

Third Party Intervention and the Duration of Civil Wars:

The Role of Unobserved Factors

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Abstract

This paper examines how third party intervention affects the duration of civil wars. Past research finds that intervention leads to longer duration. However, this work may suffer from model misspecification given that the unobserved factors that contribute to the duration of war—such as high levels of resolve among the combatants—may also determine whether interventions will occur. This argument is tested by simultaneously estimating models predicting intervention and the duration of civil wars, and then examining the correlation of the errors terms from the two equations. Results show that unobserved factors leading to UN intervention and civil war duration are positively correlated, which casts doubt on the conclusion that intervention lead to longer civil wars.

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The dramatic increase in civil war research in the last decade has presented both the scholarly community and policy-makers with an abundance of useful findings relating to the onset, duration and termination of civil war. While this research has advanced dramatically, several puzzles remain. One of these puzzles is the effect of third party interventions on the duration of civil wars. Empirical results have shown quite consistently that interventions in civil wars are generally associated with wars of longer duration (Pearson, 1974; Mason, Weingarten & Fett, 1999; Balch-Lindsay & Enterline, 2000; Elbadawi and Sambanis, 2000; and Regan, 2002).¹ The most common explanation for this finding is that third parties exacerbate the tensions in an ongoing civil war, making it drag out longer than it would have otherwise. From this conclusion, it seems that policy makers have little option to lessen the harmful consequences of civil war other than to let the belligerents fight it out. Given the devastating consequences of civil wars, it is important that researchers take a closer look at how interventions may affect civil war to ensure the veracity of this claim.

One possible explanation for these findings is that third parties may strategically choose to intervene in certain types of civil wars. Interveners focused on humanitarian considerations may purposefully choose to intervene in civil wars that are likely to have long durations because they only see a need to intervene when they expect settlements to be unlikely. More selfish interveners might choose wars that were likely to end quickly anyway, hoping to gain leverage over the post-war country with as little investment as possible. Demand for intervention by the belligerents may also increase as the civil war drags on due to war weariness. Each of these factors is difficult to observe directly and, therefore, go largely unexamined in empirical models. If it is true that interveners are not randomly selecting civil wars in which to intervene, then it is possible that these counter-intuitive findings are a result of model misspecification.

This potential problem has not been altogether ignored in the literature. For example, Regan (2002: 57) explains that third parties may choose to intervene in long-running wars, rather than the intervention itself extending the duration of the war. While the theory regarding non-random intervention exists, until now it has been impossible to test the competing explanations because scholars lacked a proper method to deal with non-random selection in a duration model. This paper seeks to address this problem both theoretically and empirically by examining whether there is any relationship between the unobserved factors affecting the decision of a third party to intervene in civil wars, and the duration of the civil war itself. If it is found that the same unobserved factors drive both the duration and likelihood of intervention, it is possible that interventions are correlated with longer civil wars because of these unobserved factors. This would cast serious doubt on past studies claiming that interventions lead to longer civil wars. If no relationship is found, however, the tests provide additional evidence to support the notion that third party interventions have negative consequences for the termination of civil wars.

INTERVENTION AND DURATION: PAST SCHOLARSHIP

Two literatures are reviewed in this section, both of which focus on the role of third parties in civil wars. The first examines the characteristics of civil wars that attract interventions, while the second looks at how these interventions affect the duration of civil war. These two areas of research are then brought together in the theory and empirical portions of the paper.

Beginning with factors explaining intervention, Regan (2000) stands as the most comprehensive work predicting what types of wars are likely to receive interventions.² Regan (2000, 2002) develops a rationalist model of third party decisions to intervene in ongoing civil wars. Factors such as the expectation for success, a short projected time horizon, and domestic support or opposition for intervention help explain the occurrence of intervention. His empirical

findings suggest that interventions are more likely in cold war years and in wars with high total casualties, while intensity (casualties per year) and the number of state borders make interventions less likely (Regan, 2000: 57). Elbadawi and Sambanis (2000: 13) present a similar model predicting UN interventions, finding that deaths and displacement, the level of democracy in the warring state, and wars in Africa attract UN interventions, while ethnic wars, the size of the warring government's army and the level of democracy in the region make interventions less likely.

A second body of research examines how third party interventions affect the duration of civil wars. Licklider (1993, 1995) argues that the decision to negotiate a settlement during a civil war is a function of the warring parties' internal capabilities, which can be influenced by external interventions. Biased interventions on behalf of either side likely tip the balance of capabilities, giving one side a dominant advantage over the other. The weaker party, seeing continued fighting as futile, is more likely to settle. In a more refined argument, Elbadawi and Sambanis (2002) argue that biased interventions on behalf of rebels, who are likely to be weaker during the early stages of the war, are likely to lead to the longest civil wars. These arguments contrast somewhat with empirical work from Balch-Lindsay and Enterline (2000), who find that third party support for the government leads to long civil wars while balanced interventions have the opposite effect.

The most comprehensive work examining how third party interventions affect the duration of civil war comes from Regan (2002). According to Regan, both the rebel's and government's decision to continue fighting is a function of their expectations of future victory, current costs, and anticipated costs. Both the timing and type of intervention affects these decisions. For example, early interventions on behalf of the government should shorten the

duration of war because they give the government, who is likely to already have a stronger military force than the rebels, a preponderance of power, making the rebel calculation of their probability of victory so low as to make continued fighting pointless. Early interventions on behalf of the rebels, in contrast, give the rebels a glimmer of hope, which should lengthen the duration of conflict. Regarding neutral interventions, Regan (2002: 63-4) explains that these are likely to decrease the duration of war by distributing resources, rather than weapons. By affecting the underlying causes of the civil war, such as an unequal distribution of wealth, neutral parties increase the costs of rebel recruitment, which should lower the group's probability of victory and ultimately make them more likely to settle the conflict. Contrary to these theoretical expectations, Regan's (2002: 71) empirical results show that third party interventions, whether on behalf of the rebels or the government, overwhelmingly decrease the likelihood that a war will end.

According to the literature cited above, results from past research present a dilemma for policy-makers seeking to lessen the harmful effects of civil wars. As Regan (2002: 72) suggests, "If the objective of an intervention is to shorten the length of a civil conflict, then an outside military or economic intervention is not a terribly effective strategy to do so." The remainder of this paper further probes the theory, results, and policy advice from these two literatures.

COMPETING EXPLANATIONS

As explained above, past research presents consistent findings that the intervention of third parties in civil conflicts is associated with longer civil wars. Two theoretical arguments exist to explain these findings. The first suggests that third parties actually exacerbate the causes of civil war (Touval, 1994). Doyle (2001: 538) explains that the 1994 UN intervention in Somalia mobilized nationalist opposition, contributing to a significant growth of support for

Aideed's supporters who rallied against UN "colonialism." This explanation leads to the conclusion that third party intervention will exacerbate the problems within a state, which suggests that the international community should let the belligerents fight it out.

