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EXAMINING CIVIL WARS AND GENDER EQUALITY: THE ROLE OF WOMEN IN  
PEACEMAKING

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**Abstract**

*Despite their substantial economic and social costs, civil wars have persisted in the post-World War II era. While previous studies have attempted to isolate the causes of within-country conflict with varied success, this paper incorporates a previously overlooked determinant of civil wars: the country's gender relations. While difficult to capture in an empirical framework, the incentives for supporting insurgency causes play a role in recurring civil war—not necessarily the greed or grievances incurred by the first war. This model finds that gender relations, as measured by fertility rates, play a role in decreasing the risk of relapse into violence.*

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## **I. Introduction**

Security and economic wellbeing are inextricably linked. Economic development cannot take place during wartime, particularly in times of civil war. Conflict of all kinds disrupts a country's economy, which creates a ripple effect for others who may trade with the conflicted nation-state. Wars destroy resources, and reconstruction efforts involving financial and human resources after war can be even more expensive than the war itself. Some describe the effect of war on the economy, politics, and society as "de-development" (Brittain 2003). Lack of peace and security also imposes negative externalities on the domestic and neighboring economies. Political borders do not limit conflict, diseases, or economic degeneration. One study estimates the total cost of one civil war to be \$60 billion, far above the average income of a lesser-developed country, those that are generally more prone to civil war (Collier 2006). In addition to the economic costs, wars generate less tangible but no less important human costs in terms of pain, suffering, and loss of life (Collier and Hoeffler 2000). Understanding the costs and causes of civil war can help to minimize or prevent them.

Despite the pitfalls to continued conflict, 36% of civil wars occurring between 1945 and 1996 societies relapsed into subsequent civil wars (Walter 2004). This phenomenon has been called a conflict trap (Collier 2006).

This paper discusses the likelihood of a recurrence of civil war, based on incentives to reengage in warfare. While a wide range of possible determinants has been identified as causes of civil war, one remains largely unexplored: gender relations. Civilian casualties and the use of sexual violence as a weapon of war have risen precipitously in post-WWII civil warfare (Brittain 2003). Women are a largely underestimated demographic in influencing communities and societies. This paper tries to capture their effect in influencing the outbreak of renewed violence.

## II. Literature Review

### *Models Predicting Civil War*

Sambanis (2004) examines various definitions of civil war, honing in on specific issues to create an operational definition of civil war. He critiques the Correlates of War database and others, asking specifics of each definition: what is the difference between internal armed conflict and civil war; when does civil war start and end; and how does one differentiate between civil war and other kinds of war? After creating a very thorough operational definition of civil war, Sambanis uses data fitting that definition in a dynamic probit model. He notes which variables are significant across differences in coding rules, such as income level and population size, and describes why that may be. He concludes with a concern that current models for predicting civil war are more accurate in predicting war for those that already have a history of conflict, versus those that may not have conflict-ridden histories.

Ward, Greenhill, and Bakke (2010) warn about large sample sizes of conflicts in determining which variables are important in forecasting the occurrence of war. The models may produce statistically significant results, but those significant factors are often not theoretically sound. Thus, policy predictions based on those variables may lead to policies that are not ideal for each conflict situation.

Ward et al. (2013) explore the positive side of using statistical models to predict political situations. Not only are models becoming increasingly accurate, they argue, but when models are used correctly, they can effectively inform public policy decisions. The authors demonstrate the level of accuracy possible in predicting a civil war with a logit regression.

Fearon and Laitin (2003) question why there was such a seemingly significant increase in the number of civil wars that occurred after 1991, or the fall of the Soviet empire. They find that, instead of civil wars being encouraged by the change in the international system's dynamics, there has been a long-term increase in the amount of civil wars since WWII. Fearon and Laitin determine that ethnic and religious fractionalization, or religious and political grievances are not necessarily significant factors in predicting civil war outbreak. They explain this with their Insurgency Theory. In their regressions, the most significant factors are those that create ideal conditions for an insurgency—weak governments, rough terrain, large populations, and access to foreign support and thus weapons for the insurgency.

