	7
5. Both decrease	12	2	2	4
6. Majority decrease/ Minority static	25	4	4	9
7. Majority static/ Minority increase	8	1	0	0
8. Majority static/ Minority decrease	6	1	0	0
9. Both static	442	75	29	64
Total	**588**	**100**	**45[11]**	**100**

Pearson chi2(8) = 9.18 p =0.327

As in Table 2, Table 3 implies that transitions are unrelated to civil war outbreak and this relationship appears to be statistically *insignificant* overall. However, the further breakdown of the types of transitions that took place within the 45 war instances showed that three transition types occurred at twice the expected rate:[12] 1) Transition type 2 – when the minority groups is decreasing in size and the majority group is increasing; 2) Transition type 5 - when both groups are decreasing in size; and 3) Transition type 6 - when the minority group is static and the majority group is decreasing in size. Of these three types of transitions, PTT predicts only type 6, where the majority is decreasing in size and the minority is static, as a cause of war. This transition constitutes a threat to the status quo in that the majority is losing its advantage.

[11] There were a total of 33 wars, but 45 distinct transition dynamics. This is because some wars lasted so long that population shifts occurred as the war was fought.

[12] This is according to crosstabulation calculations between expected and actual frequencies. See Appendix C.

What does the analysis say so far about demographic transitions and civil war? First, PTT predicts an increased likelihood of violence when four conditions hold, as outlined by the corresponding four hypotheses. Only the first of those hypotheses– rising minority power and change in relative group sizes – are represented by the data here and tested. When condition one is met (a rising group's power constitutes a threat to the status quo) we would still expect to see more civil wars than we do. However, we can say that when there *is* an impending transition, three types correlate with war more than others. PTT predicts war when the status quo/declining power (here majority) is threatened, or Types 4, 6, and 7, cases in which a minority group is increasing relative to the majority group. PTT thus correctly predicted that Type 6, the minority is static and majority is decreasing, would be threatening. But Types 4 (minority increasing and majority decreasing) and 7 (minority increasing and majority static) also predict war. This is not what we see with the data here. Moreover, PTT failed to predict Type 2-related civil wars in which the minority is decreasing and the majority is increasing, and these turned out to be the most prevalent. If John Mearsheimer is right about powerful states taking advantage of weakening ones, then this finding might count as empirical support for offensive realism's explanation of the prevalence of war among Type 2 transitions: majorities increasing in strength attack minorities as the minorities begin to look like cheap and easy targets (Mearsheimer 2001).

Balance of Power Theory

PTT's poor showing above raises the question of whether BPT better predicts ethnic war within multinational states. This query is represented by Hypothesis 2, which posits that the relative balance of population proportions between ethnic groups produces war in PTT and peace in BPT. To answer this let us now to turn to the structure of states. Table 4 shows the 17 multinational states which experienced population changes and civil wars, along with the size of

the two largest groups.

Table 4: Distribution of States Experiencing Civil Wars Compared to [Static] Ethnic Group Composition[13]

Country	Majority percentage	Minority Percentage	Percentage Difference
Afghanistan	55	27	28
Algeria	99	1	98
Burma	72	9	63
Burundi	84	14	70
Cyprus	78	18	60
Iraq	76	18	56
Namibia	86	7	79
Nigeria	59	8	51
Rhodesia	95	5	90
Rwanda	90	9	81
South Africa	68	18	50
Sri Lanka	74	18	56
Sudan	49	41	8
Tunisia	99	1	98
Turkey	85	8	77
USSR	53	17	36
Yugoslavia	63	14	49

As Table 4 shows, most civil wars occurred in states in which the largest group had majority power, as measured by population. In only one case did the minority come close to the size of the majority, and that was in Sudan. Asymmetry appears to be the norm in the war cases. This implies support for BPT: civil wars appear to correlate with multinational states in which there is an *imbalance* of power as measured by ethnic group proportions within the state. If you consider the cases above in terms of the mean of the majority group size, it is 76 percent. In fact, nine of seventeen of these wars involved groups in excess 75 percent. On average, there is a 62 percent difference in the size of the fighting groups. This suggests that imbalances of demographic power seem to be correlated with the war cases.