The competing theoretical explanation is that the UN and other actors choose to intervene in the most difficult-to-solve conflicts (Regan, 2002: 57). Results showing the opposite conclusion, therefore, suffer from some degree of selection bias. While empirical results indicate that interventions lead to longer civil wars, this is because interveners choose to intervene in civil wars that would have been long anyway and, thus, interveners do not exacerbate the costs of the war. This argument suggests that the international community may indeed help lessen the harmful impact of civil war by shortening an otherwise intractable conflict. While the first explanation has been examined in great detail in the literature, the second has received far less attention. The following paragraphs seek to fill this gap in three steps. First, a definition of "unobservable factors" is clarified. Second, the unobservable factors in civil wars that influence civil war duration are explained. Third, it is argued that the same unobservable factors that affect duration may also influence a third party's decision to intervene in an ongoing war. Arguments are offered for both UN and independent state interventions.

Unobservable factors are defined as those factors that scholars currently do not capture using existing data and models of civil war duration. In reality, few factors are truly unobservable. It is likely that potential interveners (states and the UN) are able to observe factors—such as resolve—that are not being observed with existing models. When policy-makers are deciding whether or not to intervene in a crisis, they seek information beyond what is currently published in academic journals. This is because area specialists, diplomats, and other intelligence-gathering groups are in many ways better able to capture the nature of an individual

civil conflict by looking beyond factors that can be objectively captured for a large N study. Journalists in war zones often report on the general mood of the population, their feelings towards the combatants, or the morale of the troops. Likewise, diplomats are able to directly communicate with government and rebel leaders to acquire an understanding of their resolve. While policy-makers are undoubtedly using this type of information when making decisions whether or not to intervene in civil wars, our models are currently not capturing this same information. These unobservable factors may have important consequences for both the intervention in and duration of civil wars.

The most important unobservable factor in regards to the duration of a war is the resolve of the warring parties. Resolve can be thought of as a party's willingness to use force to attain its ultimate objective (Fearon, 1992: 69). A highly resolved party is one who is willing to expend almost all of its resources to achieve its goal, while a party with low resolve will only expend a minimal amount of its resources. This means that highly resolved individuals in a rebel organization will devote the vast majority of their time to the rebellion instead of attending to their individual needs, such as the harvesting crops or the protection of their families. Resolve is a key component of models explaining interstate war. For example, the United States' inability to correctly judge the resolve of the North Vietnamese led to a long and costly war for both parties. As the North Vietnamese leader Ho Chi Minh once explained, "In the end, the Americans will have killed ten of us for every American soldier who died, but it is they who will tire first" (Rosen, 1972: 168). A state's inability to judge the other's resolve is a key factor leading the states to war (Fearon, 1995). The same logic holds for civil wars given that both the government and the rebels have some unknown level of resolve, which will determine the costs they are willing to suffer before backing down to the other side.

Previous research provides ample support for the notion that resolve varies across civil wars. For the rebel organization, Collier (1999) and Collier and Hoeffler (1999) explain that the goals of rebel organizations may be a complete overthrow of the government, a decrease in repression, some degree of autonomy, or mere survival. Each suggests a different level of resolve from the rebel groups. The mindset of the rebels during the second Sudanese civil war (1983-2005) provides an example of high resolve. According to the SPLA rebel leader John Garang (1987), given the options between peace under Islamic law versus a prolonged and deadly struggle, most southern Sudanese felt that war was better than peace. This mindset led to a long and devastating civil war in the country due to the high levels of resolve among the participants. In contrast, the Chiapan resistance movement in Mexico represents a much lower level of resolve. This movement began as a passive and non-violent insurgency seeking to raise the level of living for the indigenous populations (Del Sereno, 2005). In contrast to Sudan, fighting in Mexico was isolated and infrequent due to these low levels of resolve. Similar to arguments made in the interstate war literature (Fearon, 1995), capturing levels of resolve among dueling parties is difficult because both parties have an incentive to overstate their resolve in order to extract more concession from the other side. Thus, even an extensive data collection effort meant to capture resolve would likely suffer from many problems.

Resolve reaches beyond the overall goals of the warring parties. Eagerness to settle the war on the part of the belligerents, for instance, has an important impact on the duration of civil war. Unfortunately, there seems to be no easy way to measure how quickly belligerents will become eager to cease hostilities. Mason and Fett (1996: 563-4) explain that common indicators of resolve, such as ethnic-based wars or separatist wars, are insignificant indicators of whether the warring parties will reach a settlement. Rather, the views of both parties in regards to their

probability of winning the conflict versus continued bloodletting seem to be the strongest factors affecting war weariness. Given that data indicating how eager the belligerents are to settle the civil war do not exist, this represents another key factor that currently goes unobserved in empirical models of civil war duration.

Having established resolve as an important unobservable factor that affects the duration of civil war, the next step is to examine how this factor affects decisions of external parties to intervene. This is done by examining both the supply and demand of intervention for both independent states and the UN. Beginning with the former, a state's decision to intervene is based on several observable and unobservable factors. For instance, a state sharing a border with the warring state is likely to see the civil war as a threat to its own security due to possible spillover effects of the civil war, such as refugee flows (Holl, 1993: 286; Siverson and Starr, 1991; and Gleditsch, 2005) or economic decline (Murdoch and Sandler, 2002). Second, a state is likely to consider the effects of potential interventions on its long-term security. During the Cold War, states within either the US or Soviet sphere of influence were likely to receive interventions because either of these parties viewed the warring state's internal security as strategically important to the world power's overall security regime (Yoon, 1997: 597). A state's economic security might affect its probability of intervention as well. The Sudanese civil war (1983—2002), for instance, attracted very little attention from the outside world until Sudan began exporting oil in 1999 (Human Rights Watch, 2003: 457).

While the above factors are observable and can be readily captured in an empirical model, many other factors contributing to a state's decision to intervene are unobservable. These factors are relegated to the error term of current models predicting interventions. For instance, Regan's (2002: 57) rationalist-based approach argues that states are most likely to intervene in a

civil war if (1) domestic opposition to intervention is minimal; (2) the expected time horizon is short; and (3) the probability of success is high. These factors make state intervention more likely because the costs are minimal and short-term. While the first of these factors (domestic opposition) is potentially observable, we do not have data regarding the public's views on potential interventions in all ongoing civil wars. For the latter two factors (expected time horizon and probability of success), several unobservable factors contribute to this calculation. The most important of these is the resolve of the warring parties. Given that states receive benefits from successful interventions, such as long-term leverage over the peaceful states, rewards from the domestic audiences, or increased international legitimacy, states are likely to intervene in disputes where the belligerents have low levels of resolve because these are the conflicts in which they will have the highest likelihood of success (Akcinaroglu and Radziszewski, 2005). Similarly, states will avoid intervening in conflicts where the belligerents have high levels of resolve because they want to avoid becoming entangled in a long, costly and unsuccessful venture.