Collier (2006) discusses the possible causes and costs of civil wars, using the same rule of classifying civil war as many other scholars and the Correlates of War database, "A civil war is classified as an internal conflict with at least one thousand battle-related deaths." As a leading civil conflict scholar, he discusses why looking at civil conflicts is best with an economist's viewpoint—it allows one to see the root problems under the various reasoning for war. He indicates what he has found to be the most important factors in determining structural factors that may lead to a civil war: geography, a history of conflict, diasporas, economic opportunities, and domination of society by one ethnic or religious group. Collier then suggests a few different policy solutions for some of the variables, such as increasing international regulation of raw goods on the black market commonly used to fund rebel groups (diamonds and oil, for example) and scribing ethnic minority rights into a powerful constitution. He also prescribes post-conflict policies, mentioning the fragility of peace agreements in their early years. He emphasizes again the problem of resource-dependent countries, noting that they are even more in danger of recidivism if they continue to base their economies on raw materials post conflict.

Blimes (2006) asks the question many wonder: why are there so many mixed results in large-n studies on whether ethnic fractionalization is significant in predicting civil war? Conventional wisdom would say that it is important, providing easy lines for societies to divide into warring parties. However, the mixed results from large-n studies, such as those mentioned here, lead to confusion. Blimes uses a heteroskedastic model and shows that ethnic heterogeneity of a country instead has an indirect effect on the probability of a civil war occurring.

Collier and Hoeffler (2000) give reasons why greed and grievance are two drivers for populations to war against each other. Greed for control of the resources of the country, or long strings of grievances finally pulled tight enough to break the peace. They begin by creating theoretical models of greed and grievances inciting rebellion alone, then another wherein they interacted in a feedback effect: greedy groups need to have grievances to lure more people to support their cause, and grieved groups need resources to support their efforts to assuage those grievances, creating a loop. Then, the authors use a logit regression to empirically examine civil wars, discovering that proxies for grievances are largely insignificant, while those of greed are significant. Overall, they suggest that greed for resources causes the initial conflict, then the grievances from that create situations in which the grievances compound to make further war increasingly attractive.

Cevik and Rahmati (2013) evaluate the risk of conflict recurrence in post-conflict situations using macroeconomic data. They find that there were many significant factors in determining this. One of which is the geographic location of the country—whether it was landlocked, resource-dependent, and more. They defied conventional wisdom in that their regressions did not show that UN Peacekeepers made a significant contribution to the peacemaking process.



### *The Post-Conflict Situation and Peace Duration*

Collier, Hoeffler, and Soderbom (2008) examine tasks ahead of post-conflict societies—mainly economic recovery and reducing the risk of conflict relapse. They state that almost half of civil wars may be attributed to previous wars. Among other revelations, they find that UN Peacekeeping presence and expenditure significantly reduces risk of recurrence, and that resources and their allocations play important roles in the duration of peace.

Mattes and Savun (2010) provide insight as to why civil wars recur because of information asymmetry. They discern that uncertainty about military capabilities of each side can lead to civil war recurrence. Using a Cox proportional hazards model, they find that those peace agreements that contain the three uncertainty-reducing measures prescribed by the authors reduce the likelihood of conflict recurrence by 84% compared to those that do not.

DeRouen and Bercovitch (2008) create a new framework for studying enduring civil wars: the enduring internal rivalry (EIR). They find that, from the civil wars that occurred between 1946 and 2004, 76% of those were because of an EIR. Using a logit model, they find that civil wars comprised of EIRs have a higher probability of recurrence. Using a hazard analysis, they find that those also have shorter peace duration.

Flores and Nooruddin (2009) observe the factors behind post-conflict economic recovery using a duration analysis. They find that the post-conflict political transition to democracy actually slows economic growth in the short run. This supports other literature on the dangers of democratization. Their data also shows that an absolute military victory establishes a longer lasting peace than peace comprised of multiple parties.

Quackenbush and Veneicher (2008) study the differences in post-conflict resolutions in their impacts on stability in the future. They gathered data from dyadic disputes between 1816 and 2001, and find that settlement type is an important factor in the recurrence of conflict. Surprisingly, however, they see that settlement type does not have an impact on peace duration.

