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Third-party intervention in civil wars: motivation, war outcomes, and post-war development.

Kim, Sang Ki

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THIRD-PARTY INTERVENTION IN CIVIL WARS:

MOTIVATION, WAR OUTCOMES, AND POST-WAR DEVELOPMENT

by

Sang Ki Kim

An Abstract

Of a thesis submitted in partial fulfillment
of the requirements for the Doctor of
Philosophy degree in Political Science
in the Graduate College of
The University of Iowa

December 2012

Thesis Supervisor: Associate Professor Kelly M. Kadera

ABSTRACT

Why do third-party interventions in civil wars sometimes positively contribute to fast conflict resolutions and post-war development and sometimes backfire? To solve this puzzle, I present a conceptual framework that links the motives and methods of intervention to civil war outcomes and post-war development. Two contrasting motives, self-interest and humanitarian concerns, lead to different intervention types. Self-interest prompts states to undertake unilateral and biased intervention. Humanitarian concerns encourage states to engage in multilateral intervention through the UN with a biased position. Interveners are more prudent in the use of force. They resort to violent methods only when critical security interests are at stake or when extreme humanitarian disasters occur.

The method of intervention reflects interveners' motives and significantly influences civil war processes and post-war development. The effects of intervention on civil war duration and outcome, however, tend to be inconsistent with interveners' intentions. I find no empirical evidence that external intervention is likely to make civil war shorter. Whether interveners are motivated by humanitarian concerns or self-interest, they tend to fail to achieve their best outcome: a faster victory for their protégé or a faster negotiated settlement. Instead, biased interveners succeed in retarding military victory by their protégé's rival. Neutral interveners play a role in delaying time until government victory, regardless of their intention.

The effects of intervention on post-war development are somewhat consistent with interveners' intention. Multilateral intervention motivated by humanitarian concerns tends to promote post-war well-being by increasing resources available for post-war reconstruction. On the other hand, unilateral intervention tends to impede the improvement of post-war quality of life. The use of force also has negative impacts on post-war development. The reason is that those interventions pursing self-interest

produce a less-respondent government and reduce available resources. Military victory is more likely to improve post-war quality of life than is a negotiated settlement. However, the positive effects of military victory are realized only when a group wins a victory without biased support from foreign powers. I find that multilateral intervention using nonviolent methods and having an unbiased stance may be the best way for the international community to help post-war development.

Abstract Approved: _____

                                                     Thesis Supervisor

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Iowa City, Iowa

CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This is to certify that the Ph.D. thesis of

Sang Ki Kim

has been approved by the Examining Committee
for the thesis requirement for the Doctor of Philosophy
degree in Political Science at the December 2012 graduation.

Thesis Committee: _____
                  Kelly M. Kadera, Thesis Supervisor

                  _____
                  Brian Lai

                  _____
                  Sara McLaughlin Mitchell

                  _____
                  Cameron G. Thies

                  _____
                  Jae-On Kim

To Sehee, Kelly, Heajeong, and my parents

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INTRODUCTION

How do third-party interveners influence the duration and outcome of civil war

and in the longer term post-war development? If they positively contribute to a faster

conflict resolution and make a post-war state a better place to live in than when they are

not involved, how can they do so? If unfortunately the opposite results are true, why do

they cause such consequences? This thesis seeks to answer those questions.

Puzzles of Intervention Effects

Since World War II, while interstate war has relatively rarely occurred, civil war

has dramatically increased in frequency. In the late 1940s, the number of ongoing civil

wars that had at least 200 casualties was less than 10, but it reached 54 in 1992 (Regan

2002) (see Figure 1.1).[1] As civil wars erupt and threaten the security of individuals and

states in both domestic and international areas, they have emerged as a major issue of

international politics and have been targets for international intervention.

Out of 150 civil wars between 1944 and 1999, 97 experienced intervention by

foreign countries or international organizations (IOs) (Regan 2002). They include well-

known conflicts in Afghanistan (1978-1992), Nicaragua (1982-1990), Rwanda (1990-

1994), Somalia (1991-ongoing), and in the Balkans in 1990s, and less familiar wars, such

as the Mozambican war (1979-1993) and the Djiboutian civil war (1991-1994). One of

the latest examples is the Libyan civil war (2011) in which a coalition of western major

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[1] This tendency is also held in other dataset including the Correlates of War (COW) Intra-State War dataset
(Sarkees 2000) and Fearon and Laitin's (2003) dataset that have different thresholds to decide whether a
conflict is civil war (see footnote 3).

powers containing the US, the United Kingdom (UK), and France intervened under authorization from the United Nations (UN). In proportion with the increase of civil wars in progress, the number of civil wars undergoing external intervention has risen (see Figure 1.1).

Figure 1.1 Ongoing Civil Wars and Third-Party Intervention, 1944-1999
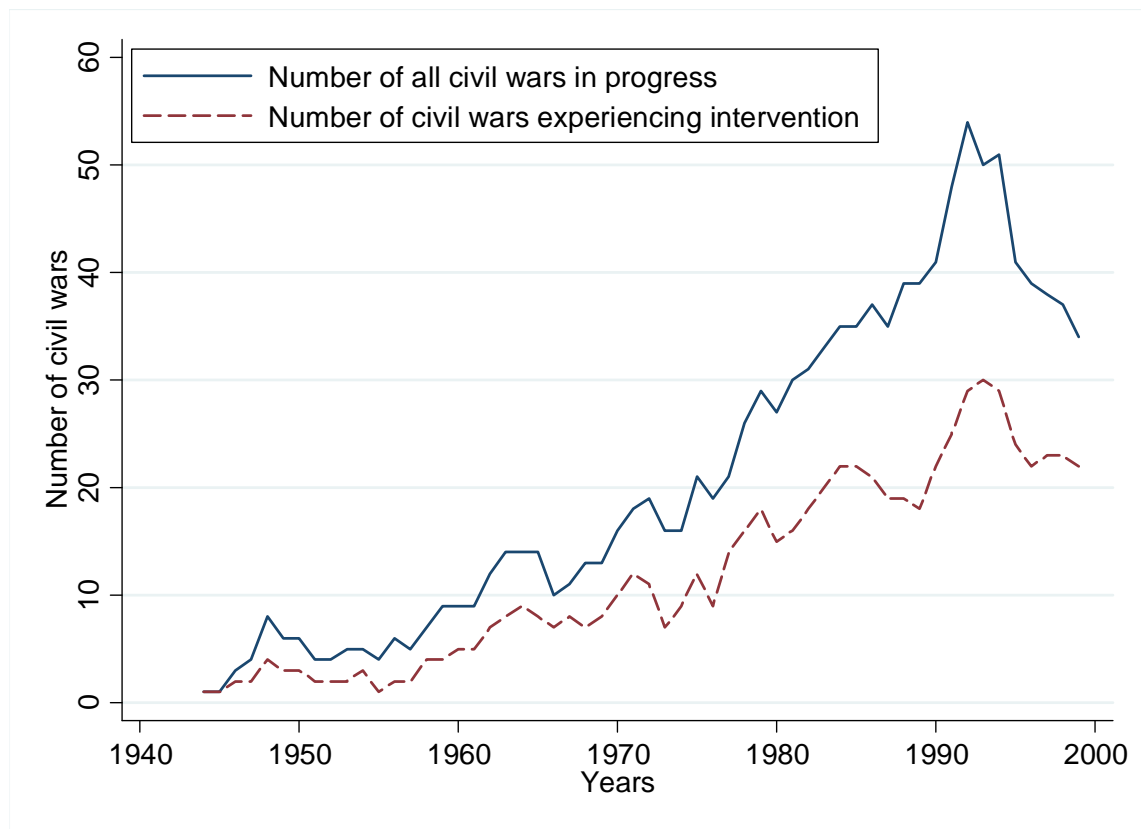
Note: Data are based on Regan (2002).

While foreign powers are involved in a majority of civil wars, the consequences of intervention are varied, which is a main topic of this research project. In 1979, the Soviet Union intervened in the Afghan civil war to support a pro-Soviet regime, and other states including the US, Iran, and Pakistan followed to assist the opposition. The

outcome of the war that lasted for 14 years and inflicted 0.2 million fatalities was a victory by the opposition (Regan 2002). However, another conflict occurred soon after the opposition victory and Afghanistan fell in the mire of a failed state. In the early 1990s, disastrous scenes of the Somali war, broadcast by television, were enough to encourage the UN to undertake military intervention in the war. The US-led UN peacekeepers, however, faced strong resistance from local war loads and failed to accomplish their missions. That civil war has not terminated up to the present (November 2012). On the other hand, the results of the Djiboutian civil war (1991-1994) in which France was involved were less tragic. The war lasted for a relatively short period, 2 years and a half, caused about 1,000 casualties (Regan 2002), and ended by a peace accord between the government and a rebel group. The UN intervention in Libya in 2011, which terminated the civil war within 8 months and led to a rebel victory, can also be evaluated as a successful case in terms of war duration, although it is still unclear whether Libya will be able to succeed in post-war recovery and building sustainable peace.

The degrees of post-war development of states that experienced outside intervention are also divergent. Under the auspices of UN peacekeepers, Mozambique not only ended a fourteen-year-long violent conflict but also succeeded in rebuilding post-war society (Paris 2004; Howard 2008). During the five years after the end of civil war (1993-1998), Mozambique exhibited fairly good economic and social performance: its real Gross Domestic Product (GDP) per capita increased from $182 to $225 (an annual average: 4.4%), and life expectancy also gradually improved from 44 to 47 years. On the contrary, the post-war performance of Chad where France undertook military intervention to support the government was relatively poor: its GDP per capita only

slightly increased from \$177 to \$190 (annually 1.5%) and life expectancy even reduced

from 49 to 48 during the five years after war termination (1997-2002).[2]

If these results are not merely the products of intrinsic characteristics of civil wars

or civil war states, why does third-party intervention sometimes lead to desirable

consequences and sometimes backfire? Why do some interventions expedite conflict

resolution and others result in stalemate? Why did international forces fail to fulfill their

goals in Afghanistan and Somalia? Why was Mozambique successful in reconstructing

post-war society? Can we expect that the new Libyan government will be able to succeed

in building a better country to live in? Is there any general method for the international

community to positively contribute to faster conflict resolution and post-war development?

These questions are part of a puzzle about the effects of intervention on the duration and

outcome of civil war and post-war development, and the literature on civil war

intervention provides important clues.