Resolve also affects the warring parties' demands for intervention. Given that state interventions have generally been more successful than UN interventions in the past (Doyle, 2001), we should expect warring parties eager to settle the conflict (low resolve) to seek out state intervention over UN intervention. In regards to the most recent fighting in Liberia, Siegle (2003) writes, "All sides of the conflict have welcomed U.S. intervention and accept the desirability of a negotiated settlement. There is widespread war-weariness within the population and among combatants." As this quote highlights, past conflicts in Liberia made both the government and rebels eager to end internal fighting, which increased the demand for state

intervention, while at the same time increasing the probability that the civil war ends without an intervention.

As explained earlier, resolve among the warring parties is largely unobservable. In current empirical models, therefore, it is relegated to the error terms of models predicting both intervention and duration. If the above arguments are true, both the supply and demand for state intervention leads to the expectation that states should intervene in situations in which the belligerents have low levels of resolve. Likewise, states should avoid intervening in situations where resolve is high. These expectations leads to the first hypothesis:

H1: The unobserved factors causing long durations in civil wars should be negatively associated with the unobserved factors leading to state intervention.

The unobserved factors making states more likely to intervene are precisely those that make neutral parties, such as the UN, less likely to intervene. In regards to the supply of interventions, an important unobservable factor related to both neutral interventions and the duration of civil war—rational calculations of states—leads to opposite expectations between states as potential interveners and the UN as a potential intervener. The UN is an international body comprised of nearly all independent states. In order for the UN to intervene in a civil war, it must have the unanimous support of each of the five permanent members of the Security Council. Further, the UN must have the financial and, if need be, military support of at least one member in order to carry out its actions (Goldstein, 2005: 259-268). Because the UN is dependent upon states to intervene in a civil war, it necessarily is at a disadvantage regarding the success of its missions. This is because states can either preempt or block UN intervention, giving them the first choice whether or not to intervene. As explained earlier, states consider both the time horizon of the intervention and the predicted probability of success when deciding

to intervene. When the projected time horizon is short and the expectations for success are high, states are likely to intervene in an ongoing civil war. The UN, therefore, gets the conflicts left over after the states have chosen to intervene in the conflicts in which the probability of success is the highest. The following quote from former Secretary General U Thant (1978) highlights this notion:

“Great problems usually come to the United Nations because governments have been unable to think of anything else to do about them. The United Nations is a last-ditch, last resort affair, and it is not surprising that the organization should often be blamed for failing to solve problems that have already been found to be insoluble by governments.”

The prediction from this argument is that if intervention happens at all, states will intervene when they expect a quick and easy intervention, while the UN will intervene in all other conflicts. Thus, we should expect the unobservable factors that make states *less* likely to intervene (low probability of success and a long time horizon) to be precisely those that make the UN *more* likely to intervene.

Beyond strategic considerations, we might also expect the resolve of the warring parties to be an unobservable factor contributing to both UN intervention and long durations of civil wars. Warring parties with high resolve are likely to experience wars with long duration as neither side is likely to back down. Likewise, warring parties with high resolve are likely to receive neutral interventions given that neutral parties, such as the UN, are likely to seek out precisely those conflicts that will be especially difficult to solve. This is likely for two reasons. First, because the UN cannot directly profit from interventions, the only goal of the organization’s interventions is to lessen the costs of the war. Unlike independent state

interventions, which are likely to be based on the intervening state's strategic interests (Little, 1975; Regan, 2000), we should expect the UN to seek out civil wars in which the warring parties have extremely high resolve because these are the states likely to suffer most from civil wars. Regan (2002: 57) explains that third parties may choose to intervene in wars that are either already long-running or those they expect to have a long duration. This notion is supported by DeRouen and Sobek (2004: 311), who find that civil wars with UN interventions are more likely to end in either truce or treaty than are those without UN interventions. According to the authors, this is likely because the UN is more likely to intervene in civil wars that have become protracted as the international community calls for an end to hostilities, but collective action problems prevent any single state from intervening unilaterally.

We can derive some very clear expectations regarding the relationship between UN interventions and the duration of civil war based on this argument. Specifically, the unobserved factors causing states to avoid interventions, including high resolve of warring parties and low expectations of success, are precisely those factors that increase the probability of UN interventions. Because both of these factors also contribute to long durations of civil war, we should expect to see a positive relationship between the unobservable factors explaining UN interventions and the unobservable factors explaining longer durations of civil war. This argument leads to the second hypothesis:

H2: The unobserved factors causing long durations in civil wars should be positively associated with the unobserved factors leading to UN intervention.

In a final effort to clarify the competing theories presented above, Figure 1 presents the argument in graphical format. The figures on the left side of the chart show the dominant expectations from the literature, which suggests that intervention has an exogenous effect on

civil war duration. The right side of the figure presents the argument when considering unobserved factors that might affect the supply and demand of interventions. As the arrows indicate, resolve is expected to be a key factor from the error terms of the first two equations that will affect both the decision to intervene and the duration of the civil war.

[Figure 1 here]

METHODS

A test of the hypotheses requires a model able to predict both intervention in civil wars, the duration of the civil war, and the correlation between the error terms of each model. As Boehmke (2004: 11) explains, linking a duration and discrete outcome process in an empirical model requires some bivariate distribution that allows for non-zero correlation between the error terms of the two equations. For the duration model, this requirement is not a problem given that the bivariate exponential distribution is a common distribution for duration models and is easily adapted to deal with duration dependence in the form of a Weibull model (Gumbel, 1960; Johnson and Kotz, 1972). The discrete outcome (intervention) model, however, requires the development of a model in which the errors follow an exponential distribution rather than the more common normal or logistic distributions.

Following Boehmke (2004), Boehmke, Morrey and Shannon (2005), and Lai and Boehmke (2005), the empirical tests use a novel estimator analogous to a seemingly unrelated regression (SUR) model in which the first model is a discrete choice probit model and the second is a Weibull form of the Seemingly Unrelated Discrete-Choice Duration Model (SUDCD) derived by Boehmke (2004).³ This estimator allows us to examine the correlation between the error terms of the first model predicting interventions (Probit) with the second model predicting the duration of civil wars (Weibull). Similar to other SUR estimators, the SUDCD estimator

generates an estimate of the correlation of errors, ρ , between the two equations. In this case, a negative and significant estimate of ρ means that the unobserved factors driving interventions are the opposite of those leading to longer civil wars, which is what we should expect if the first hypothesis (state interventions) is to be supported. In contrast, a positive and significant estimate of ρ indicates that the unobserved factors driving intervention are the same as those leading to longer civil wars, which is what we should expect if the second hypothesis (UN interventions) is to be supported. A secondary benefit of the SUDCD estimator is its ability to deal with interdependence among the two models via the error terms, resulting in more efficient parameter estimates (Greene, 1997; Lai and Boehmke, 2005: 25). For instance, contemporaneous shocks in the system that may increase the standard errors of the parameter estimates in the individual models are captured in the correlated error terms in the simultaneously estimated model (Zellner, 1962: 363). Therefore, the data analysis in the following section provides both a test of the theoretical argument and a potentially more accurate analysis of seemingly exogenous variables in both the intervention and duration models.

