

## Third Party Interventions and the Duration of Intrastate Conflicts

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*Abstract*

Recent research has begun to focus on the role of outside interventions in the duration of civil conflicts. Assuming that interventions are a form of conflict management, we would hold ex ante expectations that they would reduce a conflict's expected duration. In this paper I test hypotheses relating the type and timing of outside interventions to the duration of civil conflicts. The data incorporate 150 conflicts during the period 1945-1999, 101 of which had outside interventions. In those 101 cases there were a total of 1036 individual interventions. Using a hazard analysis the results suggest that third party interventions tend to extend expected durations rather than shorten them. Specifically, interventions that beget opposing interventions increase the expected duration dramatically over the baseline expectations, as do nearly any military or economic intervention. The only aspect of the strategy for intervening that reduces the likelihood that a conflict will end in the next month is that it be biased in favor of either the opposition or the government. In effect, neutral interventions are less effective than biased ones.

The management of internal conflicts has become increasingly important since the end of the Cold War. The UN alone has seen a multifold increase in the number of peacekeeping operations (Bobrow and Boyer, 1997; Khanna et al, 1998), while various other national and multinational efforts have taken on increasing importance in efforts to influence civil conflicts (Regan, 2000). Many questions remain about the effectiveness of efforts to manage or ameliorate the consequences of internal conflicts. This study contributes to our understanding of the effect of third parties on the duration of civil conflicts. With few exceptions most of the empirical analyses have focused on the role of diplomatic efforts to resolve internal disputes. It is only recently that scholarship has begun to focus on the role of outside military and/or economic interventions in the expected duration of civil conflicts. Presumably when outside parties intervene in an internal conflict at the core of their motivation is some form of conflict management. Interveners may prefer their ally to prevail, but one would think that prevailing at an acceptable cost and in a reasonable time frame would be critical to an effective outcome.

In this paper I will elaborate more fully on the role of third parties in the duration of civil conflicts<sup>1</sup>. First I will review the literature on the termination of civil conflicts, and more specifically the factors that influence their duration. I will follow this with a theoretical argument outlining the process by which outside actors influence the length of time a conflict can be expected to last. Empirical analyses on the population of conflicts from 1944 to 1999 with and without interventions will then be used to evaluate hypotheses derived from my theoretical arguments. Finally I discuss the results of my analysis and make suggestions for further research and future policy. Very briefly, the results suggest

that unilateral interventions tend to lengthen the expected duration of a conflict, but that biased interventions are associated with shorter expected durations relative to neutral ones. In general, however, most interventions appear to prolong rather than reduce the expected duration of a conflict.

### *Literature Review*

Previous research into the factors that effect the expected duration of civil wars is rather sparse, nor is there much on the broader topic of the duration of wars in general. Bennett and Stam (1996) present one of the first systematic analyses on the expected duration of interstate war. Their conclusion was that a mix of realpolitik explanations and strategic decisions by the principles prosecuting the war had the greatest impact on a conflict's expected duration. For example, using a duration model they find that the balance of capabilities and the war fighting strategy are strong predictors of the expected time until the conflict ends. Other contributing factors include the level of democracy and the extent of domestic political repression. Furthermore, they find that war itself is not duration dependent, that is, the amount of time that it is ongoing does not influence its expected future duration.

Regan and Stam (2000) test a duration model of interstate conflict, focusing on the role of conflict management efforts as predictors of expected durations. They specify a curvilinear model, which posits that the probability of a conflict ending is a function both of efforts to manage the conflict and the timing of those efforts. Their evidence demonstrates

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<sup>1</sup> By civil conflicts I refer to armed internal conflicts that experience at least 200 fatalities. This threshold is considerably short of the 1000 fatalities per year required by the Correlates of War criteria, and reflects an

that diplomatic management efforts make important contributions to the resolution of interstate disputes, but that diplomacy is not equally successful throughout the life cycle of a conflict. That is, the relationship between third party mediation and a conflict's duration is non-linear with respect to the timing of the diplomatic initiatives. In effect they demonstrate that the strategy for intervening incorporates more than simply the characteristics or behaviors of the mediator. The concept of a strategy also involves the timing of the intervention.

The literature on the duration of civil wars is even more recent and even less comprehensive. Licklider (1995; 1993) has examined the termination of civil conflicts, arguing in effect that the decision to settle is a function of internal capabilities, which can be influenced by external interventions. His research design, however, does not permit a direct interpretation of expected durations, given an ongoing conflict. Walter's (2000) analysis of civil wars in the post WWII period suggests that to maintain a stable peace once a settlement is reached requires confidence from both sides that disarmament agreements will be complied with and that their opponent will not reinitiate the conflict. At the end of a fully implemented peace agreement that stops a civil war, the government generally has the upper hand because of its ability to rearm. This results in reluctance on the part of the opposition to agree to the terms of a negotiated agreement. We saw this recently in Northern Ireland where the IRA resisted disarmament allegedly out of fear of a Loyalist rearmament on terms unfavorable to the IRA. According to Walter, outside interventions are necessary to maintain the stability of a negotiated settlement by imposing costs on the side that rearms. Regan's (1996; 2000) analysis demonstrates that under certain conditions outside interventions into civil wars can facilitate the end of the violent aspects of the

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interest in what Ted Gurr referred to as "organized conspiracies" and "internal warfare" (Gurr, 1970).

conflict. But none of the studies mentioned directly answers the critical question of whether outside interventions shorten or prolong the duration of civil wars.