Yet we need to be careful here. It turns out that the mean ratio of the minority group population divided by the majority group population for states suffering war and transition was for all intents and purposes the same (.234 for no war and .259 for war). In other words, we

[13] The population percentages are from the year the war started.

cannot confirm that BPT is a better predictor than PTT simply because there have been so few cases of parity between minority and majority ethnic groups. Finally, these data show that classic definition of transition in which a minority group reaches within 20 percent of a majority group has rarely occurred. Sudan is the only case since 1940.

Logit Analysis of Demographic and Civil War

The previous analysis tested the first two hypothesis and distinguished among transition types. This section presents a series of logit models that are dynamic, test all four hypotheses, and the relative predictive power of PTT and BPT.

Outbreak of civil war remains the dependent variable and the types of transition are the main independent variables. In order to test the logic of PTT more fully, including Hypotheses 3 and 4, and control for economic and political factors, additional variables were created.

The two control variables for regime type and economic development are Polity2 and real GDP per capita. Polity2 measures the level of autocracy and democracy for states in a combined score by substracting autocracy scores from democracy scores. The scale is –10 to 10. Real GDP per capita derives mainly from Penn World tables, with missing supplemented from Easterly and Yu and it is logged for the analysis here. The quantitative literature on the causes of civil war has shown these stand out as factors influencing the likelihood of civil war.

The remaining independent variables are used as proxies to capture the logic of elements of PTT. “Threatening Transition Types” is a measure of the three types that PTT logic predicted should most likely cause war. These are Transitions types 4, 6 and 7. This is a dummy variable. If the Transition type was 4, 6 or 7, the case was coded as “1”, all other Transition types were coded “0”. This variable is meant to test Hypotheses 1: transitions that threaten the political order.

In order test whether dynamic changes in relative ethnic group size influences the likelihood of war, a variable was generated that divided the size of the majority group by the size of the minority. This created a ratio of the balance between the majority and the minority. This is a continuous variable and tests Hypothesis 2, which, as in the tests above, allows us to determine whether PTT or BPT is the best predictor for how power balances influence the likelihood of civil war.

PTT includes the dynamic element of speed of transition as a cause of war: the faster the transition, the greater the likelihood of war. Two variables that capture the change in the sizes of the ethnic groups over time were created to test this (i.e. Hypothesis 3). One variable provides the change in the size of the minority group from one decade to another, and the other for the majority group from one decade to another. They are continuous variables.

Finally, to test whether satisfaction with the status quo influences the likelihood of war, PARCOMP from the data set POLITYIV is used. PARCOMP measures the competitiveness of political participation in a state. Because PARCOMP approximates the extent to which "non-elites are able to access institutional structures for political expression", it serves well as a proxy for PTT's satisfaction with the status quo and a test of Hypothesis 4. This is a scaled variable, from 0-5.

Table 5 presents the results of three sets of models that test the four hypotheses. Each set included one model that included either POLITY2 or PARCOMP, due to their high correlation.

Table 5: Logit Analysis of Population Transition and Civil War

	Model 1- Pure PTT	Model 2- Pure PTT	Model 3 —PTT	Model 4- PTT	Model 5- Other types	Model 6- Other types
Control Variables						
Real GDP	-.75***	-.56***	-.75***	.58***	-.74***	.57***
	(.190)	(.191)	(.197)	(.195)	(.208)	(.206)
Polity2	.03		.02		.02	
	(.029)		(.030)		(.031)	
Theoretical Variables						
Hypothesis 1:						