CASES, VARIABLES AND MEASUREMENT

This analysis draws heavily upon past civil war research from DeRouen and Sobek (2004) for data for both the intervention and duration models. These authors use a common definition for “civil war” from Doyle and Sambanis (2000), who define civil war as a conflict that (1) has caused at least 1000 battle deaths; (2) has challenged the sovereignty of a state; (3) occurred within the boundaries of a state; (4) involved the state as a participant; and (5) involved rebels who launched a campaign that opposed the state and could inflict casualties. This definition yields 102 civil wars in 62 states from 1944 through 1997.⁴

Model 1: UN and State Interventions

Three dependent variables are needed to test the hypotheses. The first and second indicate whether or not the civil war received either an intervention from the UN or an intervention from an independent state. For the former, one of DeRouen and Sobek's (2004: 310) independent variables, *UN intervention*, is used as a dependent variable. This dummy variable is coded 1 if the UN intervened at any point during the civil war and 0 otherwise.⁵ Thirty-eight percent of all civil wars in the data received an intervention from the UN. The second dependent variable for intervention indicates whether or not the civil war received an *independent state intervention*. This is a dummy variable derived from Lemke and Regan's (2004) data. In this piece, the authors code all possible dyadic interventions in civil wars from 1944 to 1999. For this analysis, these data are collapsed in order to create a dummy variable indicating whether or not the state experiencing a civil war received an intervention from any other state. Fifty-nine percent of civil wars received an intervention from an independent state.⁶

Few attempts have been made to predict interventions in civil wars. For this analysis, a handful of theoretical work is drawn upon to determine the factors that should best explain both UN and independent state interventions. The first independent variable, *land borders*, is a count of the number of land borders for each civil war state. Civil wars have a tendency to spill over to other states in the form of refugee flows and cross-border fighting, which could destabilize bordering states (Pearson, 1974; Heraclides, 1990; Fearon, 1998; Khosla, 1999; Lake and Rothchild, 1999; and Gleditsch, 2005). This gives states an incentive to intervene in neighboring civil wars in an attempt to keep the conflict from spreading. Second, *ethnic-based civil conflicts* are likely to attract interventions from states sharing the same ethnicity, such as the intervention by India in the Sri Lankan civil war. Further, ethnic conflicts, which are often more difficult to resolve (Carment and James, 1996; Kaufman, 1996; Davis and Moore, 1997; and Saideman,

1997), may attract more UN interventions. Ethnic war, which is a dummy variable indicating 1 in cases of ethnic, religious or identity wars and 0 otherwise.⁷

The third independent variable predicting interventions is the *size of the government's army* divided by the total population. Civil war states with large government armies are unlikely to attract either independent state or UN interventions given that the government can likely deal with the uprising without the help of an external actor.⁸ The fourth independent variable, *battle deaths*, should play a role as both independent states and the UN are put under pressure to respond to large-scale humanitarian crises (Heraclides, 1990; Kohut and Toth, 1994; and Regan, 2000).⁹ The next independent variable predicting interventions, *cold war*, is a dummy variable for years prior to 1989. As Weiss, Forsythe and Coate (1994: 53-65) explain, the end of the cold war marked a change in Soviet policy towards multilateral peacemaking efforts, which allowed the UN to intervene in situations where either the US or the Soviets would have exercised their veto power in the Security Council in earlier years. This led to a large increase in UN interventions during the post cold war period.¹⁰ In contrast, the end of the cold war marked the end of ideological hostilities, which made the domestic audiences less willing to support unilateral state interventions vis-à-vis collective interventions (Vertzberger, 1998). Thus, we should expect the end of the cold war to lead to more UN interventions and less state interventions. The final two independent variables predicting interventions are dummy variables for *democracies* and *anocracies*. We might expect the expansive foreign policy of the US, for instance, to result in more interventions in democracies than in non-democracies.¹¹ All independent variables are lagged at t-1 to avoid potential problems with endogeneity.

Model 2: Civil War Duration

The second model examines the factors affecting the duration of a civil war. Using DeRouen and Sobek's (2004) data, the dependent variable is a count in months of the duration of the civil war.¹² Like the independent variables predicting intervention, civil war scholars have yet to come to a consensus regarding the variables that should be in a typical civil war duration model (Fearon, 2004). Therefore, the tests again rely heavily on DeRouen and Sobek's data to construct a duration model based on findings from past research.

Several of the independent variables in the intervention models are also included as independent variables in the duration model. For the first, *size of the government's army*, we might expect governments with large armies to quickly quell rebellions (Mason, Weingarten & Fett, 1999; and Balch-Lindsay and Enterline, 2000). Second, *ethnic war* is included because we might expect ethnically-based wars to drag on longer than others due to issue indivisibilities (Regan, 2002; Fearon, 2004). Third, *battle deaths* should pick up some of the variation in war weariness, which should lead to a quicker end to hostilities (Balch-Lindsay and Enterline, 2000). The fourth and fifth variables, *democracy* and *anocracy* dummies, should pick up variations in bureaucratic effectiveness, which should lead to shorter civil wars (DeRouen and Sobek, 2004).

Two new independent variables in the duration model include *income per capita* and *population*. Past research has shown that wars in states with high populations and low incomes tend to last longer than other wars (Collier, Hoeffler & Soderbom, 2004). This is likely due to the lowered costs of rebel recruitment when rebel leaders have a large and/or impoverished population from which to recruit. Next, a variable for *ethnic fractionalization* is included in the model because rebel leaders may have an easier time recruiting fighters when they can appeal to a certain sector of the population.¹³ Ethnic fractionalization is an index ranging from 0 (least heterogeneous) to 144 (most heterogeneous). Finally, to assure that the results are consistent

with past research, a variable for *UN interventions* and *state interventions* are included, which have been found to be positive and significant in previous duration models (Balch-Lindsay and Enterline, 2000; Regan, 2002).

ANALYSIS AND DISCUSSION

A preliminary analysis of the data highlights the puzzle this paper attempts to explain. In Table 1 below, the mean duration of civil war is presented for four categories of civil war, including (1) all civil wars; (2) civil wars without interventions; (3) civil wars with state interventions and (4) civil wars with UN intervention. As we can see, civil wars with no intervention are the shortest, followed by all wars, wars with UN intervention and, lastly, wars with state intervention.