Motives and Methods of Intervention: Another Puzzle

A key to the puzzle of intervention is the intervening states' motives. In other

words, the effects of intervention may be associated with why states intervene in civil

war. On the one hand, civil war intervention can be motivated by interveners' self-

interest, such as the maintenance of regional influence, the expansion of markets, and

access to natural resources (Morgenthau 1967; Lemke and Regan 2004; Pugh 2004;

Bueno de Mesquita and Downs 2006; Findley and Teo 2006; Gent 2008, 2010; Gibbs

2009). On the other hand, humanitarian disasters caused by civil war can encourage states

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[2] Data for GDP per capita (constant 2000 US \$) and life expectancy are based on the World Bank
Development Indicators.

to intervene in internal affairs in other countries, and the interveners' goal may be to stop violent conflict and save lives rather than to seek self-interest (Weiss 1999, 2007; Doyle and Sambanis 2000, 2006; Western 2002; Finnemore 2003; Gilligan and Stedman 2003; Fortna 2004a, 2008; Sambanis 2008). The different motives of interveners can guide whether they will act for their own interests or for humanitarian purposes, and thereby result in different consequences. We can speculate that humanitarian interveners are better able to make a positive contribution to conflict resolution and post-war development than self-seeking interveners, if unintended results do not take place. This means that understanding the motives of intervention can help solve the puzzles of intervention effects.

Another key is the methods of intervention. In order to be involved in a civil war, interveners make decisions on whether to be biased or neutral; whether to intervene through the UN or unilaterally; and whether to use military force. Note that interveners do not randomly choose intervention methods. They opt for intervention strategies that can justify their motives or are effective in achieving their goals (Weiss 1999; Finnemore 2003; Barnett and Weiss 2008; Gent 2008). Therefore, we can expect that intervention methods, by reflecting interveners' motives and goals, are likely to make differences in intervention effects.

Suppose that multilateral intervention is motivated by humanitarian concerns and unilateral intervention by self-interest (as Finnemore 2003 implies). If so, we can expect that multilateral intervention having legitimacy is more likely than the unilateral approach to mobilize international assistance for recovery of war-torn states. In addition, each intervention method has its own mechanism functioning for intervener's goal. For

example, while biased interveners try to alter the balance of power in favor of their protégé, neutral interveners attempt to maintain the current balance to facilitate a compromise between combatants (Mason et al. 1999; Regan 2000; Gent 2008). Biased intervention is therefore likely to have different effects on civil war outcome from neutral intervention.

The reasoning that the motives and goals of intervention direct intervention methods and in turn lead to the consequences of intervention suggests that illuminating the underlying reasons for intervention methods can help solve the puzzle of interaction effects. Therefore, we need to comprehend how the motives and goals of interveners are associated with their intervention methods in the first place, which is another puzzle that this thesis seeks to unravel.

A Conceptual Framework and Arguments

Here I present a conceptual framework to study the motives, methods, and consequences of civil war intervention and propose my arguments about how they are associated with each other. Figure 1.2 describes the conceptual framework that presents causal relationships: (1) the motives of intervention guide the methods of intervention (Chapter 2); (2) intervention methods influence the duration and outcome of civil war (Chapters 3-4); (3) intervention methods also affect post-war development (by which I refer to social development or improvement of quality of life, see Chapter 5); (4) civil war outcomes that may be products of intervention make differences in post-war development (Chapter 5).

In the first place, states' two contrasting incentives, self-interest and humanitarianism, are likely to influence methods of intervention. When states seek their own interests, they primarily consider the benefits and costs of intervention and choose intervention types that are likely to increase their benefits. By influencing the future policy of target states, interveners can gain the benefits (Lemke and Regan 2004; Gent 2008). In this case, the methods are likely to be unilateral intervention, biased intervention, and the use of force. Using these methods, intervening states can avoid policy loss which may result from a compromise for multilateral intervention through the UN (Voeten 2001), expect a faster victory for their protégé, and expand their influence on target states after the end of war.

Figure 1.2 A Conceptual Framework: the Motives, Methods, and Consequences of Intervention
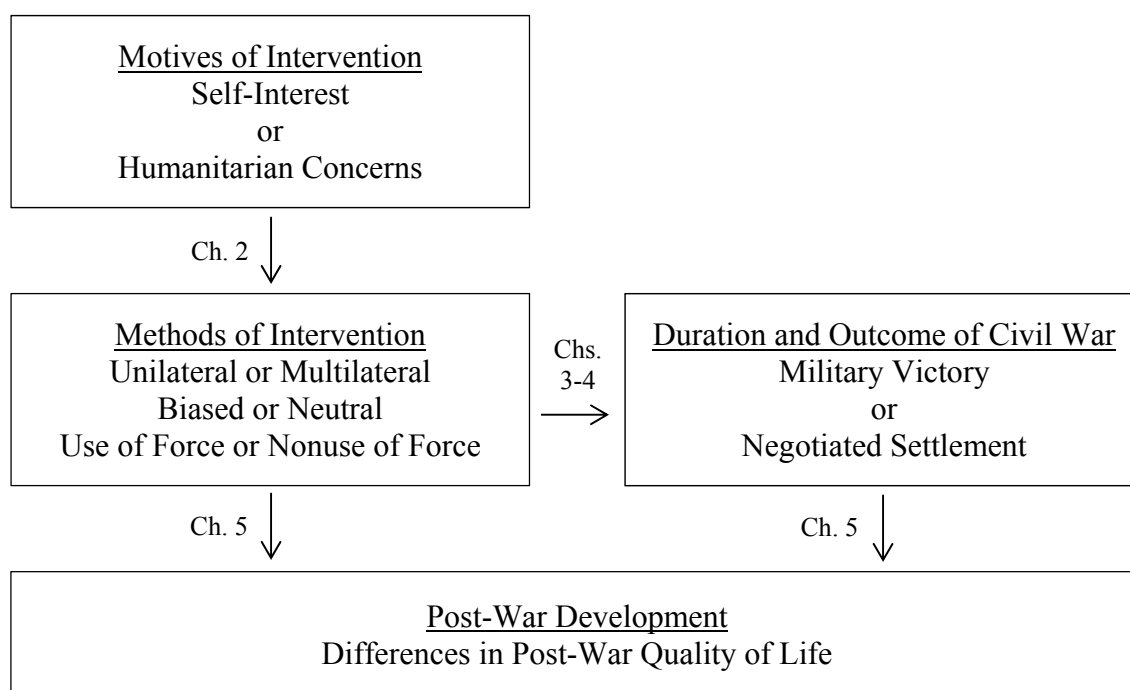
On the other hand, when states are motivated by humanitarian concerns, they are likely to care about the norms and goals of humanitarian intervention. By engaging in multilateral intervention through the UN instead of unilateral intervention, they can legitimize the cause of intervention (Finnemore 2003). The decision to be biased and whether to use military force may be relatively more complex decisions. If states primarily consider classic norms of intervention (Weiss 1999; Barnett and Weiss 2008), they are likely to decide to undertake neutral intervention without using military force. On the other hand, if interveners give priority to the ends of humanitarianism, saving lives at risk, they can justify biased intervention and the use of force to punish perpetrators and protect victims (Weiss 1999; Barnett and Weiss 2008).

The types of intervention reflecting interveners' goals can affect when and how civil wars end. In this second stage, I focus on the effects of biased or neutral intervention because the duration and outcome of civil wars are a function of the distribution of power between the government and the opposition (Elbadawi and Sambanis 2000; Gent 2008; Cunningham et al. 2009) and because biased or neutral intervention is the very method to influence the power distribution. Also, in this stage, I view civil war and third-party intervention from the bottom-up with a standpoint of warring parties, their domestic supporters and citizens. This view makes it possible to develop a distinctive theory that explains the unintended consequences of civil war intervention.

While foreign powers undertake biased intervention to support their protégé, they can face backlash and unintentionally provide an opportunity for the opposing group to develop, even when they are motivated by humanitarian concerns. The backlash occurs because biased interveners may provoke nationalist resistance and lead their protégé to be

unaccountable to its citizens (Rieff 2002; Weinstein 2007; Englebert and Tull 2008). Hence, biased interveners are likely to allow both a government and a rebel group to increase their fighting capabilities, and in turn they are likely to prolong civil war and fail to achieve their goals: their protégé's fast victory.

On the other hand, neutral interveners attempt to maintain the status quo and help combatants reach a negotiated settlement (Regan 2000). In the meantime, contrary to the intention of neutral interveners, one group having competitive advantages, either a government or a rebel group, has a chance to rapidly grow up, and in turn overwhelm the other. In this way, neutral intervention is likely to allow a group to win a faster victory, regardless of its intention. As a result, both types of intervention are likely to produce outcomes that are inconsistent with their intentions. These counterintuitive hypotheses will be deduced by developing and analyzing a dynamic formal model.

How do intervention methods make differences in post-war social development? In this stage, I put more focus on the effects of unilateral and multilateral interventions because those methods reflect interveners' motives more distinctively than do other types.[3] I expect that the effects of external intervention on post-war development are likely to be consistent with interveners' motives. Unilateral intervention seeking self-interest is likely to impede development of war-torn states. Unilateral interveners intend to expand influence on target states, thereby ensuring their own security and gaining political and economic benefits (Waltz 1979; Levi 1981; Mastanduno et al. 1989; Bueno de Mesquita and Downs 2006). They thus try to preserve or change a target state's governing systems so that they can control post-war policy. One result of this intervention is the formation of a less-respondent government (Bueno de Mesquita and

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[3] See Chapter 2's findings.

Downs 2006; Enterline and Greig 2008). While foreign interveners influence post-war policy to seek their own interests, a post-war government becomes less capable of providing public goods associated with citizens' quality of life. Another consequence is limitation of resources available for post-war development. A less-respondent government has greater difficulty collecting taxes that can be used for post-war reconstruction. Natural resource extraction by unilateral interveners further decreases revenues available for improving post-war quality of life.

When third parties engage in multilateral intervention through the UN on humanitarian grounds, they are likely to positively contribute to post-war social development by increasing available resources. Facilitating demobilization and disarmament (Fortna 2008; Doyle and Sambanis 2006), UN peace operations can help a post-war state divert military resources to urgent social welfare programs. UN intervention can also accompany development aid for the construction of infrastructures, such as health facilities and schools (Doyle and Sambanis 2006; Howard 2008). This aid can undermine a government's accountability by reducing its reliance on taxes from citizens. However, in war-torn states international assistance may matter more than governmental accountability for physical well-being of citizens at least temporarily, as long as it is not motivated by interveners' self-interest but by humanitarian concerns.