Walter (2004) empirically analyzes why civil wars recur—do they repeat the same war, or is violence more commonly renewed for different reasons? Agreeing with Fearon and Laitin's investigation of why civil wars happen, she finds that those conditions that prime people for individual enlistment in rebel armies—such as low quality of life and high barriers to political access—are key in predicting violence renewal. She states that while some aspects of previous wars do not make a difference in the outbreak of the next, there exist two that encourage relapse and violence persistence: the length of war and the type of peace agreement, particularly partition agreements.

### *Gender and Human Capital*

Regan and Paskeviciute (2003) studied the propensity for dyads to break into militarized interstate disputes (MIDs), and included variables based on gender participation. Using various hypothesis tests on a logit model, posit that women have a peacemaking effect on interstate relations and disputes. They incorporated measures of women's involvement in society as percentage of women in parliament and fertility. Both are proven significant in their regressions on the prediction of MIDs, increased hostility and fatalities.

Jansen (2006) discusses gender inequality in war, arguing that women are disproportionately affected because they are more vulnerable in terms of health and mental

health. She states that civilian casualties have risen precipitously in recent years, and notes that sexual violence, particularly against women, comprises a major part of that.

Caprioli (2003) hypothesizes that gender inequality on the domestic level would increase the probability of intrastate violence, using fertility rate to measure gender inequality. They test their hypotheses using the UCDP/ PRIO and COW databases, and compare results. The UCDP/ PRIO dataset contains more conflicts because its definition of intrastate conflict holds a lower threshold for battle deaths than that of the COW's definition of civil war, which has a threshold of 1,000 battle deaths. Interestingly, the gender-related variables proved significant in the UCDP/ PRIO dataset, versus the COW's, in which they were not significant.

### **III. Methodology**

This paper discusses the likelihood of a recurrence of a civil war. I define "civil war" as an intrastate conflict, according to a leading authority on conflict: the Uppsala Conflict Data Program (UCDP). They define intrastate conflict as "conflict between a government and a non-governmental party," (UCDP). Additional restraints are put on the idea of civil war by the Correlates of War database, from which most of the war information comes. They restrain civil wars to those with 1,000 battle deaths occurring in one year, in order to discount those conflicts that could be classified as something else, such as riots, terrorist attacks, and some violent coups. (Correlates of War).<sup>1</sup> The model analyzes those countries that began a civil war after 1945 and ended by 1996. Those that relapsed into war and were still ongoing at the end of 1999 were dropped from the dataset.

Ward et. al. (2013) demonstrate the accuracy of a logit model in predicting civil wars. This paper uses a logit model with robust standard errors to estimate the likelihood of intrastate

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<sup>1</sup> The qualifying conflicts may be found in Appendix 1.

conflict recurrence based on what happened during the war and life post-war, using data from various sources<sup>2</sup>. Initially, this paper uses a replication dataset obtained from Walter's 2004 paper, "Does Conflict Beget Conflict: Explaining Recurring Civil War," in the *Journal of Peace Research*'s open-source archives of data. Walter uses a pooled, random effects logit. Intuitively, one may think the model should use fixed-effects. However, because this model studies peace years that are not consistent across panels and contains time-invariant variables from the war, a random effects model must be used. I continue the analysis of recurrent civil war by testing hypotheses using a pooled, random effects logit model with robust standard errors and taking an alternative view of society<sup>3</sup>.

A part of an economy's human capital remains largely unexplored in the conflict literature: the effect of gender divisions on conflict. During conflict, women take on the primary economic responsibilities, and play a role in conflict resolution. However, the results of those actions are, as acknowledged by the Secretary-General of the United Nations, "still under examined and underutilized" (UN 2001). Regime types are a way of creating a proxy for how power is distributed throughout society, and women are a largely underestimated demographic of that group. No less, women are increasingly affected by war since WWII with the increased rates of civilian casualties. 15% of casualties in WWI were civilian, 65% in WWII, and 90% in more recent wars (Brittain 2003). Those civilians are predominantly women and children (UN Theorists say that women's involvement on the community and societal levels can act as a constraint on the use of militarized force (Caprioli 2003, Regan and Paskeviciute 2003). This paper empirically tests that theory.

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<sup>2</sup> The sources may be found in Appendix 2.

<sup>3</sup> Another model, specifically tailored for rare events, was used, however, the robust pooled logit model was a better fit according to pseudo-r<sup>2</sup> values and their significances.