Regan examined whether conflicts with outside interventions tended to last longer than those without interventions (2000). The evidence suggests that they do, but the inferences that one is able to draw from this analysis do not give a sufficient picture of the relationship between interventions and expected durations. What I demonstrated is that longer running conflicts tend to have more outside interventions, but the research design cannot discriminate between the cause and effect. One possible explanation for this evidence could be that third parties choose to intervene in long running conflicts, rather than the intervention extending the length of time until a settlement. And if one makes the assumption that interventions are a form of conflict management, and therefore the first preference of the intervener is to bring the conflict to an end, then this interpretation is consistent with the evidence. A more sophisticated duration model, with data capable of explicitly testing the role of outside interventions is necessary to identify the role of interventions in a conflicts expected duration. Three recent studies of civil war durations begin to give us a sense of the factors that lead to longer rather than shorter wars, and in particular the role of outside actors in influencing the expected duration of a civil conflict (Elbadawi & Sambanis, 2000; Lindsay and Enterline, 1999; Collier, Hoeffler, Soderbom, 1999).

Elbadawi and Sambanis develop a formal theoretical treatment of the conditions that contribute to the expected duration of civil wars. Using a micro-economic maximization model he shows that external support for the combatants can effect the costs of continuing the war, that the growth in rebel forces should have a direct influence on its course, and that

ethnic fractionalization should make rebel mobilization easier and increase a wars expected duration. If supported by empirical evidence, there are at least two important implications from this work that can inform theoretical development and potentially influence the policy process. First, if his arguments are correct, the increased duration that results from fractionalization of a society along ethno-linguistic lines would suggest that ideological conflicts could be expected to have shorter durations than ethnically-based conflicts. This would be consistent with speculations by Kauffman (1996), that ethnically based conflicts are more difficult to resolve than other forms of civil war. Second, his model suggests that particular types – or strategies -- of external interventions would appear to reduce the length of a conflict, and this points directly to specific policy initiatives. An inference from Elbadawi and Sambanis's model is that an external intervention that addresses issues of poverty will make rebel mobilization more difficult, thereby shortening the length of the war. The fractionalization of societies along ethno-linguistic lines is not a necessary condition that results from socio-cultural diversity, but rather a function of the degree of discrimination along these lines (Gurr, 1993).

Collier et al (1999) estimate a hazard model of the duration of civil wars, using of sample of 45 civil wars taken from the Correlates of War database. They find support for the notion that ethnic fractionalization has a strong influence on the expected duration of a conflict. Interestingly, their results suggest that the relationship is non-linear, with homogeneous and highly fractionalized societies having shorter civil wars than moderately fractionalized societies. There are two potential explanations for the effects of high homogeneity or heterogeneity: 1) it may influence the governments ability to divide loyalties within the opposition, and 2) it is consistent with the idea that civil wars in

homogeneous or highly heterogeneous societies tend to organize along ideological lines. Their results also suggest that civil wars are not duration dependent. Collier et al suggest that the balance of capabilities between the government and the rebels should influence the duration of a civil war, however their evidence does not support a such a relationship. They fail, however, to take into account the effect of external actors on the relative balance of capability. In effect, Elbadawi and Sambanis's arguments about external interventions extend the theoretical foundations by which we can think about the results of Collier et al results; accordingly a more complete specification by Collier et al should include the effect of interventions on the capabilities of the actors.

Using a sample of civil wars somewhat larger than Collier et al, though also taken from the Correlates of War Civil War database, Lindsay and Enterline (1999) test a hazard model of civil war duration. They articulate a model incorporating a number of contextual variables, including but not limited to ethnic homogeneity and characteristics of any outside intervention. Of their results that approach conventional levels of statistical significance, third party support for the government is associated with an increased expected duration of the conflict, and taken by itself, a balanced intervention increases the probability that the conflict will end at any given point in time. Ethnic homogeneity, however, appears to be unrelated to the expected duration of a conflict, though "identity wars" have longer durations than ideological ones. Their evidence provides a contrasting view of the role of the balance of capabilities on a conflict's duration from that articulated by Collier and his colleagues. By making the assumption that an intervention that supports the government tends to create a greater imbalance of capabilities, the Lindsay and Enterline results suggest that it is a balance of forces that leads to shorter wars and an imbalance to longer ones.



There are a number of common themes to these studies that point toward further theoretical development and empirical analysis: demographics, the balance of capabilities between the government and opposition, and the strategy for prosecuting a conflict are all related to the duration of a conflict. The decision to continue fighting can be thought of in terms of the costs and expectations associated with continued conflict, and this calculus is influenced by the ability to mobilize and the resulting balance of capabilities. In the following section I will present a theoretical argument from which we can think about strategic and contextual variables and their effect on the duration of civil wars, from which I articulate testable hypotheses.

#### *Intervention Strategies and the Duration of Intrastate Conflicts*

My focus here is specifically on the role of outside interventions in the expected duration of internal conflicts. I make a general assumption that outside interventions into internal conflicts are a form of conflict management, and therefore attempt to control the hostilities rather than exacerbate them. If the goal of an intervention can be primarily thought of in terms of conflict management, then *ceteris paribus*, we would hold *ex ante* expectations that interventions should reduce the duration of a conflict. This assumption is not without controversy, even though it is useful for framing the role of interventions. For example, if we assume that states intervene in an effort to reduce the duration, magnitude, or violence associated with the conflict, then we would expect that on average they would be effective at achieving these outcomes. The alternative is to view interventions as a form of international influence designed to achieve a much broader range of outcomes, only one of which

might look like conflict management. Supporting the rebel movement with military aid, for instance, might not appear to be an attempt at conflict management, while similar support for the government might. That is, an intervention on behalf of the opposition is designed to alter the pre-conflict status quo ante. In contrast, when an outside actor intervenes on behalf of the government we can assume that this is an attempt to restore the pre-conflict status quo ante. If a disparity in capabilities leads to an earlier settlement, then balancing the capabilities in favor of the government could be expected to shorten the conflict's duration and therefore act as a method of short-term conflict management (Balch-Lindsey and Enterline, 2000; Elbadawi and Sambanis, 2001). Ultimately whether or not outside interventions are a useful form of conflict management is an empirical question that can be answered with the data.