How a civil war ends can influence the degree of post-war development. When a civil war ends in a military victory, the winner that controls the post-war government is better able to monopolize violence and makes the state more stable than when it ends in a negotiated settlement (Wagner 1993; Licklider 1995; Fortna 2004a; Toft 2010). More stable societies are better able to meet citizens' basic needs, such as providing food, clean

water, and housing (Mori et al. 2004). The government that monopolizes violent instruments is not faced with a serious domestic security crisis, and thus it can divert more resources to social welfare. Furthermore, the monopoly of violent means enhances a state's extractive capacity (Tilly 1975, 1985). That is, it can make it possible for a post-war government to mobilize more taxes which can be used for post-war social development. Therefore, a decisive military victory is more likely than a negotiated settlement to positively contribute to the improvement of post-war quality of life.

However, if the victor received biased intervention from foreign powers during civil war, the positive effects of military victory may increase, decrease, or disappear. We can suppose two scenarios: (1) interveners motivated by humanitarian concerns aid one group and the supported group wins a civil war; (2) self-seeking interveners support the group that is likely to increase their future benefits and the supported group wins the civil war. In the first scenario, the international assistance that accompanies humanitarian intervention can further increase the positive impacts of a military victory, as long as unintended results do not occur. On the other hand, the second scenario allows us to expect that self-seeking intervention produces a less-respondent government and in turn reduces or cancels out the positive effects of a military victory. Both scenarios are possible, and thus I hypothesize that the effects of military victory on post-war development is likely to depend on whether a winner was supported by a biased intervener during civil war.

Scope and Definitions

I study third-party interventions in civil wars that have taken place throughout the world since World War II. By setting a geographical scope to all countries in which civil war occurred, this thesis can provide general implications regarding the motivation and outcomes of civil war intervention. I determine a time period–since World War II–considering the establishment of the UN, the spread of humanitarianism, and the eruption of civil wars after the war.

I follow the definitions of civil war and third-party intervention that are provided by Regan's (2002) dataset which is one of the most widely used datasets for the study of civil war and third-party intervention. The definition of civil war requires organized combat between groups in conflict which occurs within the territory of a state and results in at least 200 casualties (Regan 2002).[4] The start date of a civil war is regarded as when the number of fatalities reaches 200. The end date of a civil war is considered to be the point of settlement if there has been no reciprocal violence between groups for at least six months (Regan 2002).

Third-party intervention is defined as "convention-breaking military or economic activities" in a foreign country with the aim of "changing or preserving authority structures" (Regan 2000, 9-10).[5] Intervention therefore includes both military intervention (e.g., deployment of troops, equipment, or advisors, and naval or air support)

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[4] There are different thresholds to be recorded as a civil war. For example, in Fearon and Laitin's (2003) dataset, civil war must have at least 1,000 fatalities over its course, with at least 100 deaths per year on average. The COW Intra-State War dataset (Sarkees 2000) records an internal conflict as a civil war when it killed at least 1,000 battle-related deaths within a year. In UCDP/PRIO Armed Conflict dataset (Gleditsch et al. 2002), civil war requires a minimum of 25 battle-related deaths per year.

[5] The definition's two criteria (convention breaking and authority-targeted) are originally from Rosenau (1968). The use of this definition distinguishes intervention intending to affect internal war in other countries from the normal course of international influence (Regan 2000, 9).

and economic intervention (e.g., grants, loans, and sanctions). Multilateral intervention means UN-authorized intervention that reflects a consensus among the five permanent members of the Security Council. If a state intervenes in a civil war without authorization from the UN, the action is defined as a unilateral intervention. Cases of unilateral intervention therefore include instances when a state intervenes along with its allies without the UN authorization. When I refer to biased intervention, it means that a third-party supports one side, either the government or the opposition, in a civil war. If an external intervener uses armed force resulting in military clashes, I consider this to be a use of force.

Organization of the Thesis

In the following chapters, I develop hypotheses and empirically test them. Because key causal mechanisms and hypotheses were introduced in the previous section, here I briefly describe the research designs for each of the chapters. All hypotheses are tested using large-N statistical analyses. For the empirical tests, I employ Regan's (2002) dataset that encompasses 150 civil wars in 76 countries between 1944 and 1999, which also covers a wide range of information about intervention, such as timing and methods of intervention.[6]

Chapter 2 does not only investigate the motives and types of intervention which are emphasized in an overall conceptual framework of this thesis but also timing of intervention to make more contributions to the civil war intervention literature. The permanent five members in the Security Council are the most active interveners and have

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[6] Such information about intervention is rarely covered by other civil war datasets (e.g., the COW dataset (Sarkees 2000), UCDP/PRIO dataset (Gleditsch et al. 2002), Fearon and Laitin (2003), and Doyle and Sambanis (2006)). This is why I use Regan's (2002) dataset.

decisive powers over UN intervention, and thus in Chapter 2 I focus on the five major powers' intervention decisions. To test the hypotheses about how the motives of intervention are associated with the timing and methods of intervention, I use the competing risks Cox model, which is appropriate for analyzing the likelihood and timing of more than one type of event (Box-Steffensmeier and Jones 2004). The dependent variable is the duration from the onset of civil war to the occurrence of each type of intervention.

Chapters 3 and 4 address the question of how external intervention affects the distribution of power between two belligerent groups and the duration and outcome of civil war. In Chapter 3, I build a dynamic formal model of third-party intervention in civil war based upon a competitive hunters model which is developed in biology to analyze the growth and decay of two competing species in an environment. The dynamic model includes a baseline model of civil war, a biased intervention model, and a neutral intervention model. Equilibria and simulation results from the dynamic model yield hypotheses about how biased (pro-government or pro-rebel) or neutral intervention influences the capability gap between a government and a rebel group in conflict and thereby making changes in the duration and outcome of civil war.

Chapter 4 empirically tests the hypotheses developed through the dynamic model elaborated in Chapter 3. First, I estimate the effects of biased or neutral intervention on the capability gap between a government and a rebel group. To do so, I employ the two-stage probit least squares estimation method (Maddala 1983) considering reciprocal causation between external intervention and the internal capability gap. Second, in order to estimate how biased or neutral intervention influences the duration and outcome of

civil war, I use the competing risks Cox model in which the dependent variable is the duration from war onset until a government victory, a rebel victory, or a negotiated settlement.

Chapter 5 explores how third-party intervention and the outcome of civil war influence post-war social development. First, I examine the relationship between intervention method and post-war development. I pay more attention to the distinctive effects of unilateral and multilateral interventions, but I also test how the use of force or intervention without use of force makes differences in physical quality of life in war-torn states. Second, I develop hypotheses about the direct effects of war outcomes on post-war social development and the interaction effects between war outcomes and biased intervention, and empirically test them. Interveners can intentionally select cases where it is more or less difficult for them to make positive changes in post-war well-being. Therefore, empirical tests begin with a baseline model incorporating variables that may be associated with hard or easy cases. Controlling for the factors that influence the baseline prospect for post-war social development, I test the hypotheses about the effects of each type of intervention and war outcomes. To do so, I analyze the time-series cross-sectional data for post-civil war years using Panel Corrected Standard Errors (Beck and Katz 1995).

Chapter 6 summarizes key findings of this thesis answering the puzzles of intervention effects, and shows how this thesis extends the existing literature. It also presents implications for policy makers who are concerned with civil war intervention and post-war development. Finally, I briefly describe my future research plans.

CHAPTER 2

WHY, WHEN, AND HOW DO THIRD PARTIES

INTERVENE IN CIVIL WARS?

Facing civil wars in other countries, the five permanent members of the United

Nations Security Council (the P5) must decide whether or not they intervene in civil wars,

and whether to intervene through the UN or without authorization from the UN. Also,

they must decide on the manner of intervention, whether to use force and whether to be

neutral or biased in an intervention. They sometimes make a decision very quickly and

sometimes they do not. In the Bangladesh civil war in 1972, neither the UN nor any

major power intervened in the civil war. The Soviet Union was willing to unilaterally

intervene in Afghanistan's civil war in the late 1970s, with the use of force, and without

authorization from UN. The US quickly engaged in a unilateral intervention in

Nicaragua's civil war in 1980s, using military force and supporting only one side. In the

Rwandan civil war in the early 1990s, the P5 members deployed UN peacekeepers with a

neutral observer mission, hesitating to use military force.

Major powers' options on intervention raise the following question: when and

how do major powers intervene in civil wars? Several research projects have examined

the reasons for third-party intervention in civil war (Western 2002; Finnemore 2003;

Lemke and Regan 2004; Findley and Teo 2006; Gent 2007), and lessons from that

literature can help us turn to the investigation of timing and methods of intervention. In

particular, we need to know more about the determinants of whether intervention is

unilateral or multilateral, whether it is biased or neutral, and whether it uses or withholds

military force, which are likely to make differences in the duration and outcome of civil war and post-war development. A better understanding of what gives rise to particular types of intervention may be crucial to understanding the short- or long-term costs of civil war.

I argue that major powers are compelled to intervene in civil wars for two reasons, strategic interests and humanitarianism. These motives in turn influence *how* they intervene. In contrast, states, even major powers, hesitate to intervene in civil war because of the costs of intervention and the norms of sovereignty. Therefore, if major powers can expect the considerable benefit of intervention or if they have the humanitarian cause that can justify intervention, they are less likely to delay intervention. The two motives prompting intervention can come from the relationship between civil war states and potential interveners or the characteristics of the civil war. For example, major powers may intend to expand influence on their former colonies through intervention. Genocide can trigger humanitarian intervention by major powers. The expected benefits of intervention and humanitarian concerns not only make major powers less hesitant to intervene, but also motivate them to choose particular methods of intervention.

When strategic interests are at stake, major powers are more willing to urgently undertake unilateral intervention, biased intervention, and the use of force. They are likely to do so because they can expect more benefits through those types of intervention. Undertaking unilateral intervention, a major power does not have to compromise with other P5 members. Through biased intervention and the use of force, major powers can expect their protégé's decisive victory and in turn the expansion of influence. On the

other hand, facing humanitarian crises caused by civil war, major powers are likely to consider the norms and goals of humanitarian intervention. Humanitarian concerns are likely to motivate major powers to rapidly engage in multilateral intervention by which they can legitimize claims of the humanitarian cause. While the norms of neutrality and impartiality are likely to lead major powers to undertake neutral intervention and refrain from using military force, humanitarian goals to save lives at risk can help justify biased intervention and the use of force to punish perpetrators and protect victims.