### *Explanatory Variables Based on Gender*

This paper takes another view of society as a whole having an effect on an individual's incentives to fight again. Citing research on militarized interstate disputes (Regan and Paskeviciute, 2003), I factor in the possibility of gender issues affecting civil war recurrence. Women are generally more vulnerable to attack during civil wars, a situation which is worsened because the rising amounts of civilian casualties and popularity of using sexual violence as a weapon of war in the post-WWII era. Research has also shown that the inclusion of women in the peace process creates longer-lasting peace agreements (Jansen 2006).

Gender inequality and women's roles in the peacemaking process has played a part in warfare for many years, notably in Grecian times in Aristophanes' *Lysistrata* in which women on both sides refused to sleep with their men until peace was reached. More officially, in 1915, the International Congress of Women in The Hague was a peacemaking effort by the women of both sides of WWI, formed to communicate between the warring parties and plead for peace among leaders (Jansen 2006). Because gender issues came into the spotlight in more recent years (UNSC 2000), finding a proxy variable to measure the respect for women in society going back to where the dataset begins— immediately after World War II— is a challenge. There is no direct way to measure women's roles in different societies, and even the data offered by various sources does not often reach back to 1945. Instead, this paper uses the ratio of boys' to girls' school enrollment and fertility rates.

Neither selected proxy variable, as per its nature of being a proxy, perfectly represents the status of women in each society. School enrollment will likely decrease during a civil war, simply because of the dangers involved in leaving home during times of war. Boys may be called away to fight for the cause. Girls may have increased incentive to leave school in order to fulfill

the duties left undone by the absent men. In addition, the security environment in which they find themselves may decrease their incentive to go to school for fear of punishment by the radical, ruling party in that area (UNESCO).

Fertility rates are commonly associated with GDP per capita, because generally, as countries develop, birth rates drop. Low birthrates are associated with economic access through increasing the amount of time women have to participate in the labor force, and freeing up resources that would have normally been used on additional children on further consumption (RAND Corp. 2008, Caprioli 2003). Fertility rates relate to political access for related reasons. The amount of time women spend on rearing children decreases their time available for political participation and access to knowledge (Caprioli 2003). In addition, the importance of having more children increases as the death count for each war also increases.

#### *Other Explanatory Variables<sup>4</sup>*

Theorists attribute the relapse into renewed war to many factors. Some postulate that this phenomenon happens because of variables of the previous war, some the peace agreement, and some attribute recidivism to life after the war. I add on to these by taking another view of society and ask the question how gender relations may affect the probability of relapse into violence.

Civil wars may persist because of the type of conflict—those conflicts between differing ethnic groups are infamous for their ferocity and long-lasting grievances (Blimes 2006). For this reason, a dummy variable for ethnic warfare is included in the regression, coded as 1 if the war fell along ethnic lines.

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<sup>4</sup> One may have expected GDP or GDP per capita to be included in the regression. Due to high correlation with several control variables, GDP was excluded from the model. Collier (2006) points out that the source of income can influence whether a country will fall into violence. No less, because wartime years may cause the country to backslide in terms of development, there may be a reverse causation issue with determining GDP's effect on subsequent warfare. Finally, various other papers including Walter (2004) do not include GDP in their regressions.

More grievances may be incurred by the consequences of the war, such as war-related deaths, the duration of the war, and the amount of displaced persons in the war. The casualty count and amount of displaced persons increase the longer the war lasts, creating massive human and economic costs. Homes are rendered unstable by grief and insufficient resources, destroyed by war. No less, during the war, many people run from the violence into refugee camps. These are uncertain places, temporary housing until it is safe to go home. But if their homes are destroyed, where should these people go after the war is over? Displacement of people may be an insidious indicator for the likelihood of renewed war.

The type of victory may play a part in recidivism. A decisive military victory may help the new government control the former warzone, however that also usually leads to a powerful, more autocratic government. Generally, democracies tend to be more peaceful societies (see, for example, Doyle 2005, amongst many), and so a dummy variable for a decisive victory and the level of democracy in a country are included in the model.

Next, peace agreements influence peace duration. Partition agreements have a confused history of either causing more violence or putting an end to it once and for all. To attempt to make their effects clearer, a dummy variable is included in the model for a peace made by partition agreement.