To achieve their objectives an intervener must manipulate the costs of continued fighting, the benefits from settlement, and do so in a way that convinces both sides that settling now is preferable to the same outcome at some future time. Some might think of this as using an intervention to create a 'ripe' moment (eg. Haass, 1990). In other words to be successful both sides to the conflict must come to the conclusion that, at least at this time, continued fighting presents too low an expected payoff. In decision-theoretic terms an intervention is trying to maximize the expected utility of each of the actors for settling now versus continued fighting until an expected victory. In effect, a conflict reflects a bargaining situation where information is gained through successive moves. Outside interventions effect the transmission of this information and its content. Most importantly, an intervention will affect each actor's estimate of their chances for victory by altering the balance of capabilities required to sustain the fight.

The willingness to settle a conflict today versus continuing to fight until victory is a function of expectations of future victory and current and anticipated costs. The balance of capabilities affects the combatants' estimation of the probability that victory can be achieved, both at time 't', and at some future period, 't<sub>n</sub>'. Likewise, costs, which are a monotonically positive function of time, are to some degree related to the balance of capabilities. Outside interventions can manipulate these expectations by initiating a biased intervention (ie, on behalf of either the government or the opposition forces), which can involve the user of force by the intervener.

Under these conditions the choice faced by the parties to the conflict involve trying to maximize their expected payoff from their participation in the war, such that:

$$\sum_{t=0}^n EU_t^{settle} = \sum_t [ (C_t^{settle} + B_t^{settle}) - p(C_m^{victory} + B_m^{victory}) + (1-p)(C_m^{defeat} + B_m^{defeat}) ]$$

where  $p$  is the probability of victory on the battlefield.  $C_t^s$  and  $B_t^s$ , respectively, are the costs and benefits associated with a settlement in the current time period, which would be a function of the cohesiveness of the rebel group (and/or the ruling coalition) and the concessions that the opponent is willing to make to stop the fighting. Settling now – or at any time between now and the time until victory – is judged relative to the anticipated cost and benefits ( $C_m^v$  &  $B_m^v$ ) from being victorious and the probability that each side will win. Costs always increase with increments of time, implying that  $C_t < C_m$ . Furthermore, we can assume that victory is preferred to a negotiated settlement, and therefore  $B_t^s < B_m^v$ . This implies that actors get more in future victory than they can through a current negotiated settlement. The two critical conditions most effectively manipulated by outside interventions are the respective expectations of victory and the costs associated with the

conflict. The strategy – or modality – of the intervention has an important impact on these expectations.

The notion of a strategy incorporates the target of the intervention, its timing and makeup, and whether or not to use force on behalf of the client. Intervening on behalf of either the government or the opposition has the immediate effect of altering the balance of capabilities. And since costs and estimates of victory will vary with time, the timing of the intervention will contribute to the willingness of settle now versus continuing the fight. Importantly, timing has a disproportionately large effect on the opposition because its ability to mobilize will be a function of battlefield effectiveness. Relative strength on the battlefield, moreover, affects reservation points and concession at the negotiating table. In general without an intervention the government will be more powerful relative to the opposition group, and therefore an intervention on behalf of the opposition should bolster their expectations for victory, particularly if the intervention comes early in the conflict.

If we think of two sides calculating the probability of winning the conflict, and from this estimate determining the value of a settlement now on terms less favorable than they would obtain in victory, then the closer the capabilities come to parity the more likely that 1) they will have some reasonable expectation of victory, and 2) that there will be significant error in this estimation. Outside military support for the government under these conditions should in the norm shift the balance of capabilities toward preponderance, and therefore the opposition might consider that the potential terms possible in negotiation have a higher utility than the outcome of further military contest. In other words, an intervention on behalf of the government should lead to shorter conflicts.

An intervention on behalf of the opposition should, in the norm, shift the balance of capabilities toward parity. Under these conditions the rebel leadership would have an increased expectation of their chances for victory. The closer the estimate gets to even odds the more likely there is to be “forecasting errors” on the part of the rebels (Collier and Hoeffler, 2000), and given a fixed level of grievance the intervention should encourage the rebel movement to fight on and eschew negotiations, at least at the present time. Two factors point toward this inference. First, as the balance of capabilities moves toward parity the rebels can at minimum expect to extract greater concessions at the negotiating table. The government, under conditions of parity, will have to make greater concession in order to buy off the rebel movement because of the rebels increased expectations for gaining concessions commensurate with their capabilities. If the government is unwilling or incapable of making concessions -- as they might be in an ideological conflict – the rebels will continue to fight. This might lead to what some have described as a hurting stalemate (Zartman, 2000). Second, in light of outside support for their movement the rebels are more likely to incorrectly estimate their chances for victory. Interventions in support of rebel movements are more difficult than those in support of a government for reasons of logistical efficiency and international norms, yet the net effect on a rebel movement is greater than the same intervention supporting a government. In effect, a small intervention supporting the opposition may increase their capabilities by a considerable amount, thereby bolstering their expectations, even though not convincingly weighing the balance of capabilities in their favor. This would lead the rebel leadership to press for greater demands and be more resolute in their decision to fight.