This chapter focuses on intervention decisions by major powers that are the five permanent members of the Security Council, China, France, Russia, the US, and United Kingdom (UK). The five powers are primary actors in international politics of intervention. According to Regan's (2000, 28; 2002) dataset, the least frequent P5 intervener (China) has intervened more frequently than the most active non-P5 interveners (Libya, Iran, Cuba). The P5 have veto in the Security Council, and thus have a decisive power to undertake UN intervention. They have sufficient material resources to allow global military or economic reach. Therefore, I regard the P5 as potential interveners in this chapter.

In the following sections, first, I review the literature on civil war intervention showing the two motives of intervention, strategic interests and humanitarianism. Second, I discuss how strategic or humanitarian purposes influence the type and timing of major power intervention, proposing testable hypotheses. Third, I present a research design using the competing risks Cox model which compares the risks of a particular intervention type with those of an alternative option. Fourth, I show the results of the

empirical tests and discuss them. This chapter concludes with summary of findings and implications for following chapters.

Motives of Intervention

Previous studies of third-party intervention in civil wars show that there are two motives for civil war intervention, strategic interest and humanitarianism, and indentify the conditions under which intervention occurs. Some scholars emphasize promotion of peace or humanitarian goals (Western 2002; Finnemore 2003; Barnett and Weiss 2008). Human suffering from civil war can be important incentives which encourage states to rapidly intervene in civil war. On the other hand, other scholars find that third-party intervention is likely to be related to interveners' strategic interests (Lemke and Regan 2004; Findley and Teo 2006; Gent 2007). Major powers tend to pursue the expansion of influence on civil war states where their interests are at stake. To do so, they can quickly intervene in civil war. Prior studies provide important clues about the determinants of the timing and types of intervention: interveners will act according to the expected benefits or normative concerns.

Strategic Interests

The international influence model explains that the goal of intervention is the expansion of influence (Lemke and Regan 2004). Using Singer's (1963) argument about when and how states will attempt to manipulate other states' behavior, Lemke and Regan (2004, 148) demonstrate that "civil conflicts are situations in which many states may have powerful incentives to try to influence the outcome." Thus, civil conflicts may be

intervention opportunities enabling states to expand their influence on vulnerable states (Lemke and Regan 2004). Intervening in a civil war, major powers may have expansionist goals and seek to control or enlarge their sphere of influence (Weisburd 1997).

Interveners' goals can be achieved by influencing the policy outcomes following civil war (Gent 2008). Such policies include the type of government or economic system of a target state and the state's management of access to resources by outside actors (Gent 2008). Fazal (2007) shows that since World War II, norms against conquest have changed the means that states use to exert control over other states. Instead of conquest and annexation, foreign powers attempt to replace leaders or alter a target state's political and economic systems so that they can expand influence on the state. Through intervention in civil wars in less powerful states, major powers can affect the domestic policies and authority structures of the states (Gent 2007).

A civil war can be a place for interveners to compete with each other to achieve strategic objectives. Major powers may intervene in civil war to increase their own interest or to counter the opposing interests of rivals (Findley and Teo 2006). For example, the US and the Soviet Union intervened on opposite sides in the Nicaraguan and Afghan civil wars, underscoring their ideological differences and rivalrous expansionary or deterrent strategies (Findley and Teo 2006). Gent (2007) argues that, even after the Cold War, major powers have made decisions on civil war intervention, based largely on political and strategic objectives rather than moral principles. Civil war intervention may be a result of strategic competition between major powers.

These previous studies show that strategic rather than benevolent objectives influence major powers' decisions on intervention. Potential interveners as rational actors evaluate the likely costs and benefits of intervention and decide whether to intervene (Regan 1998; Lemke and Regan 2004). While the material or human costs of intervention make major powers hesitant to intervene in civil war, the expected benefits encourage them to swiftly intervene. Anticipated benefits are the effects of the future behavior of the state in which intervention has occurred on the intervening state (Lemke and Regan 2004). Accordingly, interveners tend to go to states which are internally unstable but strategically important (Owen 2002), where they can expect the future benefits.

Close ties with civil war states that results from contiguity, alliances, and colonial history signal strategic importance to potential interveners. Lemke and Regan (2004, 153) show that neighbors, allies, and former colonial powers of a civil war state tend to try to exert influence on the civil war state, and will continue to do so in the future. Intervention can be a tool to prevent conflict spillover from contiguous states and to exert control over the states (Findley and Teo 2006). A military alliance with a civil war state indicates that a third-party has a critical strategic interest in the security of the state, and thus it is a likely intervener (Rost and Greig 2011). The former colonial powers want to maintain interests in their former colonies, and thus they are willing to aid their favored factions (Findley and Teo 2006). Such elements of strategic interests not only increase the likelihood of intervention but also are likely to decrease time to intervene (Findley and Teo 2006; Gent 2008).

Civil wars fought over ideological differences have provided attractive intervention opportunities for major powers (Findley and Teo 2006). The superpowers

intervened in ideological conflicts in Third World countries to support their partners or

remove opponents during the Cold War (Scott 1996). Examining the US intervention

between 1945 and 1989, Yoon (1997) finds that if one of the parties of a civil war is

communist, the US is more likely to intervene in the civil war. During and after the Cold

War, the grand strategy of the US has emphasized the diffusion of democracy and free

markets (Ikenberry 2000). Natural resources, like oil, provide another strategic interest

accounting for civil war intervention (Humphreys 2005). Ross (2004) found that natural

resources tend to encourage outside actors to intervene in civil war. Access to oil can be a

crucial objective that encourages major powers to rapidly undertake a military or

economic intervention.

These prior studies find that strategic interests can be important incentives for

civil war intervention. They suggest the factors - alliances, contiguity, former colony

status, ideological conflict, and access to natural resources - which influence intervention

decisions. The main reason why major powers bear the costs of intervention is that they

can expect the future benefits through the maintenance or expansion of influence.

However, other scholars show that strategic interests alone cannot explain intervention in

civil wars. Humanitarian concerns can be another important motive for intervention

decision.

Humanitarianism

In 1992, the US, under UN authorization, undertook a military intervention in the

Somalia civil war where there were few strategic interests. Prior to the November 1992

intervention, the Bush administration had objected to US military intervention in Somalia

because the conflict was not relevant to US vital interests (Western 2002). The important factor that changed the position of the administration was that 300,000 Somalis were killed by the summer of 1992 (Western 2002). In other words, humanitarian concerns were an important incentive for the US intervention in Somalia (Finnemore 2003).

International humanitarian norms have evolved over time. Until the early twentieth century, there were no widely perceived norms with regard to human rights, but by the mid-twentieth century, normative concern for the protection of human rights had become widespread (Finnemore 2003). International organizations (IOs) have reflected these normative changes, and have contributed to the spread of the norms (Finnemore and Sikkink 1998). The UN Charter has provided the normative framework related to human rights and established the Genocide Convention in 1948 (Finnemore 2003). Since the end of the Cold War, the UN and humanitarian organizations have increasingly emphasized that the international community has the obligation to protect people threatened by civil conflict (Barnett and Weiss 2008). The evolution of humanitarian norms and the rise of the UN as a socializing agent can explain that states can have common humanitarian concerns in relation to civil wars in other countries, and such normative considerations may be important motives for civil war intervention (Weiss 2001).

However, there have been limitations on humanitarian intervention. The UN Charter includes two conflicting principles. Article 2 preserves states' sovereign rights as the organizing principle of the international system, which means a rule of non-intervention, but Article 1 of the Charter emphasizes human rights and justice as a fundamental mission of the UN (Finnemore 2003). This contradiction in the Charter has often led the international community to hesitate to intervene in civil war. Therefore,

humanitarian intervention may occur only when the international community has the humanitarian cause that can justify intervention. Large scale human suffering is necessary for an international consensus for civil war intervention (Jakobsen 1996).

Scholars show how humanitarian concerns can lead states to intervene in civil war. First, Jakobsen (1996) shows that the CNN effect was a catalyst for UN intervention in Iraq, Rwanda, and Somalia. The images of the people suffering from war or famine, broadcast by television, lead to the public's moral outrage, and motivate the international community to reach a consensus for intervention. Second, political leaders and key staffs' own moral outrage over the humanitarian disaster can affect states' decision on intervention (Hirsch and Oakley 1995). Third, Western (2002) shows that UN intervention led by the US in Somalia may have been related to normative beliefs of liberal humanitarians who were foreign policy elites or members of human rights nongovernmental organizations. In other words, large scale human suffering stimulates the public or policy makers' humanitarian concerns, and in turn enables major powers to put priority on the humanitarian norms over the principle of non-intervention. Therefore, the occurrence of a humanitarian disaster in a civil war can encourage major powers to rapidly intervene in the civil war.

Past research shows that both strategic interests and humanitarianism can influence intervention decisions. When a civil war involves major powers' strategic interests, it can be an opportunity for major powers to expand international influence, and intervention decision will depend on the expected benefits. On the other hand, responding to humanitarian disasters, they are less likely to care about their own interests, and normative criteria can affect intervention decisions. The theories and findings of previous

studies imply that self-interest and humanitarian concerns can affect when and how major powers intervene in civil wars.

Timing and Methods of Intervention

I argue that strategic interests and humanitarianism will not only motivate major powers to intervene in civil war more quickly but also choose particular types of intervention. When strategic interests are at stake, major powers are likely to primarily take into account the benefits and costs of intervention rather than norms of intervention and thus they will choose intervention methods which can increase the expected benefits. On the other hand, humanitarian disasters caused by civil war are likely to motivate major powers to consider the goals and norms of humanitarian intervention which international communities have emphasized.

Strategic Interests and Intervention Decisions

Explanation of the relationship between strategic interests and the timing of intervention may be straightforward. When a civil war involves major powers' strategic interests, they can expect the future benefits that can offset the costs of intervention which is a factor in withholding intervention. The expected benefits can make them less hesitant to intervene in the civil war. Therefore, it is likely to take shorter time for major powers to intervene in a civil war that is strategically important.

Table 2.1 P5's Decision Making on Intervention Types in Civil Wars, 1944-1999

Types of Intervention			Number of Civil Wars
Multilateral vs. Unilateral	China	Multilateral	13
		Unilateral	4
	France	Multilateral	15
		Unilateral	14
	Russia	Multilateral	15
		Unilateral	18
	UK	Multilateral	15
		Unilateral	10
	US	Multilateral	16
		Unilateral	31
Neutral vs. Biased	China	Neutral	4
		Biased	13
	France	Neutral	6
		Biased	23
	Russia	Neutral	6
		Biased	27
	UK	Neutral	6
		Biased	19
	US	Neutral	6
		Biased	41
Int. without Use of Force vs. Use of Force	China	Int. without Use of Force	15
		Use of force	2
	France	Int. without Use of Force	24
		Use of Force	5
	Russia	Int. without Use of Force	25
		Use of Force	8
	UK	Int. without Use of Force	17
		Use of Force	8
	US	Int. without Use of Force	34
		Use of Force	13
Number of civil wars in which major powers intervened			69
Total number of civil wars (Conflicts in major powers are excluded.)			144

Note: Data are based on Regan (2002).