Collier and Hoeffler (2000) comment that rebel groups may make harsher demands if their grievances are accordingly severe. Those rebels were expressly fighting for control of the government. Those are accounted for in a dummy variable, “total goals,” coded as 1 if they aimed for overthrow of the current government, and 0 if their initial goals were less extreme. Even if the insurgency was not aiming for new control of the government, the settlement of the rebels’ initial grievances will hopefully be resolved in the peace treaty.

The early years of a peace agreement tend to be the most tenuous (Collier 2006). Once a peace agreement has survived its first five years, it is more likely to persist, and so those years are included in the model.

Life after war will affect incentives to relapse into civil war. Development has to restart after the destruction and “de-development” resultant of the violence (Cevik and Rahmati 2013, Brittain 2003). Quality of life hopefully increases after the war, and infant mortality and fertility rates serve as indicators of the health of the people, the development process, and the gender relations in the country (Brittain 2003, Caprioli 2003, Regan and Paskeviciute 2003).

#### **IV. Results**

This model had to address a few statistical anomalies. Multicollinearity was a problem between several variables. Because of the nature of the regression, the dependent variable is discrete; heteroskedasticity is corrected for by the use of robust standard errors; the error term is assumed to be uncorrelated with the regressors, and the key variable of interest is assumed to be exogenous.

One may note that only one variable was used to capture the effect of gender relations in society. Specifications were explored using the proportion of girls’ school enrollment and the proportion of female deaths, however because of statistical problems, they had to be dropped from the model.<sup>5</sup>

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<sup>5</sup> Unfortunately, the proportion of girls’ school enrollment had to be dropped from the regression. It was unavailable for so many countries and highly collinear with other control variables that the schooling ratio’s effect was probably captured within the model. The proportion of women’s deaths in total deaths was also dropped from the regression model due to many missing observations and high collinearity with other variables. Furthermore, this ratio is a poor measure of violence against women because it reflects all other sources of mortality.



**Table 1: Subsequent War Robust Logit Regression Results**

<i>Subsequent War</i>	<i>Coefficient (Standard Error)</i>
Ethnic War	0.106 (0.588)
Total Goals	-1.23 (0.689)*
War-Related Deaths	0.082 (0.205)
Duration	-0.359 (0.138)***
Decisive Victory	-0.418 (0.552)
Grievances Settled	0.445 (0.537)
Displaced Persons	0.049 (0.059)
Partition	1.631 (0.770)**
Level of Democracy	0.001 (0.035)
Infant Mortality	0.033 (0.015)**
Peace Years (first 5 years of)	-0.478 (0.264)*
Fertility Rate	0.248 (0.121)**
Constant	-1.877 (1.538)
Number of observations	1010
Pseudo-R <sup>2</sup>	0.092
Wald Chi <sup>2</sup> p-value	0.008

\*significant at the .10 level

\*\*significant at the .05 level

\*\*\*significant at the .01 level

The model shows that war is significantly less likely to occur if the rebels took over government control. This could be for several reasons. The ideal scenario is that in which the rebels took over control and the population was so satisfied that they no longer felt the need to fight again. Unfortunately, this could be a longer-lasting effect of the conflict trap (Collier 2006). Conflicted societies tend to swing between anarchical periods (the civil wars) and periods under tyrannical control. Often, when the rebels win over complete government control, they rule like the tyrants against whom they fought so hard.

Some argue that the longer a war continues, the likelier that the nation will relapse into conflict. Enduring internal rivalries (DeRouen and Bercovitch 2006) can rile up citizens into continued conflict. However, some argue that the costs of war take such a toll on the economy and society that the incentive to relapse into war powerfully diminishes. Both arguments could be right—the threshold of 1,000 battle deaths could represent or cross another threshold of

violence and destruction to make recidivism less appealing. At lower levels of violence, the duration of the war could have a smaller impact on relapse into violence. This model shows that the risk of subsequent war decreases in longer wars, presumably because the human and economic costs were so high that the incentive to relapse into war was sufficiently reduced to assure peace.

Just as the duration of the war is important, the longer the duration of the peace, the likelier that it will continue. The first five years of a peace agreement tend to be the most tenuous. However, the results of this model shows that the five years of peace decreases chances of another war. This confirms that once that time period has passed, the peace is likelier to hold.