Moreover, the timing of an intervention should significantly influence the duration of a conflict through its effect on expectations. At the early stages of a conflict opposition movements will generally be small, lightly armed, and lacking the crucial support of the general public. Participation in opposition movements is costly and it often takes a small committed group to get the movement rolling (DeNardo, 1983; see also Collier and Hoeffler, 2000). So in the early stages we might anticipate that an armed opposition movement is rather fragile and more susceptible to military defeat or early accommodation. But after a period of consolidation by the opposition forces they will have higher – maybe even inflated – estimates of their prospects for victory, and increased levels of resolve to press on toward victory. Therefore, an intervention that takes place early in an armed rebellion should have a considerably greater impact on the future course of the conflict. For example, an intervention supporting the government early on will make the prospects for an opposition victory appear more dire and lead them to either settle for a compromise outcome or endure the overwhelming capabilities of the government. Alternatively, an early intervention on behalf of the opposition will facilitate the organizational capabilities of the opposition, contribute to the recruitment of additional troops, and increase estimates that they can hold out for victory. In short, early interventions should have a significant contribution to the expected length of a conflict, and the target of an early intervention will determine whether it contributes to a shorter or longer conflict. This leads to the first two hypotheses:

*H1: Unilateral interventions that support the government early in the conflict will shorten the expected duration of a conflict; and*

*H2: Unilateral interventions that support the opposition early in the conflict will lengthen the expected duration of a conflict.*

If the interest is in the effect of outside interventions on the time until the termination of a conflict, then the strategy of the intervention is important. Strategy is a multifaceted concept. It is used here to refer to the mix of military and economic instruments, as well as the manner in which they are employed to achieve the outcome. Either military or economic assistance can be given in large quantities or can be provided incrementally, and these increments can be used to support the government or the opposition. As mentioned above, the target of the intervention should have an independent effect on the duration of a conflict, though the mix and amounts should also directly influence the duration. The use of force by an intervener is a critical aspect of the strategy. By actively fighting on behalf of a client an intervener directly alters the balance of capabilities in favor of the side it supports. The opponent, therefore, would have to calculate its expected payoff in terms of settling or fighting in light of having to engage both its adversary and its adversary's ally. It would also follow that the timing of the use of force would influence the tempo of the participant's calculations, with an early use of force having a greater impact on expected durations than a later use.

Much of our theoretical expectations turn on the relative utilities each side has for various outcomes. We can see this by focusing on expectations for victory. If we assume that the decision to settle now versus continuing to fight is a function of their subjective

estimate of the probability of victory and their utility for various outcomes<sup>2</sup>, then if you can always negotiate now, each side will choose to continue fighting when

$$p (U_{\text{win}}) + (1-p) (U_{\text{lose}}) > U_{\text{neg}}$$

where  $p$  is the probability of victory,  $U_{\text{win}}$  is the utility derived from victory,  $U_{\text{lose}}$  is the utility from a loss, and  $U_{\text{neg}}$  is the utility from a negotiated settlement. Solving for  $p$  gives the conditions under which the opposing sides will sue for peace.

$$p > \frac{U_{\text{neg}} - U_{\text{lose}}}{U_{\text{win}} - U_{\text{lose}}}$$

In other words, the rebels will press on for victory when the ratio of what they stand to gain from a negotiated settlement relative to victory is less than the probability of victory. Since time is an important component of the costs of war (and therefore the utility of victory) the timing of an outside intervention will have a discernible impact on the decision process.

Furthermore, opposing interventions – unless of dramatically unequal quantities – would tend to maintain the status quo balance of relative capabilities, albeit at higher absolute levels. Both sides would anticipate that they have increased prospects for victory or a significant utility from holding out at the bargaining table for greater concessions from the opponent. In general opposing interventions prolong a conflict's expected duration.

This leads to three additional hypotheses:

*H3: The use of force by an intervener will shorten the expected duration of a conflict;*

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<sup>2</sup> I change here from the use of costs and benefits to a more general use of utilities. One can think of utilities over outcomes as the sum of costs and benefits that reflect the value attributed to settlement, victory, or defeat.



*H4: An early intervention that employs force will shorten a conflict relative to a late use of force by an intervener;*

*H5: Interventions that attract counter-interventions will increase the expected duration of a conflict*

Strategies for intervening go beyond the notion of military efforts by states supporting one side in a conflict. In other words the use of military instruments are not the only mechanism available to third parties (Regan, 1996; 2000; Elbadawi, 1999; Elbadawi & Sambanis, 2000). In fact if Elbadawi's analysis is correct, military interventions may not always be the best way to influence each side's utility of settling now versus continuing on until victory. We can see this most clearly by focusing on some of the causes of ethno-political conflict, and the benefits that can accrue from settling.

For example, the extent of ethno-linguistic fractionalization is linked theoretically to the onset and duration of civil wars (Elbadawi, 1999; Elbadawi & Sambanis, 2000), as well as empirically (Collier et al, 1999). Military interventions would appear to have little direct influence on the extent of societal fractionalization, beyond that of allowing rebel movements to portray a higher likelihood of prevailing and therefore organize more supporters into the movement. But ethno-linguistic fractionalization can be influenced by outside interveners, just not by a reliance on military instruments. Fractionalization is not an inherent aspect of a diverse society, but rather a function of the relative distribution of resources (eg. Gurr, 1993). The more maldistributed the resources in an ethnically diverse society the greater the level of fractionalization. And the more highly fractionalized the

society the greater the benefits from prevailing in a conflict. As a result mobilization is made easier by the offer to redistribute resources upon victory (Lichbach, 1995). Therefore one approach to shortening a civil war would be to intervene in a way that offers benefits to the rebels from settling now versus holding out for victory at some future time. This will increase the expected value of a negotiated settlement, reduce costs (which are a positive function of time), and retard the ability to effectively mobilize forces (which would decrease estimates of the probability of a rebel victory).