Strategic interests influence types of intervention as well as timing of intervention. They motivate major powers to undertake unilateral intervention without UN authorization. Fortna (2008) found that UN peacekeepers are less likely to go into civil war states which are former colonies of the P5 or contiguous to them. Gilligan and Stedman (2003) show that while a large number of deaths tend to stimulate the UN to intervene in civil war more swiftly, there are no significant relationships between UN intervention and primary commodity exports of target states. One interpretation of these findings is that UN peacekeepers are less likely to go to civil wars related to major powers' strategic interests and are more likely to be motivated by humanitarianism. Another interpretation is that when their interests are at stake, major powers are likely to undertake a unilateral intervention without the auspices of the UN. There may be two reasons that support this argument.

First, unlike humanitarian purpose which may be a common concern among major powers, when major powers pursue their strategic interests, it is difficult for them to get consent from the Security Council whose members are other major powers. While some major powers have critical interests in a civil war (e.g., maintenance of influence on former colonies or contiguous states), the others may have no or less interests. As the conventional wisdom about relative gains suggests, benefits to one major power produce relative loss to others, (Grieco 1988; Mearsheimer 1994/1995). Therefore, it may take longer time for the P5 to reach a consensus for UN intervention that is likely to contribute to particular powers' interests, or they may fail to do so.

Second, while multilateral intervention through the UN can reduce the financial and human costs of interveners, it can increase another cost of policy loss (Voeten 2001).

In order to achieve the UN authorization, major powers must compromise. At the time, they may have difficulty reaching their policy goals that will contribute to their future benefits. In other words, there is a tradeoff between unilateral and multilateral action. This tradeoff can explain why major powers are likely to undertake unilateral intervention in civil wars that are strategically important, rather than multilateral intervention. Accordingly, I will test the following hypothesis:

H_{S1}: *If a civil war is related to major powers' strategic interests, the major powers are likely to more rapidly undertake unilateral intervention.*

When there are strategic interests in a civil conflict, major powers as rational actors calculating costs and benefits of intervention will take into account which group in a civil war state is likely to serve their own interests. They are motivated to support the side, government or the opposition, which has close connections with them or are likely to contribute to their future interest (Findley and Teo 2006). When a group supported by an intervener wins a victory, the intervener can preserve or expand its influence on a target country. Therefore, the strategic interests among major powers lead them to engage in a civil war more quickly and choose a biased intervention rather than a neutral one. However, if there is no strategic interest, major powers are less likely to care about which side is likely to contribute to their interests, and thus they are less likely to undertake a biased intervention.

H$_{S2}$: If a civil war is related to major powers' strategic interests, the major powers are likely to more rapidly undertake biased intervention.

Major powers must decide whether to use military force in a civil war. If strategic interests are at stake, they are likely to more swiftly use military force. While the use of force may increase the costs of intervention and exacerbate a humanitarian crisis, major powers can expect that it can bring a decisive victory for the side that they support. Therefore, interveners may believe that the expected benefits of the use of force may offset the costs, and rapid use of force is necessary for their future benefits. In order to maintain or expand influence on a state or a region, the US and Russia (or the Soviet Union) have run the risks of the use of force in civil wars in other countries (Guelke 1974; Weisburd 1997). Besides the superpowers having exceptional power projection capability, the UK and France has often been willing to use armed force in civil wars involving strategic interests, like former colonial ties or resource abundance (e.g., in Iraq and Chad). When a civil war is not associated with major powers' strategic interests, they are less likely to bear the costs of the use of force.

H$_{S3}$: If a civil war is related to major powers' strategic interests, the major powers are likely to more rapidly use military force.

Humanitarianism and Intervention Decisions

Although all civil wars do not justify third-party intervention, humanitarian tragedies caused by civil war can justify urgent external intervention to alleviate human

hardship. The international community has emphasized that "the essence of humanitarian action is to save lives at risk (Barnett and Weiss 2008, 11)." The goal of humanitarianism, saving lives at risk, implies the necessity of urgent intervention to reduce or prevent human suffering. In other words, the occurrence of humanitarian disasters or increasing level of human hardship in civil war is likely to encourage major powers to quickly intervene in the civil war. The international community has also proposed the norms of intervention, such as multilateralism, neutrality, and impartiality. Such goals and norms of humanitarianism not only affect timing of intervention but also dictate very stylized types of intervention.

Finnemore (2003, 73) argues that "humanitarian intervention must be multilateral to be legitimate; without multilateralism, claims of humanitarian motivation and justification are suspect." Legitimacy of intervention is based on the shared principle among states that requires the Security Council authorization. Through UN authorization, interveners can demonstrate that their purpose is not merely self-serving but contributes to community interests that other states share (Finnemore 2003, 82). In doing so, interveners can enjoy international support. Therefore, multilateral norms can provide political benefits for conformity which flow not from the material features of the intervention but from shared norms among states (Finnemore 2003, 82).[7] Such a new interest from the shared norms affects states' decisions on intervention (Barnett and Finnemore 1999). As a result, a humanitarian disaster is likely to motivate major powers

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[7] One might argue that multilateral intervention is self-interested behavior to achieve international or domestic political support. However, this argument raises the question: "why is multilateralism necessary to generate political support? (Finnemore 2003, 82)." As argued earlier, multilateral intervention may be ineffective, compared to unilateral intervention because it can produce the costs of policy loss. States can adhere to multilateralism even when they perceive the costs (Finnemore 2003, 82). The reason is that multilateralism as the shared norms among states creates a new political interest or preference and has the power to influence states' behavior.

to quickly engage in multilateral intervention through UN rather than unilateral intervention.

Multilateral intervention can be a useful strategy even in terms of the material interest of the interveners. Facing a humanitarian tragedy, any state might be willing to contribute to the efforts to reduce human suffering, but few would take on the burden unilaterally (Regan 2000, 106), in particular when their national interests are not at stake. Multilateral intervention can encourage sharing of costs for which the fixed burden-sharing mechanism of the UN provides an institutional solution that reduces the risks of bargaining failures, decreases transaction costs, and alleviates the problem of free riders (Voeten 2005). The UN's stable organizational structures and supportive administrative apparatuses can increase the efficiency of collective security activities (Abbott and Snidal 1998). Hence, major powers may have motives to act through the UN. I propose the following hypothesis:

H_{H1}: *When a civil war causes a humanitarian disaster, major powers are likely to more rapidly engage in multilateral intervention.*

Responding to a humanitarian disaster, major powers may be indifferent between the sides in the civil war. The classical principles of humanitarianism include "neutrality (not taking sides with warring parties) and impartiality (nondiscrimination and proportionality)" (Weiss 1999, 1) which can influence the type and speed of intervention. The norms of neutrality and impartiality can bestow political benefits on conformist states, just as multilateral norms do so. If major powers join one side in a conflict, it is

hard for them to justify that they are guardians of community interests rather than self-seekers, and they should bear political costs, like the loss of international support. Therefore, the norms-based explanation predicts that major powers are likely to quickly engage in neutral intervention and delay in the use of military force on behalf of one party. Also, interveners are likely to refrain from using military force because the use of force, such as aerial bombing, can produce human costs including civilian casualties. Further death and destruction may defeat the humanitarian purpose that justifies intervention.

H_{H2Norm}: *When a civil war causes a humanitarian disaster, major powers are likely to more rapidly engage in neutral intervention.*

H_{H3Norm}: *When a civil war causes a humanitarian disaster, major powers are likely to more rapidly engage in intervention without use of force.*

However, there may be alternative arguments that humanitarian interveners should take one side and can use military force to punish perpetrators. Humanitarian intervention aims at saving lives at risk, and this goal can help justify biased intervention and the rapid use of force. Despite the existence of the classic norms of neutrality and impartiality, some scholars and practitioners have argued that those norms are not effective to reduce human suffering and remove the cause of conflict and they may even allow perpetrators to receive international aid (Weiss 1999; Barnett and Weiss 2008). They contend that in order to protect (potential) victims, humanitarians should take the side of victims and punish war criminals. This ends-based logic suggests that a

humanitarian crisis is likely to motivate major powers to swiftly undertake biased

intervention and the use of force.

H_{H2End}: When a civil war causes a humanitarian disaster, major powers are likely to more rapidly engage in biased intervention.

H_{H3End}: When a civil war causes a humanitarian disaster, major powers are likely to more rapidly use military force.

Research Design

For empirical analyses, I use Regan's (2002) dataset which provides information

about interveners and the types of intervention: whether the intervention was multilateral

or unilateral; whether interveners were neutral or biased; whether or not they fought

against a party using military force (see Table 2.1). Also, the data report the timing of

intervention. Therefore, the dataset can provide an opportunity to estimate the effects of

each independent variable on the timing and types of intervention.

I employ an event history model, the competing risks Cox model, which is

appropriate to test the hypotheses about the timing and types of intervention. The

conditions of civil war, such as the levels of human suffering, change over time, and the

likelihood of the occurrence of particular types of intervention can also change over the

course of a conflict. An event history model enables us to infer the influence of

independent variables on elapsed time until intervention as well as on the occurrence of

intervention (Box-Steffensmeier and Jones 2004).[8] Competing risks approach is effective

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[8] Findley and Teo (2006), Gent (2008), and Aydin (2010) also use event history models to explore the determinants of civil war intervention.

when one is interested in the occurrence (or nonoccurrence) of different types of events (Box-Steffensmeier and Jones 2004). Employing the competing risks Cox model, I can estimate how fast major powers respond to strategic interests or humanitarian disasters with particular types of intervention as well as whether particular types of intervention occur.

The unit of analysis is major power-civil war-year. The five major powers that are potential interveners are matched with each conflict for each year during civil war.[9] Using this unit of analysis, I analyze the response of each major power to the particular conditions of civil war states or the characteristics of civil wars and estimate the effects of independent variables on the timing and types of intervention. I assume that major powers' decisions on intervention types are made simultaneously, not sequentially, and thus there would not be selection problems. I analyze three models separately, comparing unilateral and multilateral intervention, biased and neutral intervention, and intervention with and without the use of force.

Dependent Variable

The dependent variable is the duration from the start of civil war to the occurrence of the first intervention by a major power. The duration until that intervention is measured in months. Although there may be multiple interventions by a major power in a civil war,[10] the type of the second or third intervention rarely differs from the type of the

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[9] China is not regarded as a major power until 1971 because it was not a permanent member of the Security Council.