Transition Types						
Threatening transition types	.62 (.695)	.70 (.747)				
Type 2					1.18* (.818)	1.15 (.930)
Type 4			.15 (.972)	-.06 (1.030)		
Type 5[14]						
Type 6			1.69** (.846)	1.99*** (.838)	1.71** (.844)	1.98*** (.843)
Type 7[15]						
Hypothesis 2: PTT v. BPT						
Majority/Minority Ratio	-.04*** (.010)	-.03*** (.009)	-.04*** (.011)	-.04*** (.011)	-.04*** (.011)	-.039*** (.011)
Hypothesis 3: Rate of change						
Decade change for minority	.08 (.153)	.15 (.161)	.21* (.170)	.33** (.170)	.21** (.130)	.27** (.133)
Decade change for majority	.08* (.055)	.12** (.062)	.12** (.067)	.17** (.076)	.08** (.046)	.107** (.059)
Hypothesis 4:Satisfaction with Status quo						
Parcomp		-.14 (.166)		-.18 (.174)		-.19 (.172)
Constant	3.35*** (1.438)	2.16* (1.477)	3.42*** (1.475)	2.39 (1.503)	3.16** (1.58)	2.19 (1.59)
N	395	386	388	379	385	376
Pseudo R2	0.14	0.14	0.17	0.18	0.16	0.17

All standards errors are robust
P<.01***, P<.05**, P<.10*

The first two models test the aggregate transition type variable as derived from the logic of PTT (as presented in Table 1 and included Types 4, 6 and 7). The aggregate variable does not prove useful because further tests showed that one of the three transition types (4) has a negative effect, rather than a positive effect on war. Thus, this model fails to provide confirming evidence of Hypothesis 1.

Given that the aggregate variable masked the differential effects of the nine distinct transition types, dummy variables were created for the three types of transition that PTT posits as war producing (Types 4, 6 and 7). Additionally, dummy variables were created for the transitions types that the earlier crosstabulations showed to be associated with war (Types 2, 5, and 6). The logit models 3 and 4 test the individual effects of Transition types 4, 6 and 7, while models 5 and

[14] Type 5 was included in the testing of models 3 and 4, but was dropped by STATA for too few observations.
[15] Type 7 was included in the testing of models 5 and 6, but was dropped by STATA for too few observations.

6 test Transition types 2, 5 and 6. Transition types 5 and 7 dropped out of the estimations due to too few observations.

These models show some interesting results and mixed support for PTT. In all of the models, the economic control variable real GDP proved to be a significant mitigator of war, as other research has shown. The political control variable of POLITY2 failed to be significant in predicting civil war.

In terms of the hypotheses, the results are pretty good.

Hypothesis 1 was confirmed, but only partially. Of the three transition types that PTT predicted as worrisome only one was shown to be significant (Type 6—majority deceasing, minority static), one was not tested (Type 7—majority static, minority increasing) and one was not significant at all (Type 4—majority decreasing, minority increasing). This last result is surprising in that PTT would lead us to expect this to be the most threatening scenario. Both groups are changing, with the minority rising, thereby threatening the waning population power of the majority group. Furthermore PTT did not predict that an increase in the majority group with a corresponding decrease in the minority group would be troublesome. Yet, the results of Models 5 and 6 revealed that Type 2 is also a predictor, albeit a weak one, of civil war.

The tests of relative group size that pits PTT against BPT showed PTT to be the better predictor. As ethnic group sizes approach parity, the likelihood of war increases. Across the models this variable—Majority/Minority group ratio—was one of the strongest and most consistent predictors of civil war. Thus these tests confirm Hypothesis 2.

The speed of change of ethnic group size also appears to effect the likelihood of civil war. PTT predicts that the faster the change the greater of likelihood of war and this indeed seems to the case. Each of the models confirm that as either the minority or the majority population increases

in size, the chance of civil war increases. This is the case for the decade change in power of the minority and the majority. While the changes in the minority group size have a stronger effect (i.e. the dynamic that moves towards parity between the groups), the majority coefficient is still surprisingly significant. Whereas this does not definitively test speed of transition , it nevertheless indicates that slower transitions are related to civil wars. Thus hypothesis 3 was not supported.[16]

Although the proxy for status quo—PARCOMP—turned out not to be significant, the relationship is in the right direction. Dissatisfaction with the status quo brings a greater likelihood of civil war. Nevertheless support for Hypothesis 4 remains tenuous and ready for further measure and testing.