The strategy for intervening in a way that reduces the effects of ethno-linguistic fractionalization must focus on the potential benefits from settling now versus fighting until victorious, or the probability of victory. Multilateral interventions may serve this role by being 1) neutral (see Regan, 2000; Diehl, 1993), and 2) distributing resources rather than weapons. For example, the utility for victory declines as the degree of the maldistribution of resources declines. If opposing forces can gain resources without incurring the costs of conflict, their utility for settling now increases. Furthermore, as the benefits to be gained from victory decline it should be harder for the opposition to recruit fighters, thereby lowering the probability of victory. If we assume that neutral interventions are more likely to distribute resources in a manner that increases equality, we should expect that:

*H6: Neutral or multilateral interventions will lead to shorter expected durations than unilateral interventions supporting either the government or the opposition.*

### *Research Design*

A useful way to think about the effect of interventions on a conflict's duration is as an intervention taking place at a discrete point in time. As a result of an intervention the conflict either remains at the status quo condition or moves to an alternative state, which we will call the termination of the conflict. The concern, therefore, is with the effect of these discrete events on the timing of the transition between outcome states. The approach to testing such effects is to use a duration, or hazard, model (Blossfeld and Rohwer, 1995; Bennett, 1999; Box-Steffensmeier and Jones, 1997). Hazard models allow us to determine the likelihood of a transition to state  $t_i$ , Given it is at state  $t_0$ , for a series of explanatory variables. Moreover, to fully capture the effect of an intervention we need to know the probability of a transition from state  $t_0$  to  $t_i$  given an intervention at some point  $t_n$ , where  $t_0 < t_n < t_i$ .

There are different approaches for incorporating the effects of explanatory variables into a duration model. One is to hold the covariates constant at a fixed point and examine the impact of that event on expected durations. Doing so reduces the amount of useful information associated with the causal process, and assumes that there is not variation in effect on outcomes within a case over time. An alternative method is to employ a hazard model where the explanatory variables vary as a function of time within a particular case. This class of variables is called time varying covariates (TVC) (Bennett, 1999; Bennett and Stam, 1996; Regan and Stam, 2000; Blossfeld and Rohwer, 1996).

The use of hazard models and TVCs is adopted largely from the medical sciences, and posits a causal relationship much like that of a patient with a disease, a medical intervention, and the expected time until the patient dies from the disease. The patient may

receive treatment at time  $t_n$  (as well as subsequent treatments) and we can count the days (months or years) until the patient passes on. Some patients may receive weekly treatments, some monthly, some only once, and some never get treated. Furthermore, the dosage administered may vary over time and across patients.

This analogy to civil conflicts and interventions is not unreasonable. The conflict is conceptually similar to the patient, the intervention to the treatment, and the conflict either remains active (alive) or terminates at some point  $t_i$  (the patient dies). Because I have no prior expectations about the duration dependence of civil conflicts, I adopt a Weibull specification that allows this to be tested.<sup>3</sup> Without any covariates, the basic functional form of the hazard rate  $\lambda(t)$  using a Weibull specification is:

$$\lambda(t) = \lambda p (\lambda t)^{p-1}$$

The function  $\lambda(t)$  is the hazard rate at some time  $t$ . The parameter  $p$  on the right hand side of the model represents the duration dependence estimate. The parameter  $p$  determines the shape of the hazard function, thereby accounting for duration dependence. When  $p=1$ , there is no duration dependence, and the hazard rate  $\lambda(t)$  equals the constant rate 1. When  $0 < p < 1$ , the hazard rate decreases monotonically over time. When  $p > 1$ , the hazard rate increases monotonically, though not necessarily linearly. Covariates (independent variables) can be added into the model as influences on the hazard rate by specifying:

$$\lambda = e^{-\beta x_i}$$

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<sup>3</sup> There are alternative specifications of hazard models (eg. Cox proportional hazard), each of which makes different assumptions about duration dependence. I use a Weibull specification because it does not assume a functional form of the dependence parameter, but instead allows one to test for the existence of duration dependence. All analyses were run using STATA 5.0.

I estimate a hazard model that accounts for the impact of a series of covariates on the expected duration of a conflict. This model includes time varying covariates as well as time invariant ones. I control for the characteristics of the conflict, as well as markers identifying various aspects of any associated intervention.

Data on civil conflicts during the period 1944 through 1999 are used to test the hypotheses outlined above. These data are an extension of those generated and reported by Regan (1996; 1998; 2000) and include information on the conflict and any associated interventions. The extensions involve two dimensions of the earlier data set. First, I extend the temporal period from 1994 through 1999. Second, I record information about the intervention along a number of specific categories. The month and year in which an intervention is undertaken is recorded, as is the type and magnitude of the intervention. For example, a military intervention into a conflict would be recorded as to whether it involved one of six categories (troops, naval support, equipment or aid, intelligence or advisors, air support, or sanctions), and the size of the intervention in each category. Size is recorded in terms of the number of troops, the dollar value of the aid, the number of weapons, or whatever the particular metric applicable for the specific category. Additionally, I recorded interventions in which there was a direct use of force by the intervener. The same type of information was recorded for economic interventions.