[10] Regarding the analysis of multiple interventions, see Aydin (2010).

first.[11] Therefore, the dependent variable measures the time until the first intervention by each major power.

In the dataset, if intervention occurs in a given year, the observation is reported as "failure." If a civil war does not result in intervention, it is assumed to be under risk of failure until the civil war end or until it is right-censored by December 1999 (Aydin 2010). These observations contribute information to the risk set but contribute no information about duration to intervention (Box-Steffensmeier and Jones 2004).

Independent Variables

The presence of strategic interests is measured by alliances, former colony status, contiguity, ideology conflict, and oil output. These variables are conventional proxies for strategic interests, which many scholars have used (e.g., Lemke and Regan 2004; Fortna 2008). Alliance is a dichotomous variable that indicates whether there is a defense pact between a civil war state and a major power in a given year. The data for alliances are based on the Correlates of War (COW) dataset (Gibler and Sarkees 2004). Former colony status is also a dummy variable, denoting whether a civil war state was a former colony of a major power. I regard members of the former Soviet Union as its former colonies. To confirm former colonies of major powers, I use the Issue Correlates of War Colonial History dataset (Hensel 2006). The data on contiguity are obtained from the COW dataset

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[11] The major exception is for the use of force that sometimes follows intervention without the use of force. For example, the Soviet Union's intervention in Afghanistan began in April 1979 by deploying military advisors and equipment, but military clashes between the Soviet troops and Afghan rebels took place in February 1980 (Regan 2002). This type of case, where a major power undertakes more than one type of intervention in a civil war contradicts a competing risks framework that I utilize in this chapter. I address this problem in the following way. If the intervention develops into a use of force after it begins, I retroactively consider it a use of force from the first moment of the intervention. Intervention without use of force therefore denotes that there is no military clash between an intervener and a warring faction during the entire civil war. In this way, I distinctly operationalize the use of force and the intervention without use of force so that they can be treated as competing risks.

(Stinnett et al. 2002). If a major power has geographic contiguity with a civil war state by land or up to 150 miles of water, it is coded 1, otherwise 0. Data on ideological conflict are based on Regan's (2002) dataset. If a civil war was an ideological conflict, it is coded 1, otherwise 0. The oil output means a civil war state's output of crude petroleum in thousand metric tons in a given year.[12] The logarithm of the output is taken as the variable. The data for the amount of oil output are obtained from Mitchell (2007).

My hypotheses states that major powers respond to a humanitarian crisis as well as strategic interests. To explore the effects of a humanitarian disaster caused by a civil war, I employ the number of refugees and the occurrence of genocide (or politicide).[13] These variables have been used as proxies indicating a humanitarian emergency (e.g., Rost and Greig 2011). The data on the number of refugees are obtained from Moore and Shellman's (2004) dataset for forced migration. I take the logarithm of the number of refugees fleeing from a civil war state in a given year. Genocide is a dichotomous variable that indicates whether either of the contending authorities perpetrated mass murder against civilians (at least 300 deaths) in a given year. The data for genocide are taken from State Failure Task Force dataset (Marshall et al. 2009). Rost and Greig (2011) point out that using these variables, one needs to care about potential endogeneity. That is, it is necessary to ensure that the changes to the values of these variables do not take place simultaneously with intervention or subsequently to intervention (Box-Steffensmeier and Jones 2004). For this reason, I use one-year-lagged values of each of these two variables.

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[12] Previous studies, examining the effect of oil, mainly measure whether or not a state is an oil producer (Aydin 2010) or oil exporter (Fortna 2008). However, there are large differences in the amount of oil output among oil producers / exporters, and the output changes over time. Hence, I measure annual oil production of states to explore the influence of oil as a strategic interest.

[13] There is no strong correlation between refugee levels and genocide. Correlation between the two variables is 0.214, which means that the occurrence of genocide does not need to indicate the increase of the number of refugees, and vice versa.

Control Variables

Alternative factors might also influence the types and timing of intervention. Therefore, the factors are incorporated into my models. First, structural changes in the international system can affect the types of intervention. Voeten (2001) argues that asymmetric power among major powers allows a dominant power to easily negotiate multilateral compromises in its favor. Perhaps this is why, since the end of the Cold War, the Security Council has adopted a growing number of resolutions for civil war intervention. To control for the international systemic factor, I use a dichotomous variable, the Cold War, which is coded 1 in every year after 1989.

Second, I control for the capability gap between a potential intervener and a civil war state. Prior studies demonstrate that asymmetric capability between two states can be a significant factor that prompts intervention (Bull 1984; Findley and Teo 2006). The larger the capability gap, the more likely potential interveners are to quickly intervene in a target because they can expect easier goal achievement. The capability gap measures the ratio of a potential intervener's capability score to a civil war states' score in a given year. Data on the capabilities of states are obtained from the CINC (composite indicator of national capabilities) score of the COW dataset (Singer 1987).

Third, the level of institutionalization of regional IOs can influence major powers' intervention decision, and thus it should be included in my models. Previous studies find that highly institutionalized regional IOs can play a significant role in conflict resolution (Boehmer et al. 2004; Hansen et al. 2008). This finding implies that such regional IOs might substitute for the UN functioning as a conflict manager. Therefore, I can expect

that major powers are less likely to undertake multilateral intervention through UN in regions where there are highly institutionalized IOs. There are a great number of regional IOs, but all regional IOs are not likely to have significant influence on major powers' intervention decision. Pevehouse (2005) suggests a set of 55 regional IOs which are likely to influence states in terms of politics and economy. Out of the 55 IOs, I measure the level of institutionalization of IOs of which a civil war state is a member at a start year of civil war. To identify a civil war state's IO memberships in a given year, I use the COW Intergovernmental Organizations dataset (Pevehouse et al. 2004). The scores of institutionalization are coded on a three-point scale, according to Boehmer and his colleagues' (2004) criteria for classification of IOs' institutionalization. Out of the multiple IOs in which a civil war state is a member, I take the score of the most highly institutionalized IO as a value of the variable.

Fourth, the level of democracy of a civil war state can affect intervention decisions in that protection or change of the regime of a state may be a goal of third-party intervention (Aydin 2010). Therefore, I control for the level of democracy of a civil war state in a given year. The data on the level of democracy are based on democracy scores from the Polity IV dataset (Marshall et al. 2010). Finally, I control for country fixed effects because unobserved characteristics of major powers can affect intervention decisions. To do so, I use dummy variables for major powers, the US, UK, France, and Russia. China is the referent case.

Empirical Findings and Discussion

Tables 2.2-2.4 show the results of the competing risks Cox models of major

powers' intervention in civil wars.[14] In using the Cox models it is necessary to check

whether the models violate the proportional hazards assumption (Box-Steffensmeier and

Jones 2004). Diagnostic tests show that for the most part, the assumptions are not

violated, and thus no adjustments are necessary.[15]

The Cox models report estimated coefficients and hazard ratios regarding the

effects of each independent variable. If the hazard ratio is significantly larger than 1, this

implies that the hazard is increasing with changes in the independent variable.[16] If it is

significantly smaller than 1, it means the hazard is decreasing with changes in the

independent variable (Box-Steffensmeier and Jones 2004). Increasing rates of hazard

imply shorter waiting times until a major power intervenes and an increase in the risk of

intervention. In other words, they mean that a major power is likely to more quickly

intervene in a civil war. Decreasing rates of hazard imply longer response times and a

lower risk of intervention. The test results including hazard ratios show substantive

effects of independent variables as well as their statistical significance.

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[14] My models include time varying covariates, such as oil output, the number of refugees, genocide, democracy score, and capability ratio. The covariates' values may be serially dependent, which can cause biased estimation. I address this problem by using robust standard errors (Lin and Wei 1989).

[15] The only exception is the model of biased intervention. In this case, the global test results using Schoenfeld residuals were on the borderline of significance ($p = .0812$). As a precaution, I followed Box-Steffensmeier and Jones' (2004) advice and included an interaction term, Cold War * time. However, the results for the corrected model are virtually indistinguishable from those for the model without the interaction term, which are the ones I report here. (The model including the Cold War * time term yields a global p-value of 0.4381).

[16] The hazard refers to the risk that a major power intervenes in a civil war by a particular time given that it has not intervened in the war until that time (Box-Steffensmeier and Jones 2004).

Table 2.2 Competing Risks Cox Model of Major Powers' Intervention: Multilateral vs.

Unilateral

Variable	Multilateral intervention		Unilateral intervention	
	Coefficient	Haz. ratio	Coefficient	Haz. ratio
Strategic Interests				
Alliance	-34.932 (0.441)***	6.75e-16	0.803 (0.422)*	2.231
Former Colony	0.257 (0.438)	1.293	1.589 (0.405)***	4.897
Contiguity	-36.238 (0.439)***	1.83e-16	0.640 (0.669)	1.896
Ideological Conflict	-0.208 (0.291)	0.812	0.631 (0.226)***	1.880
Oil Output	0.094 (0.031)***	1.098	0.022 (0.033)	1.022
Humanitarian Disaster				
Refugees $_{t-1}$	0.077 (0.019)***	1.080	0.027 (0.026)	1.027
Genocide $_{t-1}$	0.858 (0.252)***	2.359	0.280 (0.310)	1.323
Control Variables				
Cold War	-1.698 (0.349)***	0.183	0.891 (0.355)**	2.439
Capability Gap	0.263 (0.118)**	1.301	0.407 (0.104)***	1.502
Regional IO	-0.887 (0.179)***	0.412	-0.120 (0.246)	0.887
Democracy	0.002 (0.020)	1.002	-0.014 (0.021)	0.986
US	0.057 (0.360)	1.059	1.493 (0.564)***	4.449
UK	0.252 (0.415)	1.286	0.565 (0.707)	1.759
France	0.371 (0.418)	1.449	1.204 (0.624)*	3.333
Russia	0.152 (0.366)	1.164	1.221 (0.551)**	3.392
Observations	4537		4537	
Log pseudo likelihood	-380.769		-409.981	

Note: *significant at 10%; **significant at 5%; ***significant at 1%. Robust standard errors are reported in parentheses.