So, how did PTT fare overall? Table 6 presents a summary assessment:

Table 6: Summary Assessment of Findings

	PTT Support
Hypothesis 1	Mixed
Hypothesis 2	Positive
Hypothesis 3	Negative
Hypothesis 4	Weak

As can be seen from Table 6, PTT did quite well in predicting civil wars between ethnic majorities and minorities. Although the simple crosstabulations showed no statistically significant relationship between ethnic group population transitions and civil wars, the more sophisticated modeling using control variables revealed otherwise.

16 This lends some support to Tammen at el's (2000) revision of PTT, which posits that slow transitions lead to a greater likelihood of war.

V. Conclusions

In sum, Power Transition Theory is a promising framework for understand civil war. The *logic* of PTT transports well to the question of the likelihood of civil war in multinational states. The only weak point in the analogy (and hence the tests of PTT at the substate level) is that there are other important actors besides ethnic groups sharing "power" within states. These range from class issues to special interest groups (including in many cases a military or constabulary independent from complete control of any single group or interest). This should not be fatal, however, because although traditional PTT focuses on the nation-state as its chief unit of analysis, scholars advancing and testing PTT have acknowledged – since Organski's day – that other actors besides nation states often play a key role in international affairs.

Second, at this stage of data analysis, PTT does appear to be supported at the substate level by the available empirical evidence. Furthermore, when put up against the Balance of Power theory, PTT better predicts civil war.

Although this analysis tested many aspects of PTT, it did not test which party would initiate civil war. Anecdotal evidence suggests that at the sub-state level, violence is most likely to follow, rather than precede, a demographic shift. This is because most ethnic groups will not advance claims to greater economic, social, or political autonomy until they constitute a majority either within the larger state, or within a given territory they identify as a homeland (and over which they generally seek increased autonomy) (Toft 2003). Once majority status has reached the point where even state fudging of censuses cannot hide the fact of majority or substantial changes in group proportions, such groups often invoke the legitimacy of majority rule or changes in electoral practices as a bargaining chip in negotiations in order to insure they can

participate fully in future elections (Przeworkski 1991). Examples include Belgium, Lebanon and Israel and the Occupied Territories (See Toft 2002).

In addition to the fact that PTT, for example, is not fine grained enough a theory on its own to answer such basic and important questions as "which of the actors whose power is shifting is most likely to initiate violence and when?", the data introduced here are not yet developed enough to manage all of the tests of PTT (and BPT for that matter) we would like. However they are suggestive of a number of issues and questions that would not have existed had this analysis not been undertaken.

As observed above, power matters and so shifts in power matter; but what matters most is how relevant actors perceive the consequences of shifts in power. PTT and BPT have always been weakest when addressing this key issue: power in and of itself can be neither intrinsically threatening nor non-threatening. Power between and within states has implications that follow from human and social relationships (satisfaction with status quo). As Alexander Wendt famously observed in "Anarchy is What States Make of It," a bond of friendship and a history of cooperation combine to discount even dramatic increases in power, such as the acquisition by a close ally of a nuclear weapon.[17] By contrast, a history of rivalry and bitterness can multiply the threat of even relatively minor shifts in power.

References

Arreguín-Toft, Ivan (2005). *How the Weak Win Wars: A Theory of Asymmetric Conflict*. New York: Cambridge University Press.

de Bliokh, Ivan Stanislavovich (1977). Population Pressure as a Cause of War. *Population and Development Review*, Vol. 3, No. 1/2: 129-139. (Reprinted excerpts from Volume 5 of *The Future of War from the Point of View of*

[17] Stephen Walt's *Origins of Alliances* (1987) made a similar point years earlier when he argued that it was not power but *threat* against which states sought to balance in order to enhance their security. Also see Mercer 1996.

Technology, Economy, and Politics, St. Petersburg, 1898, translated by Michael Bolysov.)

Benson, Michelle and Jacek Kugler (1998). "Power Parity, Democracy, and the Severity of Internal Violence." *Journal of Conflict Resolution*, 42 (2):196-209.