For each particular month that a conflict is ongoing data are recorded on a number of contextual and structural variables, as well as the initiation of any outside interventions. There are 150 conflicts of which 49 have not had an outside intervention; 31 of the conflicts are right censored (or still ongoing as of December 31, 1999). Of the 101 conflicts with interventions, the number of individual interventions ranges from one to 75. There were a

total of 1036 individual interventions in the 100 conflicts.<sup>4</sup> For each month that a conflict was ongoing a data point was recorded, and within each conflict-month data on characteristics of the conflict and any interventions were identified and recorded. The unit of analysis is the conflict month. There are a total of 13,048 conflict months in the data. The longest running conflict spans a total of 616 months; the shortest lasting only one month.

### *Outcome Variable*

The outcome variable is operationalized as the duration of the conflict in months. Each conflict month is coded zero if the conflict continues during that month and one if it terminates during the month. A conflict is considered to have ended when the military hostilities have ceased for a period of at least six months. Conceptually this frames the outcome in terms of settlement rather than resolution. Resolving a conflict is a task far beyond the capabilities of a military or economic intervention, and it would be unreasonable to attribute the resolution of the issues at stake to an intervention of this form. A six-month respite from the fighting gives the policy community time to initiate additional (or alternative) methods of conflict management that may facilitate the resolution of the conflict. This is also a criterion used to determine the termination of Militarized Interstate Disputes (Jones, Bremer and Singer, 1996).

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<sup>4</sup> Data on the conflict in Israel was dropped from the analysis. The Palestinian conflict within the occupied territories of Israel presented unique and insurmountable coding problems. Numerous outside actors intervened in support of either the Palestinian cause or the Israeli's, but it was nearly impossible to identify each specific intervention and to determine that it satisfied the convention-breaking and authority-targeted criteria. Additionally, support for the Palestinian's does not always come to or through the PLO, making it particularly difficult to determine what constitutes an intervention. So much of the aid for Israel and the Palestinians reflects ongoing commitments, even though it also seems to be targeted directly to the patterns of authority. In this sense much of what transpires in this conflict meets the authority-targeted criterion but not

### *Predictor Variables*

The predictor variables in my model of interventions reflect characteristics of the conflicts and the intervention. In broad terms they are: 1) whether there was an intervention, 2) aspects of the timing of the intervention, 3) the number of casualties, 4) the intensity of the conflict, 5) the type of intervention, and 6) characteristics of the parties to the conflict . To develop the concept of a strategy for intervening I disaggregate the intervention variables so as to create indices that reflect the type of third party involvement. I operationalize the predictor variables as follows:

- The *type of intervention* is coded on two dimensions. First, whether the intervention involved military or economic instruments. Each individual intervention is recorded and what appear to be simultaneous (or mixed) interventions are given discrete times 1/10 of a month apart. The data in its raw form records the specific makeup of either the military or economic instruments used in the intervention. Second, a dummy variable was created to reflect the use of military force by the intervener.
- *Casualties* are recorded in aggregate numbers reported for each conflict. This reflects an ex post indicator of the cost of the of the conflict, and I assume that because this is monotonically increasing with time the principles are able to observe this increasing cost.
- *Intensity* is operationalized as the average number of casualties per month of the conflict.
- *The Target* of the intervention is operationalized as a dummy variable marking whether the specific intervention supported the government, the opposition, or was neutral. A dichotomous variable reflecting whether the intervention was biased (in support of the government or the opposition) or neutral is used in the analysis. The number of interventions supporting the government was 608, the opposition 378, and there were 50 neutral interventions.
- *The timing* of an intervention is recorded in terms of the month in a conflict in which it took place.
- *Conflict Type* was operationalized in terms of the primary identification of the groups in conflict. Three types of conflict were recorded: Ethnic, Religious, and Ideological. Identification of the primary orientation of the groups was based on

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the convention-breaking one. See Regan (2000) for a full discussion of the operational definition of an intervention.

the Minorities at Risk classification (Gurr, 1995; see Regan, 1996; 2000 for a description). This nominal coding was disaggregated into three dummy variables marking the type of conflict. A variable that reflects ethnic or religious, versus ideological, conflicts was created from the dummy variables.

- A dummy variable records the *use of force* by the intervener, with the timing of each use of force used to control for the effect of the specific time that force is used in the life of a conflict.
- Data on the *ethnic makeup* of the society was taken from Ellingsen (2000) and reflects the percentage of the population of the largest ethnic group in the society. Data for Chad, Azerbaijan, and Pakistan were based on the size of the largest religious group.
- If the intervention was carried out under the auspices of an *international organization* a dummy variable records this. There were 107 such interventions.
- *Opposing interventions* are recorded in terms of interventions that take place in an offsetting sequence. Data are recorded as a marker identifying the existence of an opposing intervention. For example, if an intervention supported the government the next intervention would have to support the opposition for it to be recorded as an opposing intervention. If there are multiple interventions recorded in a given month, and they support opposing actors, each is considered part of the opposing intervention. A neutral intervention is not recorded as opposing a prior intervention by either the government or the opposition.

### *Results*

The baseline hazard function of the probability of a conflict ending at any time  $t_i$  given that it is ongoing at  $t_0$  can be seen in figure 1. The y-axis represents the probability of a conflict continuing at any given point, while the x-axis represents the number of months a conflict is ongoing. We can see that conflicts without third party interventions are quite likely to end within the first few months of the conflict, with the curve flattening out somewhere around the first few years of the conflict. Those conflicts with interventions demonstrate a somewhat different pattern, with a much less pronounced drop off in the probability of a conflict ending early, with the curves intersecting only after about 15 years of conflict. For example, the probability of a conflict surviving to the 48<sup>th</sup> month without an intervention is about 37%, while with an intervention that probability is about 60%. This suggests that



until a conflict becomes rather entrenched the effect of an intervention is to contribute to a longer running conflict.