The results from Table 2.2 generally support hypotheses H_{S1} and H_{H1}: strategic interests prompt major powers to rapidly undertake unilateral intervention, and humanitarian disasters associated civil wars encourage major powers to quickly engage in multilateral intervention. Whereas alliances with major powers have negative impacts on the hazard of multilateral intervention, they have significantly positive effects on unilateral intervention. The hazard ratio shows when a major power is allied with a civil war country, its risk of unilateral intervention increases by 123.1%, in comparison with a scenario in which the major power and civil war state are not allied. Former colony status has a significant and positive impact on the risk of unilateral intervention. If a major power is a former colonizer of a civil war state, the major power is quicker to undertake a unilateral intervention. For example, France has undertaken unilateral intervention without waiting for UN authorization in its former colonies in Africa and Indochina, such as Chad, Mauritania, Mali, Laos, and Vietnam. If a conflict is an ideological conflict, the potential intervener's risk of unilateral intervention increases by 88%. While contiguity has a negative effect on multilateral intervention, it does not have a statistically significant impact on unilateral intervention.

The effects of oil output do not support H_{S1}. Oil output has a significant and positive impact on the hazard of multilateral intervention, but it has no significant impact on unilateral intervention. If a civil war occurs in an oil abundant country, major powers are likely to engage in multilateral intervention more swiftly. In other words, the P5 members tend to easily build a consensus for multilateral intervention in oil abundant countries. The finding implies that the needs for access to oil and a stable supply in the global oil market are broadly shared and thereby facilitate compromise among major

powers. While Fortna (2008) contends that UN peacekeeping is not driven by major powers' greed, Gibbs (1997) argues that it is doubtful that policy makers in the major powers disregard economic and strategic interests such as access to natural resources when they decide on UN intervention. My finding suggests a more nuanced conclusion: UN intervention can be driven by major powers' greed, but the greed may be mutual.

Humanitarian disasters, as measured by the number of refugees or the occurrence of genocide, have significant and positive effects on the hazard of multilateral intervention, but it has no significant impact on unilateral intervention. A P5 member's chance of multilateral intervention increases more than twice, as the number of refugees changes from one standard deviation below the mean to one standard deviation above the mean (Figure 2.1). The chance also increases by 135.9%, when genocide occurs. Therefore, it can be said that a humanitarian disaster motivates major powers to more quickly intervene in the civil war and choose a multilateral intervention rather than unilateral intervention.

The estimated hazard functions for unilateral and for multilateral intervention (Figure 2.1) clearly show that conditions of civil war (states) relating to potential interveners' strategic and humanitarian motives are likely to produce differences in their intervention policy, in particular in the early period of war. The effects of variables on the hazards of unilateral intervention are more distinctive than on those of multilateral intervention. Colonial history has a remarkable effect on the hazards of unilateral intervention.

Figure 2.1 Estimated Hazards of Unilateral / Multilateral Intervention

Note: For oil output, one standard deviation below the mean is less than 0.
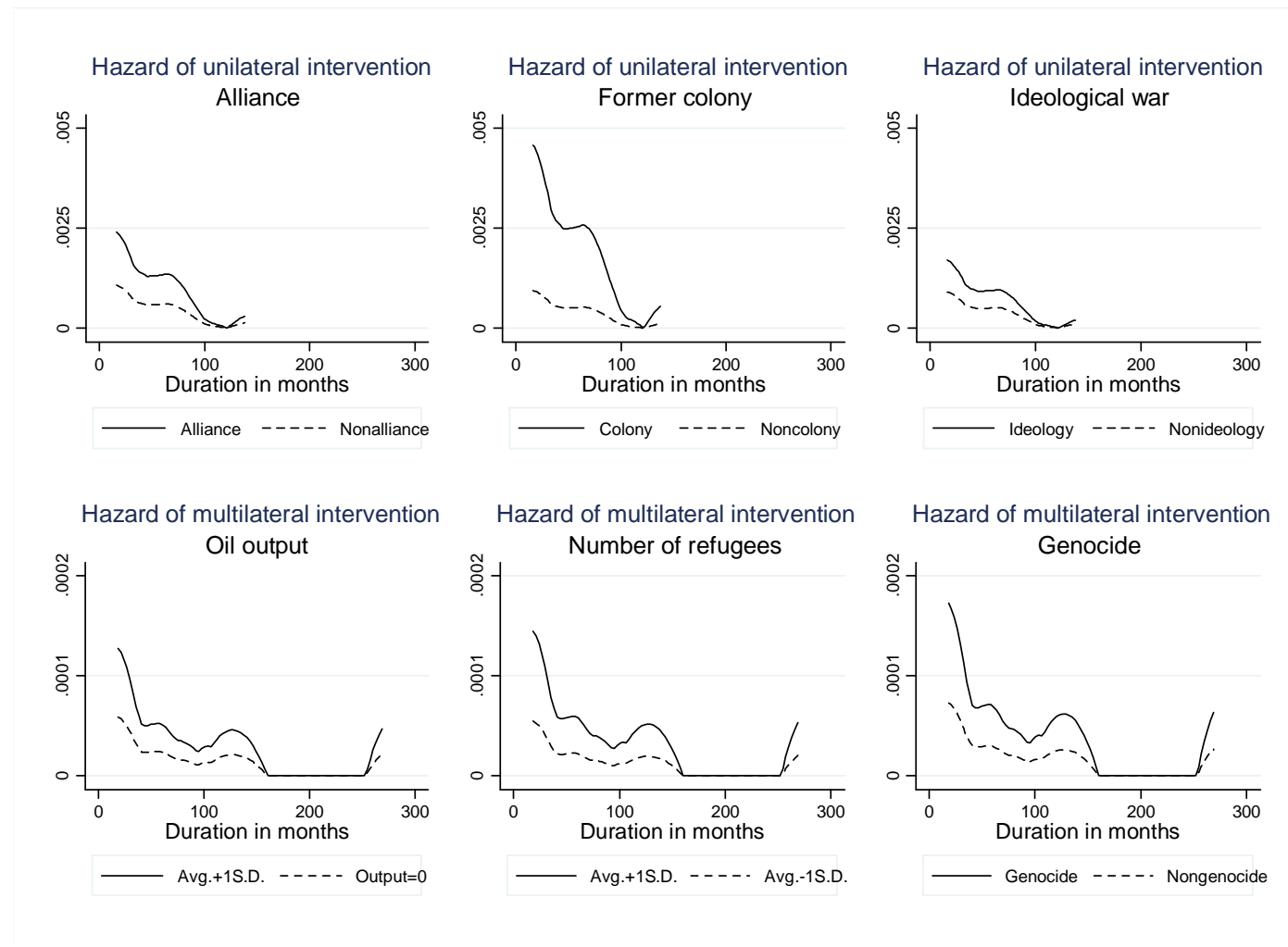
Figure 2.1 also shows interesting patterns of civil war intervention over time. First, the hazards of intervention are highest in initial periods and tend to decrease over time. This pattern confirms previous studies' findings that third parties become less interested in a civil war over time (Findley and Teo 2006; Aydin 2010). Second, while the hazards of unilateral intervention approach 0 at around 120th months, those of multilateral intervention reach the second peak at that point of time. Third, the hazards of multilateral intervention become 0 at around 150th months, but re-rise at around 250th months. These patterns imply that major powers may wait longer for multilateral intervention than for unilateral intervention.

These findings show that when a civil war involves a particular major power's strategic interest, the major power is likely to respond to the civil war more quickly through unilateral intervention rather than multilateral intervention. In doing so, major powers can maintain or expand their influence on a civil war state. Also, they are likely to do so because conflicting interests among them make it difficult to agree on multilateral intervention. The positive impact of oil output on multilateral intervention can be evidence of mutual greed of major powers. Even UN-authorized intervention may not be independent from major powers' self-interest. The UN mechanism can be employed for major powers to reduce their costs of stable access to resources. When a civil war causes a humanitarian disaster, major powers are more likely to undertake a multilateral intervention than unilateral intervention. This means that multilateralism as a norm of intervention significantly affects major powers' intervention decision, and a humanitarian tragedy allows the P5 members to relatively easily reach a consensus for multilateral intervention.

Table 2.3 Competing Risks Cox Model of Major Powers' Intervention: Neutral vs.

Biased

Variable	Neutral intervention		Biased intervention	
	Coefficient	Haz. ratio	Coefficient	Haz. ratio
Strategic Interests				
Alliance	-42.374 (0.607)***	3.96e-19	1.503 (0.372)***	4.494
Former Colony	0.458 (0.736)	1.581	1.080 (0.310)***	2.944
Contiguity	-43.097 (0.641)***	1.92e-19	-0.053 (0.480)	0.948
Ideological Conflict	-0.567 (0.402)	0.567	0.407 (0.196)**	1.502
Oil Output	0.160 (0.059)***	1.174	0.050 (0.025)**	1.052
Humanitarian Disaster				
Refugees $_{t-1}$	0.040 (0.031)	1.041	0.074 (0.018)***	1.077
Genocide $_{t-1}$	0.325 (0.420)	1.384	0.503 (0.228)**	1.654
Control Variables				
Cold War	-1.574 (0.494)***	0.207	-0.363 (0.241)	0.695
Capability Gap	0.467 (0.182)***	1.595	0.313 (0.084)***	1.368
Regional IO	-0.121 (0.243)	0.886	-0.744 (0.175)***	0.475
Democracy	0.037 (0.029)	1.037	-0.010 (0.016)	0.990
US	0.221 (0.628)	1.248	0.750 (0.343)**	2.118
UK	0.824 (0.700)	2.279	0.193 (0.436)	1.213
France	1.047 (0.720)	2.849	0.628 (0.398)	1.874
Russia	0.522 (0.625)	1.686	0.626 (0.336)*	1.871
Observations	4537		4537	
Log pseudo likelihood	-157.100		-673.035	

Note: *significant at 10%; **significant at 5%; ***significant at 1%. Robust standard errors are reported in parentheses.

Table 2.3 reports how strategic interests and humanitarianism influence major powers' decisions on neutral and biased interventions. With the exception of contiguity, strategic interests are likely to significantly increase the risk of biased intervention. An alliance with a civil war state tends to increase a major power's risk of biased intervention and decrease its risk of neutral intervention. Former colony status and ideological conflict also have statistically significant and positive effects on the hazard of biased intervention. If a civil war country is a former colony of a major power, the risk that the major power engages in biased intervention increases by 194.4%, compared to when there is no colonial history between the major power and civil war state. When a civil war is characterized by ideological contestation, the hazard of biased intervention by a major power rises about 50%. Contiguity's contribution is to delay neutral intervention and make it less likely, although it has no significant effect on the hazard of biased intervention.

Those results exhibit that the vast majority of strategic interests are likely to motivate major powers to quickly undertake biased intervention and make them hesitant to engage in neutral intervention, thereby upholding H_{S2}. Major powers are likely to do so in order to support the group which has been closely connected to them through former colonial history or alliances, or is likely to accept their ideology. In doing so, they can expect that their future interests will increase.