[Table 1 here]

This preliminary analysis is puzzling in two ways. First, according to Regan's (2002) theory, we should expect to see state interventions in civil wars that will end quickly and easily; however, the data show the opposite. In this case, the histogram for state interventions presented in Figure 2 is revealing given that the duration of civil wars with state interventions follows a bimodal distribution.¹⁴ This suggests that states are likely to intervene in both very short and very long civil wars. This may support the notion that states face pressures on many fronts when considering intervention. Regan's theory supports the first peak because states will intervene when they expect a quick end to the war. The second peak may suggest that states may come under pressure to lessen the humanitarian consequences of a civil war when these wars become especially long and costly. Additionally, states may come under pressure to act as the warring parties seek settlement of the war due to war weariness.

[Figure 2 here]

The second puzzle from the difference of means test is that civil wars with interventions from either states or the UN last on average much longer than those without an intervention. Of course, this is the main puzzle this paper seeks to address.

Are more sophisticated analysis of the data is presented in Tables 2 and 3. Results for state interventions are reported in Table 2, while UN interventions are reported in Table 3. Six models are run in each table. The first model is a probit model predicting UN and state interventions. The second, third and fourth models present duration analyses. The final two models in each table present the analyses using the SUDCD estimator, which provide tests for the two hypotheses. This discussion will first examine the final models to address the hypotheses, and then will move to the earlier models.

If the first hypothesis is to be supported, we should see a negative and significant correlation between the unobservable factors (error terms) in the state intervention model (Table 2, Model 5). This would indicate that the unobserved factors causing a state to intervene, such as a quick prediction of success or low resolve among combatants, is associated with civil wars of shorter duration. As we can see, the Rho value in Table 2, Model 5 is positive and insignificant, suggesting no support for the first hypothesis. Two possibilities shed some light on this finding. First, it is quite possible that rational choice-based theories explaining state interventions are wrong. That is, states may be less concerned with getting involved in quick and easy civil wars as they are in getting involved in order to prevent or lessen the consequences of the most devastating civil wars. For instance, Holl (1993: 286) argues that when a third party has some former involvement with one of the belligerents, a former colonial power perhaps, it may feel a moral obligation to intervene in the civil war. Second, the rational choice based expectations are based entirely on a supply-side view of state interventions. However, we should also consider

how demand for intervention might influence the results. If either rebel or government groups foresee a long and costly war due to high resolve of the other side, they may purposefully seek out state interventions. Either explanation is reasonable for explaining this somewhat surprising finding. Overall, the most likely explanation is that states choose to intervene for a variety of reasons, ranging from moral imperatives to strategic self-interests, which provides an interesting topic for future studies. At any rate, the first hypothesis, which predicted that the unobservable factors leading to state interventions should be the opposite of those explaining civil war duration, is not supported.

[Table 2 here]

Unlike the first hypothesis, the second finds strong support. The Rho value for the SUDCD UN intervention model (Table 3, Model 5) is positive and significant. This supports the notion that unobservable factors, such as high resolve among belligerents, leads to both UN interventions and longer civil wars. Contrary to past findings and policy advice, therefore, these results suggest that UN interventions may not have an independent effect in lengthening a civil war. Rather, civil wars with UN interventions are likely longer because the UN seeks out wars that they expect to be especially long and costly due to the high resolve of the warring participants. Also, the UN may be forced to intervene in intractable conflicts because states will avoid interventions in these instances. As expected, past efforts failed to adequately explain this relationship simply because they lacked a method that would allow the researchers to examine the unobservable factors driving both the decision to intervene and the duration of civil war. Using the SUDCD estimator, however, this project has revealed an important relationship between these two processes.

[Table 3 here]

These findings are supported in the final analyses presented in Model 6 of each table. In this model, the predicted value of intervention from Model 1 is added to the SUDCD estimates. Once the unobserved factors have been removed from the intervention dummy variable from Model 3, the effect of both UN and state interventions is insignificant. This again suggests that unobserved factors other than the intervention itself affect the duration of civil war. Importantly, adding the predicted value of intervention does not change the significance of the Rho value, meaning that a more simple structural equation model would not be sufficient to capture the impact of resolve on intervention in and duration of civil wars (Kennedy, 1993).

These results can be better understood by examining how variation in the duration of civil wars affects the probability that the conflict will receive an intervention. This is done by setting all of the variables at the mean for continuous variables and the mode for dichotomous variables. Next, the expected probability of UN intervention and the expected duration of the civil war are predicted using the SUDCD estimator from Table 3, Model 5. As we can see in Figure 3, because the unobserved factors affecting UN intervention and civil war duration are positively correlated, the probability of intervention increases as the duration of the civil war increases, while the observed variables are held constant. If unobserved factors had no effect, the probability of intervention given duration would follow the horizontal line, which would indicate that duration of civil wars is unrelated to intervention via their error terms.

[Figure 3 here]

Substantively, the effect of unobserved variables has a large effect. When the civil war lasts the mean predicted duration (63 months), the probability of UN intervention is 0.30. If the war lasts 20 months longer than expected, this probability increases 7 percent. Likewise, the probability of intervention decreases by 13 percent when the duration is 20 months shorter than

expected. Though these changes are not dramatic, they highlight the important role unobserved factors have in explaining both duration and intervention of civil wars.

Looking beyond the specific hypotheses, the results from the first three models in Tables 2 and 3 provide some interesting conclusions in themselves. First, in Model 1 we see that the dummy variables for *ethnic war*, *anocracy* and *democracy* are insignificant in both tables, meaning that neither helps explain which wars are likely to attract interventions. The number of *land borders* makes the UN less likely to intervene while the same measure does not matter for state interventions. This may suggest that the UN is more likely to intervene in isolated states that have few neighbors to call upon for assistance, while the insignificant finding for borders in the state model might reflect a collective action problem among potential state interveners.¹⁵ The fourth independent variable, *cold war*, acts as predicted by previous literature. Independent states were more likely to intervene during the cold war, while the UN was less likely to intervene in the same period. The next independent variable, *deaths*, yields somewhat unexpected results. The coefficient is positive and significant for states, indicating that states are likely to intervene when civil war death rates become very high. In contrast, the finding is insignificant for the UN. According to common expectations, we should see the opposite results for these variables. There are two explanations for this finding. First, it may be that state leaders feel a moral obligation to intervene in a conflict with high casualties, which has been suggested by past research (Holl, 1993: 286). Second, demand for state intervention from the warring parties may increase in the face of high casualty rates as the sides become war-weary and seek to end the war. The coefficient for deaths for the UN becomes positive and significant when the probit and weibull models are estimated simultaneously, which is due to improved efficiency when taking into account correlations in the error terms of the two equations. The same

explanations can account for the significant finding for anocracy in the duration model (Table 3, Models 5 and 6). The final variable predicting interventions, *size of the government's army*, makes states more likely to intervene while having no effect on UN decisions to intervene. This lends support to Regan's (2000) rationalist explanation for state intervention, which argues that states are likely to intervene when their chances of success are high because states are likely to intervene when the government could likely stop the rebellion on its own. Overall, the results for the model predicting state and UN intervention generally support past theory; however, several of these findings provide interesting avenues for future research.