**[Figure 1 about here]**

Table 1 presents the results of the Weibull model of conflict duration with the unit of analysis being the conflict-month. The results are presented in an accelerated time-failure metric, and identify the effect of an outside intervention on the expected future duration of a conflict, when controlling for some of the characteristics that define its scope. The coefficients associated with an accelerated time failure parameterization can be translated into expected time until the end of a conflict (Box-Steffensmeier and Jones, 1997). While a direct interpretation of the results is somewhat problematic, in general a unit change on a predictor variable has an effect on the expected time until the conflict ends that is consistent with the sign of the coefficient<sup>5</sup>. If you exponentiate the coefficient the marginal effect can be calculated in terms of the percentage longer (or shorter) that we would expect a conflict to continue. For example, when the conflict is organized around ethno-religious groups in conflict the hazard that the conflict will end decreases by about 36% less likely than conflicts organized along ideological lines ( $e^{-.31}$ ). Likewise, The results suggest that opposing interventions reduce the probability that a conflict will end in the next period by well beyond 1000%. And contrary to what one might think about the effect of the costs of the conflict, the total number of fatalities does not influence the expected time until the conflict ends. An increasing number of fatalities per month, however, does reduce the

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<sup>5</sup> The actual impact of a change on one of the predictor variables is a function of the timing of all other predictor variables and the time at which the change takes place (see: Teachman and Hayward, 1993)

likelihood that a conflict will end sooner (4%). We must evaluate this role of costs (fatalities and intensity) with caution, however, because both represent ex post indicators of the cost of continued conflict.

Table 1  
Duration Model of Civil Wars: Outcome Time (months) to Termination

Variable	Model 1			Model 2		
	Coeff.	S. Error*	Stat. Sig.	Coeff.	S. Error*	Stat.Sig
Opposing	11.3	1.02	.000	11.7	1.09	.000
Govt X Military	---	---	---	-.01	.68	.981
Govt X Economic	---	---	---	11.2	1.45	.000
Opp X Military	---	---	---	.53	.50	.298
Neutral X Mil	---	---	---	11.7	1.17	.000
Neutral X Econ	---	---	---	11.3	1.26	.000
Military Interven	11.3	1.17	.000	---	---	---
Econ Interven	21.9	2.05	.000	---	---	---
TimeXForce	.018	.016	.278	.018	.015	.258
Use of Force	-.53	.79	.504	-.60	.72	.401
Homogeniety	-.005	.003	.113	-.005	.003	.116
Fatalities	.13 X 10 <sup>-5</sup>	.50 X 10 <sup>-6</sup>	.007	.13 X 10 <sup>-5</sup>	.5 X 10 <sup>-6</sup>	.008
Intensity	.04	.006	.000	.04	.006	.000
Ethno-Religious	.31	.12	.011	.30	.12	.013
TimeXGovt	-.001	.017	.946	.007	.02	.776
TimeXOpp	-.02	.004	.000	-.02	.004	.000
Target (gov/opp)	-10.9	1.27	.000	---	---	---
Inter. Organization	.04	.42	.921	.34	.43	.432
Intervention	.08	.12	.503	.09	.12	.472
Constant	2.52	.31	.000	2.53	.307	.000

Rho = 1.37;  $\sigma$ =.117

Rho= 1.38;  $\sigma$ =.123

\*Robust standard errors are used to control for clustering on conflicts

Subjects: 150

Subjects: 150

Failures: 119

Failures: 119

Obs: 13048

Obs: 13048

Log Likelihood: -168.97

Log Likelihood: -169.27

Wald Chi2 (14 df): 322.9;  $p$ < .000

A conflict with a late intervention on behalf of the opposition is about 2% more likely to end in the next month than if the intervention was earlier, but the timing of an

intervention supporting the government has no effect on expected durations. But regardless of the character of an intervention – whether it be military or economic – both are associated with longer conflicts. For example, military support for either the government or the opposition results in a decreased hazard of the conflict ending in the order of magnitude of  $10^6$  while economic interventions are even less likely to contribute to the end of a conflict. Interestingly enough, conflicts with biased interventions are considerably more likely end in the next period than are those with neutral interventions.

Furthermore, the estimate of ‘ $p$ ’ – the duration dependence parameter – suggests that the longer a conflict is ongoing the sooner it can be expected to end. That is, civil conflicts have a positive duration dependence. This shows up as  $p > 1$ . This suggests that civil conflicts wear out the opposing factions. To demonstrate the expected magnitude of this institutionalizing effect I calculate the decrease in the hazard rate across various points in time and then compare these hazard rates to each other (see Box-Steffensmeier and Jones, 1997). The hazard at any specified point can be determined by<sup>6</sup>:

$$h(t=d) = \exp^{\beta_0/\rho} \times \rho \times (\exp^{\beta_0/\rho} \times d)^{\rho-1}$$

where  $h(t=d)$  reflects the time period at which the hazard rate is to be evaluated ( $d$ =month),  $\exp^{\beta_0/\rho}$  is the constant divided by the duration parameter  $\rho$ . Comparing hazard rates at different periods requires evaluating the hazard at  $d_1$  to  $d_2$  by the following formula:

$$h(t=d_2) - h(t=d_1)/h(t=d_1) \times 100$$

Table 2 presents the results of some representative hazard rates from selected time periods.

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<sup>6</sup> These formulae are derived from Box-Steffensmeier and Jones, 1997.

Table 2  
Time and the duration of Civil Conflicts

Duration	% $\Delta$ in baseline risk
1 month vs. 10 months	1.03%
10 months vs. 100 months	1.66%
100 months vs. 200 months	.13%
200 months vs. 300 months	.16%

The interesting interpretation from these results is that risk of a conflict ending between the 10<sup>th</sup> and the 100<sup>th</sup> months is 60% greater than in the first ten months, and 150% greater than in the period between the 100<sup>th</sup> and 300<sup>th</sup> months. As the conflict continues it remains more likely to end in each subsequent month, but at a non-linear rate throughout the life of the conflict.