Partition agreements increase the likelihood of repeated warfare. Not only do partition agreements force migration, which decreases stability in the daily lives of the population, but they also create a situation in which information on the strategies of the new states is harder to obtain, thus increasing the threat perception of the new countries (Mattes and Savun 2010, Quackenbush and Veneicher 2008). The enduring internal rivalries (DeRouen & Bercovitch 2006) resonant from the civil war could continue even after a partition agreement.

With a higher infant mortality rate, probability of renewed violence increases. Infant mortality directly affecting warfare is more challenging to explain. How would the amount of children dying within the first five years of life affect the propensity of a nation to be violent? I suggest that infant mortality is instead another indicator of health within the community and thus development of the country. If communities are unsafe, public health decreases. According to a policy briefing from the RAND Corporation in 2008, infant mortality rates tend to fall as countries develop. However, noting vast differences in infant mortality rates between countries with similar GNPs, they studied the variables most commonly associated with economic

development and infant mortality, and found that the mothers' education was the strongest reason why infant mortality rates decreased. As increased education is a large part of development, this result makes sense.

This model shows that higher fertility rates increase probability of war. There may be several probable reasons for this. Couples may choose to have larger families to compensate for the expected losses of children from the violence, or from the desperation resultant of the times. Fertility rate and GDP per capita are, generally, inversely related, so the model's result could also indicate the level of development of the country. As most of the countries in this sample are lower-developed countries, a high fertility rate makes sense. The fertility rate could either be a reaction to the violence or have a destabilizing effect. No less, as Caprioli (2003) discusses when rebel leaders are generating support for their cause, they oftentimes use women as an example of a victim to galvanize the men into joining the military ranks. Because of this, women are pressured into more established roles in the home as wives and mothers. This also contributes to the explanation of a higher fertility rate correlating with subsequent warfare—because the rebel recruitment encourages more traditional roles, the women are forced away from non-traditional roles. More resources are devoted to having children. Not only does this often have a negative effect on the potential GDP per capita, it also damages society as a whole. Women who are at home taking care of children are neither participating in the formal labor force nor the political realm.

## **V. Conclusions**

One must always regard statistical models, particularly of such complex situations as war, with a certain amount of skepticism. Large  $n$  studies can produce results that may not hold true

for all situations (Ward et. al 2013, Ward, Greenhill, and Bakke 2010). This analysis generally looks at large, structural factors. No doubt, going on a case-by-case basis and analyzing short-term risk variables would create a more accurate model of risk of civil conflict recurrence.

Keeping that in mind, this analysis suggests that duration, partition agreements, a peace lasting at least five years, infant mortality rates, and fertility rates are the variables that make significant impact on the persistence of civil conflict.

The effect of women on recurrent conflict still remains under-examined. This analysis is only one small step toward discovering the true roles of women in conflict. While my results show that women have no great effect on war recurrence, there are limits to my study that one must be aware of, and into which future researchers may look more. My proxy variables or regression themselves may be imperfect, as mentioned earlier.

### *Suggestions for Future Research*

Future research should expand the dataset to current day. Next, another aspect of a more updated dataset is the inclusion of the “Arab Spring.” The outbreak of violence in the Middle East and North Africa may provide a theoretical base for a regime change to be included in the analysis.

United Nations Security Council Resolution (UNSCR) 1325 is a powerful document on the effects of war on women, and vice-versa: how women affect war. With a more current dataset, future researchers may use this as a point for a possible regime change over relations of women in war.

Because fertility rate and infant mortality rate are statistically significant in this analysis, one may look more into the effect of demographics on civil warfare. There is already a fair

amount of literature of the effect of youth bulges on the propensity of nations to go into conflict, but other researchers may look into the persistence of wars based on demographics, such as youth bulges and the gender relations within those youth bulges. How empowered are women in those societies in where there exist so many young people? How are those young women making a difference for peace in their communities?

Collier (2006) differentiated between two different reasons why peace had to be reached: “Peace requires that either the intense political conflict continue but that the military option of conducting it should be made infeasible, or that the political conflict should itself be resolved.” There are huge implications to each kind of peace. Future researchers may differentiate between which type of peace was made, and if gender relations play a role in which type of peace was reached.