Moving to the model predicting civil war duration, which is presented in Models 2-4 in Tables 2 and 3, we can see that the majority of the independent variables are insignificant. These include variables for *ethnic fractionalization*, *anocracy*, *income per capita*, *population* and *ethnic war*. The findings for these variables are somewhat puzzling at first glance. However, these they are not altogether unexpected given the high amount of uncertainty from past research. For instance, Fearon (2004) finds that common variables in duration models provide no extra explanatory power to duration models when considering the type of civil war (e.g., coups, revolutions, etc.). Further, existing duration models show a high degree of variation in their findings when using similar proxies for the same concept. For example, Collier, Hoeffler & Soderbom (2004) find that ethnic fractionalization leads to longer civil wars, Elbadawi and Sambanis (2000) find the opposite, and Fearon (2004) finds that it has an insignificant effect on civil war duration. Overall, these findings indicate that there is much to be discovered regarding the specific factors that explain civil war duration.

In regards to the significant variables, *size of the government's army* and the dummy variable for *democracy* are both positive and significant, indicating that higher levels of each

lead to a longer civil war duration. Both are somewhat puzzling findings. For the former, we might expect a large government army to quickly quash a rebellion in its early stages before it has time to build momentum, which should yield shorter civil wars when the government has a strong army. Selection effects may explain this finding. In cases where the government's army is very strong, we might expect only strong and highly resolved rebel organizations to attempt to overthrow the government. Thus, the same factors giving a rebel organization the ability to sustain a long civil war are also those that make it select itself into conflicts against a strong government. The second significant variable, democracy, also behaves unexpectedly. Selection effects may again influence this finding. Because democracies allow a large amount of peaceful opposition to the government, civil war should only erupt in situations where the opposition is highly resolved and has extremist views, which are characteristics that likely lead to longer civil wars. Finally, to ensure the consistency with previous research, Model 3 includes variables for *state interventions* (Table 2) and *UN interventions* (Table 3). Consistent with previous research, these variables are positive and significant, indicating that either type of intervention is associated with longer civil wars, at least when we do not account for non-random decisions to intervene. The data were then run in Models 4 and 6 using the predicted values of state and UN interventions from the first models in each table. These results yield an insignificant coefficient for each intervention variable, providing further evidence that some unobserved factor in intervention, such as resolve, is driving the significant finding when using the original intervention variables.

Before concluding, two issues should be addressed. First, one might argue that the types of interventions pursued by the UN (e.g., peace-keeping) are more likely to happen during the later stages of the conflict, which means that shorter civil wars may never be plausible candidates

for UN interventions. If this were true, the omitted variable in previous analyses of interventions would be the duration of the war itself, rather than the unobserved resolve of the warring parties. However, using Regan's (2002) data, we see that mean duration of civil conflicts receiving state interventions is 42.3 months (SD=52.4), while the mean duration of conflicts receiving UN interventions is 34.7 months (SD=62.1). Second, an important caveat to these findings should be addressed. All one can possibly do with an examination of the error terms is to cast doubt upon past findings and provide tenuous support for alternative explanations. The story presented in this paper is that resolve is a key component in the error term that influences duration and intervention in civil wars; however, many other factors are potentially captured in the error term that could be driving the findings. That being said, the use of the error term to capture theoretical concepts is not without precedent. For example, Conybeare and Zinkula (1996: 8) use error terms from a model predicting AFL ratings to instrument ideology, which is then used to predict Congressional votes on NAFTA (also see Kau and Rubin, 1979).¹⁶ Using the error term to capture resolve provides the best available evidence that resolve matters for both the intervention and duration of civil wars. Future research should seek to identify better proxies to bring resolve out of the error term. For instance, future efforts might look at the stated goals of the rebels, prior levels of repression or poverty, or rebel behavior in past wars in order to better capture proxies for resolve. While this paper is unable to completely disconfirm past findings in the literature or offer robust alternatives, it is an important first step in our attempts to examine how third parties affect ongoing civil wars.

SUMMARY, CONCLUSIONS AND IMPLICATIONS

The purpose of this paper is to examine the relationship between both state and UN interventions and the duration of civil war. Past findings consistently show that third party

interventions are associated with civil wars of longer durations. The most common explanation for this finding is that third parties exacerbate the tensions in an ongoing civil war, causing it to last longer than it would have otherwise. This paper presents a competing explanation. Third parties may purposefully select themselves into certain types of conflicts based on factors that are unobserved in existing models. State intervention is unlikely in civil wars in which the belligerents have high levels of resolve because states seek interventions where the projected time horizon is short and the probability of success is high. In contrast, the UN will be forced to intervene in cases of high resolve because states avoid these situations. Demand for intervention on the part of the belligerents may also affect this process because war weariness may cause the combatants to seek out state intervention, which they likely view as more effective than non-state intervention.

Because resolve is largely unobserved in current empirical models, a novel estimator developed by Boehmke (2004) is employed, which allows for the simultaneous estimation a Probit model predicting interventions in civil wars and a Weibull model predicting the duration of these conflicts. This method produces a correlation of the unobserved factors (error terms) from each model, allowing a test of the hypotheses. Findings suggest that unobserved factors causing the UN to intervene are positively associated with unobserved factors leading to civil wars with longer durations. This supports the alternative argument that high levels of resolve among combatants drive both UN intervention and civil war duration. Findings in regards to the state intervention model are insignificant.

This paper has important implications for both future civil war research and the policy community. For the former, this study suggests that current models using a dummy variable to capture interventions in a duration model are problematic because they assume a random

selection process. Future work should seek to provide more qualitative explanations of how interventions have affected civil war. Quantitative work should seek to break down the intervention variable to examine the context under which the intervention took place. For instance, we might ask how many deaths took place before or after the intervention. For the policy community, this study casts serious doubt on past policy advice coming from the academic literature. Intervention in civil wars does not necessarily exacerbate the consequences of these conflicts. Rather, it is more likely that interventions happen in civil wars that would have been long anyway. Until future research can better capture the true effect of interventions on civil wars, policy advice should reflect the large amount of uncertainty that has been revealed here.