Besançon, Marie L. (2005). "Relative Resources: Inequality in Ethnic Wars, Revolutions, and Genocides." *Journal of Peace Research.* Vol 42, No. 4, pp. 393-415.

Carr, E.H., *The Twenty Years' Crisis, 1919-1939: An Introduction to the Study of International Relations* (2001). New York: Palgrave.

DeSoysa, Indra, John R. Oneal, and Yong-Hee Park (1997). Testing Power-Transition Theory Using Alternative Measures of National Capabilities. *Journal of Conflict Resolution*. Vol. 41, No. 4, pp. 509–528.

DiCicco, Jonathan M., and Jack S. Levy (2001). The Power Transition Research Program: A Lakatosian Analysis. In Colin Elman and Miriam Fendius Elman, eds.. *Progress in International Relations Theory: Appraising the Field*. Cambridge, MA: MIT Press, pp. 109–157.

Easterly, William & Hairong Yu (2000). 'Global Development Network Growth Database', World Bank, http: //www.worldbank.org/research/growth/GDNdata.htm.

Ellingsen, Tanja (2000). 'Colorful Community or Ethnic Witches' Brew?' *Journal of Conflict Resolution.* Vol. 44, No. 2 (April), pp. 228-249.

Elman, Colin and Mimi Elman, eds. (2003). *Progress in International Relations Theory: Appraising the Field*. Cambridge, MA: MIT Press.

Goemans, Hein (2000). *War and Punishment: The Causes of War Termination and the First World War*. Princeton, NJ: Princeton University Press.

Hegre, Håvard, Tanja Ellingsen, Scott Gates & Nils Petter Gleditsch (2001). 'Toward a democratic civil peace? Democracy, political change, and civil war, 1816-1992', *American Political Science Review.* Vol. 95, No. 1, pp. 33-48.

Heston, Alan, Robert Summers & Bettina Aten (2002). 'Penn World Table Version 6.1', Center for International Comparisons at the University of Pennsylvania (CICUP).

Kugler, Jacek and Douglas Lemke, eds. (1996). *Parity and War: evaluations and extensions of the War Ledger,* Ann Arbor: The University of Michigan Press.

Lemke, Douglas (2002). *Regions of War and Peace*. Cambridge, UK: Cambridge University Press.

Organski, A.F.K. (1958). *World Politics*. New York: Knopf.

Levy, Jack S. and Ronald R. Krebs (2001). "Demographic Change and Sources of International Conflict," in *Demography and National Security*. Myron Weiner and Sharon Stanton Russell, eds. New York: Berghahn Books.

Mearsheimer, John (2001). *The Tragedy of Great Power Politics*. New York: W.W. Norton.

Mercer, Jonathan (1996). *Reputation and International Politics*. Ithaca, NY: Cornell University Press.

Organski, A.F.K., and Jacek Kugler (1980). *The War Ledger*. Chicago, IL: University of Chicago Press.

Przeworski, Adam (1991). *Democracy and the Market*. Cambridge: Cambridge University Press.

Reynal-Querol, Marta (2002). "Ethnicity, Political Systems, and Civil Wars," *The Journal of Conflict Resolution.* Vol. 46, No. 1, pp. 29-54.

Strand, Håvard and Henrik Urdal (2005). "Differential Growth, Political Instability and Violent Conflict." Paper presented at the Annual International Studies Association Conference. Honolulu, HI.

The Independent International Commission on Kosovo (2000). *The Kosovo Report*. Oxford: Oxford University Press.

Toft, Monica Duffy (2002). "Differential Demographic Growth in Multinational States: The Case of Israel's Two-Front War," *Review of International Affairs*. Vol. 56, No. 1 (Fall), pp. 71-94.

Toft, Monica Duffy (2003). *The Geography of Ethnic Violence: Identity, Interests, and the Indivisibility of Territory*. Princeton, NJ: Princeton University Press.

Walt, Stephen M. (1987). *The Origins of Alliance*. Ithaca, NY: Cornell University Press.

Waltz, Kenneth N. (1979). *Theory of International Politics*. (New York: McGraw-Hill).