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## VII. Appendices

### Appendix 1: Qualifying Conflicts (adapted from Walter, 2004)

Post-Conflict Peace Periods that began between 1946-1996: (Dates indicate the years of peace through 1999). Wars that were ongoing at the end of the time period (1999) are not included in the data set since there is no opportunity for renewed conflict to occur. Countries marked with an asterisk (\*) all experienced an ongoing subsequent war (as of 12/31/99).

Algeria (1963-1999)	Jordan (1970-1999)
Argentina (1955-1999)	Laos (1973-1999)
Bolivia (1952-1999)	Lebanon (1958-1975)
Burma (1951-1968)	Lebanon (1976-1999)
Burma (1980-1993)*	Liberia (1994-1999)
Burundi (1972-1988)	Mozambique (1992-1999)
Burundi (1988-1991)*	Nicaragua (1979-1982)
Cambodia (1975-1979)	Nicaragua (1990-1999)
Cambodia (1991-1999)	Nigeria (1970-1999)
Chad (1987-1999)	Pakistan (1971-1973)
China (1949-1967)	Pakistan (1977-1999)
China (1968-1999)	Paraguay (1947-1999)
Colombia (1964-1984)*	Philippines (1952-1972)*
Congo (1965-1999)	Romania (1989-1999)
Costa Rica (1948-1999)	Rwanda (1964-1990)
Cuba (1959-1999)	Rwanda (1994-1999)
Dominican Republic (1965-1999)	South Yemen (1986-1999)
El Salvador (1992-1999)	Sri Lanka (1971-1983)*
Greece (1949-1999)	Sri Lanka (JVP) (1989-1999)
Guatemala (1954-1966)	Sudan (1972-1983)*
Guatemala (1996-1999)	Tajikistan (1994-1999)
India (1993-1999)	Uganda (1966-1980)
Indonesia (1950-1953)	Uganda (1988-1999)
Indonesia (1953-1956)	Vietnam (1975-1999)
Indonesia (1956-1999)	Yemen Arab Republic (1948-1962)
Iran (1979-1981)	Yemen Arab Republic (1962-1999)
Iran (1982-1999)	Yugoslavia Croatia (1992-1995)
Iraq (1959-1991)	Yugoslavia Bosnia (1995-1999)
Iraq (Kurdish/Shiite) (1991-1999)	Zimbabwe (1979-1999)

**Appendix 2: Sources of Data**

*Ethnic War*: coded as 1 if the war was categorized as ethnic warfare by Walter (2004).

*Total Goals*: coded as 1 if the rebels' goal was to take over control, versus making demands such as political reform, more autonomy, et cetera by Walter (2004).

*War-Related Deaths*: from a threshold of 1,000 battle deaths, obtained by Walter (2004) from the Correlates of War Database

*Duration of War*: obtained and logged by Walter (2004) from Correlates of War Database

*Displaced Persons*: obtained and logged by Walter (2004) from Sambanis (2000), measures the number of displaced persons due to war.

*Grievances settled*: dummy variable coded as 1 if the terms of a treaty resolved the main rebel grievances stated at the beginning of the war; information obtained by Walter (2004) from *Keesing's Contemporary Archives*, the Initiative on Conflict Resolution and Ethnicity, and the African Centre for the Constructive Resolution of Disputes, and individual histories.

*Decisive Victory*: dummy variable coded as 1 by Walter (2004) if the war ended with a decisive win on either side.

*Partition*: dummy variable coded as 1 by Walter (2004) if the peace included a partition agreement; obtained from Sambanis (2000)

*Infant Mortality Rate*: obtained by Walter (2004) from the Socio-Economic Data Division of the World Bank's International Economics Department.

*Democracy*: obtained by Walter (2004) from the Polity III dataset, a rating scale of democracy to autocracy.

*Peace Years*: number of peace years after the war, counted by Walter (2004).

*Fertility Rate*: obtained from the UN Population Prospects.

*Schooling Ratio*: obtained from the Barro & Lee dataset.

*Deaths Ratio*: obtained from UN Population Prospects.