### *Discussion*

The main questions addressed by this paper were whether third party interventions tend to shorten or lengthen the duration of intrastate conflicts, and whether particular strategies for intervening have different effects on the expected duration of a conflict. The analysis presented above gives a fairly solid foundation by which to evaluate these questions. First, if a conflict attracts opposing interventions the likelihood of the conflict ending in the next month drops precipitously close to zero. Second, it appears that interventions themselves - whether military or economic - do not act as effective tools of conflict management. That is, either type of intervention alone greatly increases the expected duration of a conflict. Third, the timing of an intervention appears to have little or no independent effect on the

duration of a conflict; I will come back to this topic shortly. Fourth, it does make a difference whether the intervener supports one side in the conflict rather than trying to be neutral, in the sense that a biased intervention will shorten the expected duration relative to a neutral intervention. And finally, there are certain characteristics of the conflict that will affect its expected duration, independent of attempts to manage it through outside interventions.

I will first review the evidence in light of the articulated hypotheses and then discuss some of the implications in terms of theoretical development and policy formation.

Hypotheses 1 & 2 posited that the timing and the target of an intervention would have a direct impact on the likelihood that a conflict will continue into the following month. Keeping in mind that empirically this was operationalized as a time varying covariate, meaning that the evidence evaluates the effect of specific interventions at particular points in time during a conflict, the results do not support the hypotheses. For example, I hypothesized that an early intervention on behalf of the rebels would lengthen the conflict, while an early intervention supporting the government would shorten it. In terms of the effect of an intervention supporting the government, there is no statistically significant relationship to the duration of a conflict. The evidence relating the timing of an intervention supporting the opposition is in the anticipated direction and is statistically significant, but the substantive impact is quite small. So although hypothesis #1 is refuted and #2 is confirmed, the ability to draw inferences from them is muted by the meager marginal impact of this strategy for assisting the opposition movement. The evidence is of course mixed because overwhelmingly *any* intervention tends to increase the expected duration of a conflict. A good strategy is not enough. This can be seen in model 2, Table 1

where interaction variables reflecting the type and target of an intervention are used to examine more closely the impact of the strategy of an intervention on the expected duration of a conflict. Overwhelmingly the conclusion is that regardless of the target or the type, an intervention tends to decrease the likelihood that a conflict will end in the next month.

Hypotheses three through five postulate that the use of force by the intervener and the existence of counter interventions will have an impact on the likelihood that a conflict will end in the next period. That is, opposing interventions are expected to prolong a conflict while the timely use of force should shorten the conflict. The results, however, suggest that the use of force has no bearing on whether or not a conflict will end in the next period, but any conflict that attracts opposing interventions is considerably more likely to remain ongoing than a conflict that does not have interventions supporting both sides. In fact this result is so strong and remains robust on all model specifications that one can only conclude that opposing interventions exacerbate a conflict and cannot be driven by a motive of conflict management.

Quite surprisingly the evidence does not support hypothesis six. Neutral interventions are strongly associated with longer conflicts than are biased interventions. Two points are quite remarkable about this and deserve mention. First, neutral interventions would appear on their face to be the *sine qua non* of a policy designed to manage a conflict, yet the evidence suggests that neutral policies are largely incapable of contributing to the termination of a conflict. Second, interventions carried out under the auspices of international organizations have no independent effect on the expected time until a conflict ends. Conventional wisdom would suggest that 1) there would be a high degree of overlap between neutrality and multilateral interventions (Diehl, 1995; Regan,

2000), and 2) that the perceived impartiality of international organizations would facilitate the more immediate end to the fighting. There are two potential explanations to account for the lack of empirical support: international organizations are not always neutral and neutrality during an ongoing conflict may be insufficient to convince the actors that stopping the fighting is in their best interest. In short, neutral interventions are tentative rather than definitive. Furthermore, only about 45% of the interventions by international organizations were neutral with respect to the parties in the conflict and therefore many of the instances of multilateral interventions simply reflect a strategy somewhat analogous to that of a unilateral intervention. Impartiality and multilateral organizational structures may be more effective at maintaining stability once a conflict has ended, but they do not seem to be characteristics of an intervention that facilitates the quick end to an ongoing conflict.

The policy implications of these results are fairly stark. 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. Regardless of how the intervention is conceived – or empirically operationalized -- there seems to be no mix of strategies that lead to shorter expected durations.<sup>7</sup> Even maintaining a neutral posture or organizing the intervention under the auspices of a multilateral rubric is not sufficient to form an effective means of conflict management.

Clearly the notion of what constitutes an effective intervention strategy is an important element in understanding how civil conflicts are managed. When focusing exclusively on military and economic forms of outside interventions, conflicts appear to be not only ineffectively managed, but the interventions themselves appear to prolong the

conflict. Further theoretical development must account for the simultaneous impact of diplomacy as a tool of conflict management, as well as rethinking the assumption – implicitly adopted here – that the effect of an intervention reflects a proportional hazard rate over time (Box-Steffensmeier and Zorn, 2001). The results further suggest that policymakers need to think more critically about the role of military or economic interventions if their objective is to manage the violent aspects of a conflict.

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<sup>7</sup>The evidence suggests that biased interventions shorten dramatically a conflict relative to a neutral intervention, but this is tempered by the fact that any type of intervention lengthens the time until the conflict ends relative to no intervention.



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