Wendt, Alexander (1992). "Anarchy is What States Make of It." *International Organization*. Vol. 46, No. 2, pp. 391-425.

World Bank: World Development Indicators (http: //www.worldbank.org/research/).

Appendix A: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
code	794	446.6436	252.5779	2	990
year	794	1976.29	13.75911	1955	1994
country	0				
ethnmaj	779	78.48909	18.69883	21	100
decadechng~j	717	-.2189679	4.838541	-56	33
ethmin	689	14.19158	11.54483	0	46
decadechng~n	628	-.0159236	2.16535	-16	13
type	634	7.711356	2.396739	1	9
threattrans	634	.1214511	.3269087	0	1
war	793	.0643127	.245464	0	1
parcomp	622	2.623794	1.604125	0	5
polity2	645	-.2310078	7.62602	-10	10
polconiii	630	.1710624	.213055	0	.7072
polconiv	556	.2633597	.3281513	0	.8926
rpc1	428	1.00976	.4811777	.0782	4.7282
rgdpchnewpwt	564	5200.528	5721.992	95.18	44792
gini	377	38.27162	6.472514	28.18	45.42
type1	634	.0157729	.1246941	0	1
type2	634	.0662461	.2489081	0	1
type3	634	.0205047	.1418309	0	1
type4	634	.0630915	.2433194	0	1
type5	634	.022082	.1470664	0	1
type6	634	.0457413	.2090885	0	1
type7	634	.0126183	.1117084	0	1
type8	634	.0094637	.0968967	0	1
type9	634	.7444795	.4364978	0	1
bop	657	16.8877	25.70741	1	100

Appendix B: All civil wars, 1940-2000

state warname startyr endyr

1. Afghanistan I Civil War: Mujahideen, Taliban 1978 2001
2. Algeria I War of Independence 1954 1962
3. Algeria II Opposition to Bella 1963 1963
4. Algeria III Fundamentalists 1992 2001
5. Angola I War of Independence 1961 1974
6. Angola IIa Angolan Civil War 1975 1994
7. Angola IIb UNITA Warfare 1998 2001
8. Argentina Coup 1955 1955
9. Azerbaijan/USSR Nagorno-Karabakh 1988 1994
10. Bangladesh Chittagong Hill 1972 1997
11. Bolivia I Popular Revolt 1946 1946
12. Bolivia II Bolivian Revolution 1952 1952
13. Brazzaville Ia Elections 1993 1993
14. Brazzaville Ib Factional Warfare 1997 1997
15. Burma I Communist Revolt 1948 1989
16. Burma II Karens 1948 2001
17. Burma III Shan 1959 2001
18. Burma IV Kachins 1960 1994
19. Burundi Ia Hutu Coup Attempt 1965 1965
20. Burundi Ib Hutu Rebellion 1972 1972
21. Burundi Ic Hutu/Tutsi 1988 1988