**Appendix 3: Pairwise Correlation Results**

	Subsequent War	GDP/ Capita	Fertility Rate	Deaths Ratio	Schooling Ratio	War-Related Deaths	Democracy
Subsequent War	1						
GDP/ Capita	-0.0261	1					
Fertility Rate	0.0334	-0.5932	1				
Deaths Ratio	-0.0135	-0.3115	0.384	1			
Schooling Ratio	-0.151	-0.3554	0.1131	0.2728	1		
War-Related Deaths	0.0179	-0.0542	-0.0211	0.1995	-0.4277	1	
Democracy	-0.0257	0.3606	-0.2872	-0.212	0.0619	-0.0518	1
Duration	-0.0103	-0.2014	-0.0487	0.2022	-0.2035	0.6921	-0.0774
Ethnic War	0.0503	-0.3614	0.311	0.3083	-0.3305	0.1756	-0.3062
Infant Mortality	0.0481	0.135	-0.1568	-0.0364	-0.2195	-0.0197	0.0295
Partition	0.0355	-0.1137	-0.0998	-0.0573	.	0.0813	-0.1826
Displaced Persons	0.0135	0.0127	-0.1021	0.1007	-0.3883	0.5453	-0.1147
Settle Grievances	-0.0009	-0.0085	-0.0636	-0.1012	0.3305	0.0107	0.166
Total Goals	-0.0437	0.2131	0.0108	-0.1559	0.4693	-0.3359	0.0896
Decisive Victory	-0.0081	-0.0148	0.1916	0.0527	0.0778	-0.1319	-0.1474
Peace Years	-0.0089	0.1347	-0.1398	-0.0492	0.0678	-0.0655	0.0061

(Continued on next page)

	Duration	Ethnic War	Infant Mortality	Partition	Displaced Persons	Settle Grievances	Total Goals	Decisive Victory	Peace Years
Duration	1								
Ethnic	0.1952	1							
Infant Mortality	-0.058	-0.004	1						
Partition	0.2087	-0.0258	-0.1076	1					
Displaced Persons	0.5815	0.0291	0.0386	0.099	1				
Settle Grievances	0.022	-0.3892	-0.0655	0.1664	0.2326	1			
Total Goals	-0.3353	-0.4763	-0.0019	0.0324	-0.0446	0.357	1		
Decisive Victory	-0.2975	-0.0039	-0.0087	-0.0506	-0.3108	-0.0657	0.1321	1	
Peace Years	-0.0764	-0.0648	0.0318	-0.0631	-0.1008	-0.1018	0.0682	0.1162	1

#### Appendix 4: Odds ratios and Marginal Effects

Table 1: Subsequent War Odds Ratios

<i>Subsequent War</i>	<i>Coefficient (Standard Error)</i>	<i>Odds Ratio</i>	<i>P-Value</i>
Ethnic War	0.106 (0.588)	1.512	0.857
Total Goals	-1.23 (0.689)	0.292	<b>0.074</b>
War-Related Deaths	0.082 (0.205)	1.085	0.688
Duration	-0.359 (0.138)	0.699	<b>0.009</b>
Decisive Victory	-0.418 (0.552)	0.658	0.449
Grievances Settled	0.445 (0.537)	1.561	0.407
Displaced Persons	0.049 (0.059)	1.050	0.412
Partition	1.631 (0.770)	5.108	<b>0.034</b>
Level of Democracy	0.001 (0.035)	1.001	0.969
Infant Mortality	0.033 (0.015)	1.034	<b>0.025</b>
Peace Years (first 5 years of)	-0.478 (0.264)	0.620	<b>0.070</b>
Fertility Rate	0.248 (0.121)	1.282	<b>0.040</b>
Constant	-1.877 (1.538)	0.153	0.223
Number of observations	1010		
Pseudo-R <sup>2</sup>	0.092	Wald Chi <sup>2</sup> p-value	0.008

Table 2: Subsequent War Conditional Marginal Effects

	Mean	dy/dx (Marginal Effect)	Standard Error	P-value
Duration	2.171	-0.005	0.002	0.007
Infant Mortality	-3.586	0.001	0.0002	0.026
Peace Years	4.838	-0.007	0.004	0.08
Fertility Rates	5.080	0.004	0.002	0.032
Number of observations	1010		Model VCE	Robust

Expression: Pr (Subsequent War), predict( )