Figure 1:
 Flow Chart of Competing Explanations for the Effect of Intervention on Civil War Duration

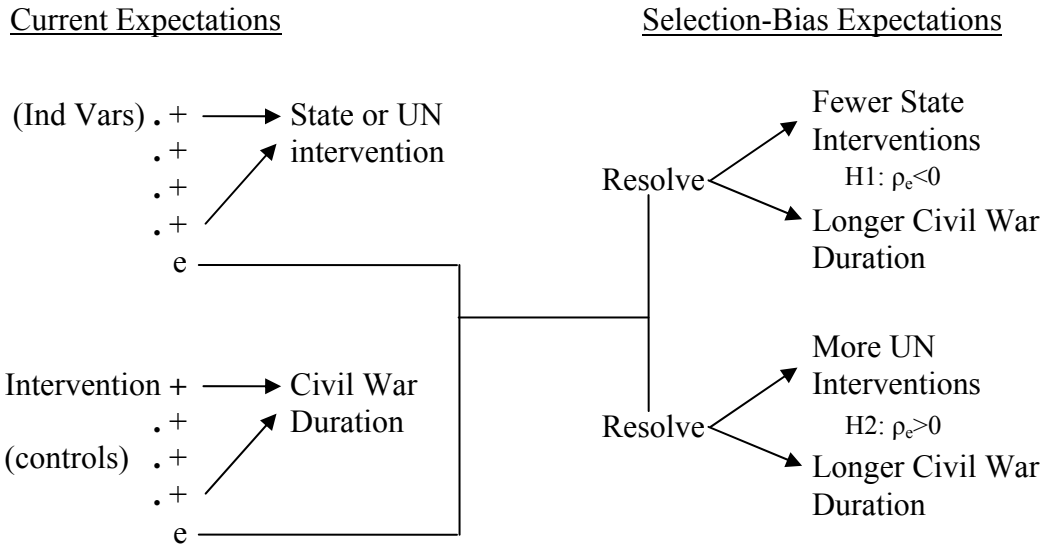


Table 1: Difference of Means Test for Civil War Duration, by Intervention

	Mean Duration	Observations
All civil wars	73.96 (79.34)	102
No intervention	42.63 (79.96)	27
State intervention	90.32 (78.50)	62
UN intervention	79.32 (74.64)	34

Note: Standard deviations are in parentheses. Difference in all means are significant at $p < .001$ (two-tailed t test).

Figure 2. Histogram of Duration of Civil Wars with State Interventions

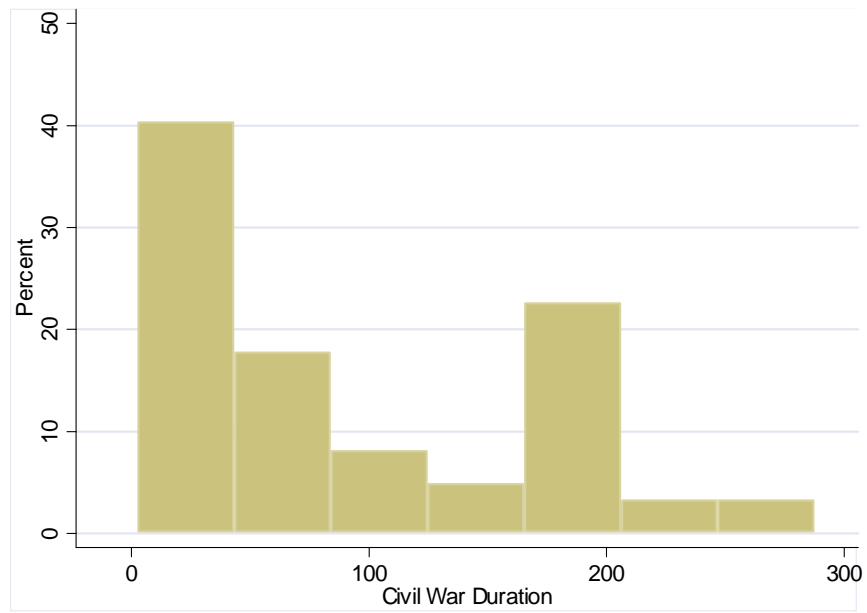


Table 2. Probit, Weibull, and SUDCD Estimates of State Interventions

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>State intervention</i>						
Land borders	-.006 (.056)				-.055 (.071)	-.055 (.071)
Ethnic war	-.108 (.289)				-.102 (.356)	-.100 (.355)
Size of gov's army	.030* (.014)				.028* (.014)	.028* (.014)
Cold war	.734* (.334)				.639* (.351)	.650* (.356)
Deaths	.358*** (.089)				.333*** (.093)	.333*** (.093)
Anocracy	-.049 (.321)				-.234 (.378)	-.234 (.378)
Democracy	-.022 (.392)				-.600 (.483)	-.605 (.484)
Constant	-1.73** (.634)				-.794 (.722)	-.801 (.723)
<i>Civil war duration</i>						
State intervention			.542* (.305)			
State intervention (predicted value)				.536 (1.10)		.478 (1.11)
Size of gov's army		.021* (.011)	.016* (.009)	.016 (.013)	.021* (.011)	.017 (.013)
Ethnic fract.		.003 (.004)	.002 (.004)	.002 (.004)	.002 (.004)	.002 (.004)
Anocracy		.379 (.273)	.376 (.271)	.371 (.273)	.384 (.279)	.377 (.279)
Democracy		.790* (.477)	.872* (.467)	.760 (.480)	.783* (.472)	.757 (.476)
Income/capita		-.167 (.115)	-.160 (.112)	-.160 (.117)	-.164 (.116)	-.158 (.118)
Population		.233 (.154)	.221 (.153)	.219 (.158)	.248 (.156)	.235 (.161)
Ethnic war		.304 (.280)	.383 (.266)	.332 (.276)	.297 (.281)	.322 (.276)
Deaths		.306*** (.085)	.237** (.094)	.238 (.179)	.309*** (.085)	.248 (.181)
Constant		-1.32 (2.49)	-1.23 (2.50)	-1.12 (2.55)	-1.59 (2.53)	-1.40 (2.60)
Rho (ρ)					.096	.093
Duration dependence		.832*** (.052)	.847*** (.053)	.837*** (.055)	-.184** (.063)	-.179** (.066)
Lambda-P (PRE)	.300				.275	.275
Wald Chi2		22.79**	29.70***	27.19***	19.74**	19.65**