22. Burundi Id Hutu/Tutsi 1991 1991
23. Burundi Ie Hutu/Tutsi 1993 2001
24. Cambodia Ia Khmer Rouge 1970 1975
25. Cambodia Ib Viet Intervention 1978 1991
26. Cameroon War of Independence 1955 1960
27. Chad FROLINAT 1965 1997
28. Chile Army Revolt 1973 1973
29. China I Com Rev: Final Phase 1945 1949
30. China III Cultural Revolution 1966 1969
31. China IIa Tibet 1950 1951
32. China IIb Tibet 1954 1959
33. Colombia I La Violencia 1948 1958
34. Colombia II FARC 1964 2001
35. Costa Rica Civil War 1948 1948
36. Cuba Cuban Revolution 1956 1959
37. Cyprus Ia Greek/Turk Clashes 1963 1964
38. Cyprus Ib Coup/Turk Invasion 1974 1974
39. Domin Republic Dominican Civil War 1965 1966
40. Egypt Free Officers' Coup 1952 1952
41. El Salvador FMLN/FDR 1979 1992
42. Ethiopia I Eritrea 1961 1993
43. Ethiopia II Tigray 1975 1991
44. Ethiopia III Ogaden 1977 1978
45. Georgia I South Ossetia 1990 1992
46. Georgia II Abkhazia 1992 1993
47. Greece Greek Civil War 1944 1949
48. Guatemala I Coup 1954 1954
49. Guatemala II Guatemalan Civil War 1960 1996
50. GuineaBissau I War of Independence 1963 1974
51. GuineaBissau II Coup 1998 1999
52. India II Hyderabad 1948 1948
53. India IIIa Naga Revolt 1956 1975
54. India IIIb Nagaland 1979 1997
55. India IV Sikh Insurrection 1982 1993
56. India Ia Part/Kash/In-Pak War 1946 1949
57. India Ib Kashmir 1965 1965
58. India Ic Kashmir 1988 2001
59. Indonesia I War of Independence 1945 1949
60. Indonesia II Ambon/Moluccans 1950 1950
61. Indonesia III Acheh Revolt 1953 1959
62. Indonesia IV PRRI Revolt 1958 1961
63. Indonesia V PKI Coup Attempt 1965 1966
64. Indonesia VI East Timor 1975 1999
65. Iran I Kurds/Mahabad 1946 1946
66. Iran IIa Iranian Revolution 1978 1979
67. Iran IIb NCR/Mojahedin 1981 1982
68. Iraq I Army Revolt 1958 1958
69. Iraq II Mosul Revolt 1959 1959
70. Iraq IIIa Kurds 1961 1970
71. Iraq IIIb Kurds 1974 1975
72. Iraq IIIc Kurds 1980 1991
73. Iraq IV Shi'ite Insurrection 1991 1993
74. Israel/Palest Unrest/War of Indep 1945 1949
75. Jordan Palestinians 1970 1971
76. Kenya I Mau Mau 1952 1956
77. Korea Korean War 1950 1953
78. Laos Pathet Lao 1959 1973
79. Lebanon Ia First Civil War 1958 1958
80. Lebanon Ib Second Leb Civ War 1975 1990
81. Liberia NPFL 1989 1997
82. Madagascar MDRM/Independence 1947 1948
83. Malaysia Malayan Emergency 1948 1960
84. Moldova Trans-Dniester Slavs 1991 1997
85. Morocco I War of Independence 1952 1956

86. Morocco II Western Sahara 1975 1991
87. Mozambique I War of Independence 1964 1975
88. Mozambique II RENAMO 1976 1992
89. Namibia War of Independence 1966 1990
90. Nicaragua Rev/Contra Insurgen 1978 1990
91. Nigeria I Biafra 1967 1970
92. Nigeria II Maitatsine 1980 1984
93. Pakistan I Bangladesh 1971 1971
94. Pakistan II Baluchi Rebellion 1973 1977
95. Paraguay Coup Attempt 1947 1947
96. Peru Shining Path 1980 1999
97. Philippines I Huks 1946 1954
98. Philippines II NPA Insurgency 1969 2001
99. Philippines IIIa Moro Rebellion 1972 1996
100. Philippines IIIb Moro Rebellion 2000 2001
101. Romania Romanian Revolution 1989 1989
102. Russia Ia First Chechen War 1994 1996
103. Russia Ib Second Chechen War 1999 2001
104. Rwanda Ia First Tutsi Invasion 1963 1964
105. Rwanda Ib Tutsi Invasion/Genoc 1990 1994
106. Sierra Leone RUF 1991 2001
107. Somalia Clan Warfare 1988 2001
108. South Africa Bl/Whit, Bl/Bl 1983 1994
109. South Korea Yosu Sunch'on Revolt 1948 1948
110. Sri Lanka II Tamil Insurgency 1983 2001
111. Sri Lanka Ia JVP I 1971 1971
112. Sri Lanka Ib JVP II 1987 1989
113. Sudan Ia Anya Nya 1955 1972
114. Sudan Ib SPLM 1983 2001
115. Syria Sunni v. Alawites 1979 1982
116. Tajikistan Tajik Civil War 1992 1997
117. Tunisia War of Independence 1952 1956
118. Turkey Kurds 1984 2001
119. USSR I Ukraine 1942 1950
120. USSR II Lithuania 1944 1952
121. Uganda I Buganda 1966 1966
122. Uganda II War in the Bush 1980 1986
123. Vietnam I French-Indochina War 1946 1954
124. Vietnam II Vietnam War 1957 1975
125. Yemen Southern Revolt 1994 1994
126. Yemen North I Coup 1948 1948
127. Yemen North II N. Yemeni Civil War 1962 1970
128. Yemen South S. Yemeni Civil War 1986 1986
129. Yugoslavia I Croatian Secession 1991 1995
130. Yugoslavia II Bosnian Civil War 1992 1995
131. Yugoslavia III Kosovo 1998 1999
132. Zaire/Congo I Katanga/Stanleyville 1960 1965
133. Zaire/Congo II Post-Mobutu 1996 2001
134. Zimbabwe Front for Lib of Zim 1972 1979

Appendix C: Crosstabulation of Transition Type and Civil War

Type	war 0	war 1	Total
1	9	1	10
	9.3	0.7	10.0
	90.00	10.00	100.00
	1.53	2.22	1.58
	1.42	0.16	1.58
2	36	6	42
	39.0	3.0	42.0
	85.71	14.29	100.00
	6.12	13.33	6.64
	5.69	0.95	6.64
3	13	0	13
	12.1	0.9	13.0
	100.00	0.00	100.00
	2.21	0.00	2.05
	2.05	0.00	2.05
4	37	3	40
	37.2	2.8	40.0
	92.50	7.50	100.00
	6.29	6.67	6.32
	5.85	0.47	6.32
5	12	2	14
	13.0	1.0	14.0
	85.71	14.29	100.00
	2.04	4.44	2.21
	1.90	0.32	2.21
6	25	4	29
	26.9	2.1	29.0
	86.21	13.79	100.00
	4.25	8.89	4.58
	3.95	0.63	4.58
7	8	0	8
	7.4	0.6	8.0
	100.00	0.00	100.00
	1.36	0.00	1.26
	1.26	0.00	1.26
8	6	0	6
	5.6	0.4	6.0
	100.00	0.00	100.00
	1.02	0.00	0.95
	0.95	0.00	0.95
9	442	29	471
	437.5	33.5	471.0
	93.84	6.16	100.00
	75.17	64.44	74.41
	69.83	4.58	74.41
Total	588	45	633
	588.0	45.0	633.0
	92.89	7.11	100.00
	100.00	100.00	100.00

```
           |     92.89       7.11 |    100.00

          Pearson chi2(8) =   9.1782   Pr = 0.327
          Kendall's tau-b =  -0.0630  ASE = 0.042
+--------------------+
| Key                |
|--------------------|
|     frequency      |
| expected frequency |
|   row percentage   |
| column percentage  |
|  cell percentage   |
+--------------------+
```

Appendix D: Crosstabulation of Transition and Civil War

```
           |          war
transition |         0          1 |     Total
-----------+----------------------+----------
         0 |       518         38 |       556
           |     516.5       39.5 |     556.0
           |     93.17       6.83 |    100.00
           |     88.10      84.44 |     87.84
           |     81.83       6.00 |     87.84
-----------+----------------------+----------
         1 |        70          7 |        77
           |      71.5        5.5 |      77.0
           |     90.91       9.09 |    100.00
           |     11.90      15.56 |     12.16
           |     11.06       1.11 |     12.16
-----------+----------------------+----------
     Total |       588         45 |       633
           |     588.0       45.0 |     633.0
           |     92.89       7.11 |    100.00
           |    100.00     100.00 |    100.00
           |     92.89       7.11 |    100.00

          Pearson chi2(1) =   0.5214   Pr = 0.470
          Kendall's tau-b =   0.0287  ASE = 0.044
| Key                |
|--------------------|
|     frequency      |
| expected frequency |
|   row percentage   |
| column percentage  |
|  cell percentage   |
+--------------------+
```