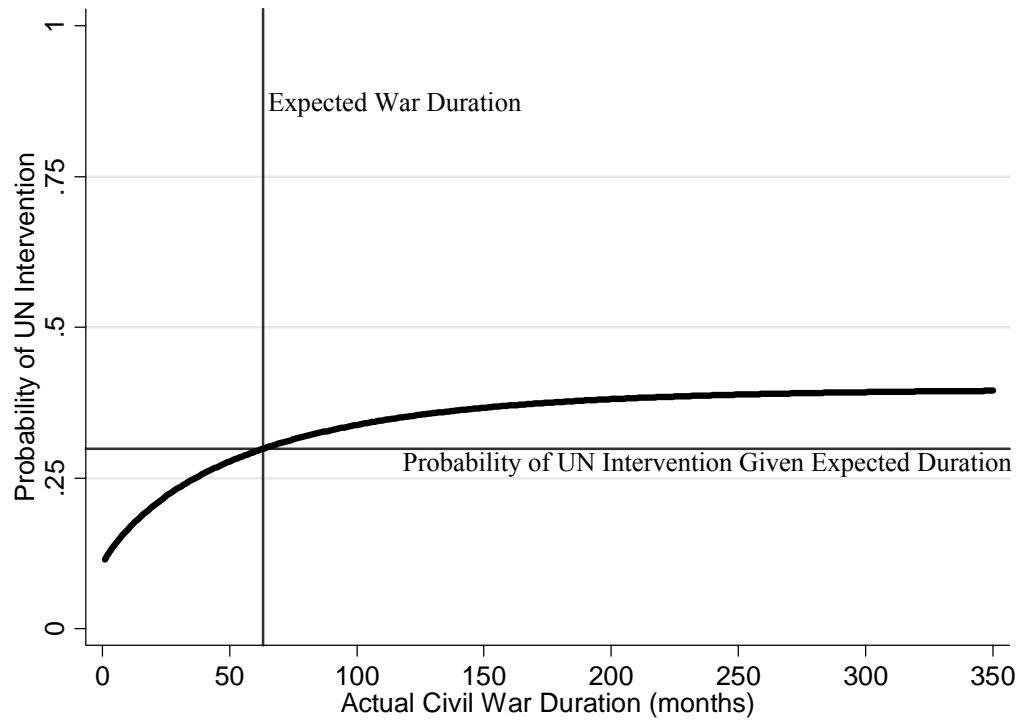
N=102. Robust standard errors in parentheses. Significance at .05*; .01**; .001*** (one tailed).

Table 3. Probit, Weibull, and SUDCD Estimates of UN Interventions

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>UN intervention</i>						
Land borders	-.117* (.060)				-.055 (.053)	-.055 (.053)
Ethnic war	.420 (.298)				.328 (.281)	.329 (.281)
Size of gov's army	-.009 (.008)				-.003 (.010)	-.003 (.010)
Cold war	-1.24*** (.340)				-.806* (.382)	-.813* (.375)
Deaths	.108 (.089)				.151* (.079)	.152* (.080)
Anocracy	.106 (.301)				.221 (.285)	.222 (.285)
Democracy	.016 (.376)				.561 (.402)	.563 (.403)
Constant	.395 (.515)				-.091 (.527)	-.088 (.520)
<i>Civil war duration</i>						
UN intervention			.390* (.243)			
UN intervention (predicted value)				.029 (.695)		.072 (.665)
Size of gov's army		.021* (.011)	.025** (.010)	.021* (.012)	.022* (.010)	.023* (.011)
Ethnic fract.		.003 (.004)	.003 (.004)	.003 (.004)	.002 (.003)	.002 (.004)
Anocracy		.379 (.273)	.393 (.269)	.380 (.276)	.444* (.272)	.446* (.275)
Democracy		.790* (.477)	.842* (.488)	.792* (.485)	.763* (.474)	.769 (.484)
Income/capita		-.167 (.115)	-.176* (.109)	-.168 (.121)	-.163 (.113)	-.165 (.119)
Population		.233 (.154)	.292* (.162)	.235 (.162)	.298* (.167)	.302* (.174)
Ethnic war		.304 (.280)	.258 (.276)	.300 (.274)	.297 (.276)	.288 (.269)
Deaths		.306*** (.085)	.291*** (.087)	.306*** (.084)	.323*** (.084)	.322*** (.083)
Constant		-1.32 (2.49)	-2.41 (2.64)	-1.36 (2.76)	-2.46 (2.70)	-2.55 (2.90)
Rho (ρ)					.195*	.195*
Duration dependence		-.184** (.063)	-.174** (.065)	-.184** (.064)	-.176** (.065)	-.178** (.066)
Lambda-P (PRE)	.206				.118	.147
Wald Chi2		22.79**	26.69***	24.75**	21.28**	20.30**

N=102. Robust standard errors in parentheses. Significance at .05*; .01**; .001*** (one tailed).

Figure 3: Predicted Effect of Civil War Durations on the Probability of UN Intervention



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¹ Some variation exists when considering more nuanced factors, such as the timing of interventions (Regan 2002) or biased interventions (Balch-Lindsay and Enterline 2000).

² Other important pieces, such as Walter (1997, 1999, 2002), Hartzell (1999), and Doyle and Sambanis (2000) examine the role of third parties in post civil war periods. This work is not reviewed here in order to focus entirely on periods of fighting.

³ See Boehmke (2004: 11-15) for technical steps taken to derive this estimator. The analyses were also run using the SUR estimator with a dichotomous dependent variable for civil war duration coded 1 if the civil war lasted longer than the median civil war and 0 otherwise. Results are substantively identical to those presented in here.

⁴ Doyle and Sambanis' (2000) original data included 114 civil wars in 68 states during the same time period. These are reduced in this test due to missing values of the independent variables.

⁵ This variable is derived from Doyle and Sambanis (2000) who classify four types of UN interventions including (1) monitoring or observer mission; (2) traditional peacekeeping; (3) multidimensional peacekeeping and (4) peace enforcement. Following DeRouen and Sobek (2004), all four types of intervention are collapsed into a single variable for any type of UN intervention.

⁶ Regan and Lemke (2004) follow Regan (2000: 10) in defining state interventions as "convention-breaking military and/or economic activities in the internal affairs of a foreign country targeted at the authority structures of the government with the aim of affecting the balance of power between the government and oppositions forces."

⁷ This variable comes from DeRouen and Sobek's (2004: 310) model. Roughly 62 percent of civil wars are coded as ethnic wars.

⁸ Data for the size of the government's army and population come from the individual components of the CINC index acquired from the EUGene Expected Utility Generation and Data Management Program (Bennett and Stam 1997-02).

⁹ Data for battle deaths come from Lacinia (2005).

¹⁰ Also see Betts (2001: 285). For this data, the UN intervened in 27 percent of civil wars prior to 1989 and 73 percent of civil wars after the cold war ended.

¹¹ Democracies are defined as countries receiving a score of 6+ from Polity IV's democ-autoc index (Marshall, Jaggers and Gurr 2004). Anocracies receive a score of -5 to +5.

¹² The mean duration for civil wars in this dataset is 74 months (6.2 years).

¹³ Data for income per capita and population come from Fearon and Laitin (2003). Data for ethnic fractionalization originally came from Vanhanen (1999) and Doyle and Sambanis (2000).

¹⁴ None of the other three categories exhibits a bi-modal distribution. Histograms for all categories are available online at: [insert web address here].

¹⁵ See Gent (forthcoming) for an excellent discussion of this issue.

¹⁶ The AFL score is a rating of how often the representative voted for the stand favored by the AFL-CIO in past congressional votes (Conybeare and Zinkula 1996: 8).