Oil output produces somewhat unexpected results again. As a civil war state's oil production increases, a major power's risk of intervention with either a neutral or biased stance also increases. In other words, major powers are likely to intervene in oil abundant civil war states more quickly whether they have neutral or biased position. One possible

reason may be that while oil output provides a strong motive of intervention, it does not imply pre-existing social or political connections between a potential intervener and a group in conflict, and thus it might not be clear which group will be more beneficial to the intervener's future interest.

Humanitarian concerns also significantly influence whether P5 interventions are neutral or biased. As civil war violence turns to genocide and displaces a large number of refugees, major powers are likely to more quickly intervene in a biased manner. This finding supports H_{H2}: the ends-based hypothesis of humanitarian intervention. When individuals' physical well-being and lives are seriously threatened by civil war, major powers tend to distinguish aggressors from victims and rapidly intervene to support the victims. On the other hand, neither the occurrence of genocide nor the number of refugees has a statistically significant effect on the hazard of neutral intervention. Therefore, H_{H2} - the norm-based hypothesis - is not supported. Humanitarian concerns are a better predictor of biased intervention than of neutral intervention. Even though neutrality may be a traditional norm of humanitarian intervention, it does not have enough sway to compel major powers to consistently choose unbiased intervention. Humanitarian interveners instead protect (potential) victims and punish perpetrators in a civil war. This tendency may be a product of the uncertainty over the effectiveness of neutral intervention.

Figure 2.2 Estimated Hazards of Biased / Neutral Intervention
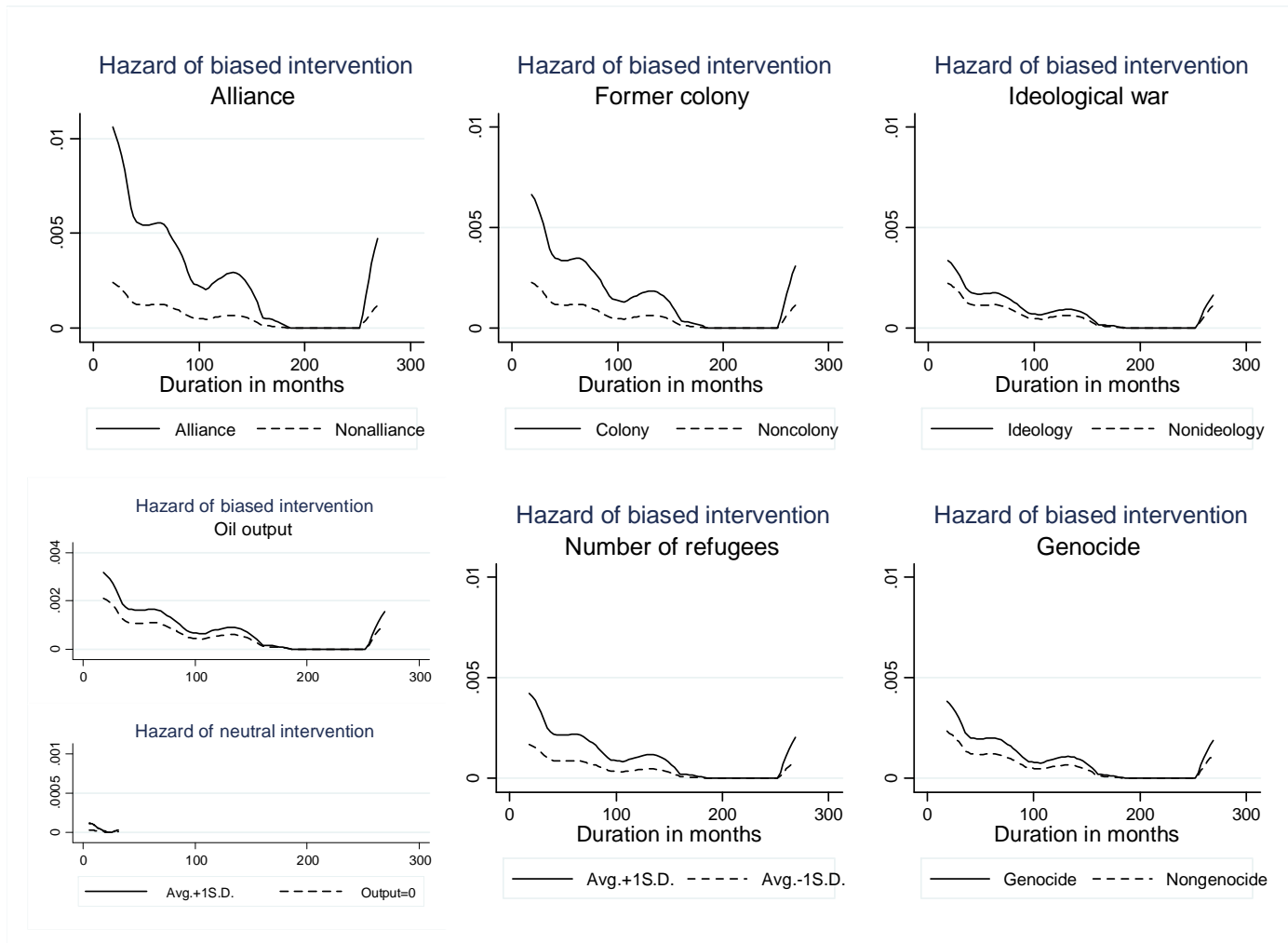
Figure 2.2 depicts that major powers' chances of neutral or biased intervention change over time. We again see a downward trend: as a civil war progresses the risk of outside intervention tends to decline. The figure displays an important difference between neutral and biased intervention. While hazards of neutral intervention rapidly decrease over time and approach to 0 at around two years after civil war onset, those of biased intervention tend to last longer.[17] One interpretation of this pattern may be that as a civil war progresses, distinction between perpetrator and victims may become clear, and thus major powers can have more opportunities for biased intervention relative to neutral intervention.

Table 2.4 reports the effects of strategic interests and humanitarianism on major powers' use of military force. Out of five strategic interests variables, only two are significantly and positively associated with the use of force, thereby in part supporting H_{S3} that specifies the positive relationships between major powers' strategic interests and their use of force. Contiguity has a strong effect on the use of force. Major powers are far less likely to hesitate to use military force in civil war states contiguous to them. For example, Russia has intervened in the Georgian civil war using military force since 1992 by supporting the opposition, South Ossetia. Contiguity can provide major powers with a strong motive for the use of force because they need to ensure their own security as well as regional influence. In addition, it can reduce the costs of deployment of military troops and equipment. Alliances have positive impacts on intervention, regardless of whether or

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[17] The hazard function of neutral intervention is displayed only for oil output because the other significant variables, alliance and contiguity, have infinitesimally small hazard ratios. This happens because there is no case in which alliance or contiguity is associated with neutral intervention. Similarly, in the dataset, multilateral intervention does not occur in civil war states that are allied or contiguous with a major power. This is why I also did not display the hazard functions of multilateral intervention for alliance and contiguity in Figure 2.1.

not force is used, but the hazard ratio of the use of force is higher than that of intervention without use of force. Whereas an alliance increases the risk of intervening with military force by 779.3%, it increases the risk of intervention without use of force by 203.3%.

Table 2.4 Competing Risks Cox Model of Major Powers' Intervention: Intervention without Use of Force vs. Use of Force

Variable	Int. without use of force		Use of force	
	Coefficient	Haz. Ratio	Coefficient	Haz. Ratio
Strategic Interests				
Alliance	1.109 (0.371)***	3.033	2.174 (0.758)***	8.793
Former Colony	1.202 (0.311)***	3.325	0.276 (0.589)	1.318
Contiguity	-1.280 (0.746)*	0.278	1.269 (0.648)**	3.557
Ideological Conflict	0.414 (0.201)**	1.513	-0.244 (0.347)	0.783
Oil Output	0.059 (0.025)**	1.061	0.078 (0.049)	1.081
Humanitarian Disaster				
Refugees $_{t-1}$	0.065 (0.018)***	1.067	0.047 (0.033)	1.049
Genocide $_{t-1}$	0.389 (0.228)*	1.475	1.023 (0.417)**	2.782
Control Variables				
Cold War	-0.574 (0.243)**	0.563	-0.893 (0.405)**	0.409
Capability Gap	0.292 (0.084)***	1.340	0.455 (0.143)***	1.577
Regional IO	-0.630 (0.156)***	0.532	-0.691 (0.397)*	0.501
Democracy	-0.003 (0.016)	0.997	-0.026 (0.036)	0.974
US	0.434 (0.319)	1.543	1.529 (0.862)*	4.614
UK	-0.256 (0.412)	0.774	2.120 (0.907)**	8.327
France	0.398 (0.372)	1.489	1.724 (0.897)*	5.608
Russia	0.364 (0.319)	1.439	1.455 (0.809)*	4.285
Observations	4537		4537	
Log pseudo likelihood	-643.374		-195.313	

Note: *significant at 10%; **significant at 5%; ***significant at 1%. Robust standard errors are reported in parentheses.

Three measures of strategic interests - former colony status, ideological conflict, and oil output - are significantly associated with intervention without use of force rather than the use of force, which is contrary to my expectation. One can speculate on the reasons for the unexpected results. First, civil war states allied with major powers or former colonies of major powers may have historic or cultural connections with the major powers. The use of force resulting in military clashes can produce hostility against interveners, and thus may hurt the connections between the major powers and the civil war states. Therefore, alliances or colonial histories may necessitate more cautions in the use of force. Second, the use of force is a very costly option for which major powers must bear their own costs, human as well as financial. Therefore, even when they pursue strategic interests, such as access to oil and diffusion of ideology, major powers might hesitate to use military force and prefer intervention without the use of force. As a result, the findings show that major powers more prudently use force than I had predicted.

Both the number of refugees and the occurrence of genocide have positive effects on the hazard of intervention without use of force, and only the occurrence of genocide has significant and positive impacts on the use of force. Therefore, it can be said that humanitarian disasters generally spur the use of non-violent interventions, but extreme disasters, such as genocide, prompt the P5 to resort to intervention by force. These findings support a norms-based hypothesis, H_{H3Norm}, which emphasizes nonviolent intervention. However, they also indicate that under the most extreme conditions, H_{H3End} (an ends-based hypothesis) is also supported. When civil wars brutally target entire races of people, peaceful norms can be set aside to prevent further slaughter.

Figure 2.3 Estimated Hazards of the Use of Force / Intervention without Use of Force
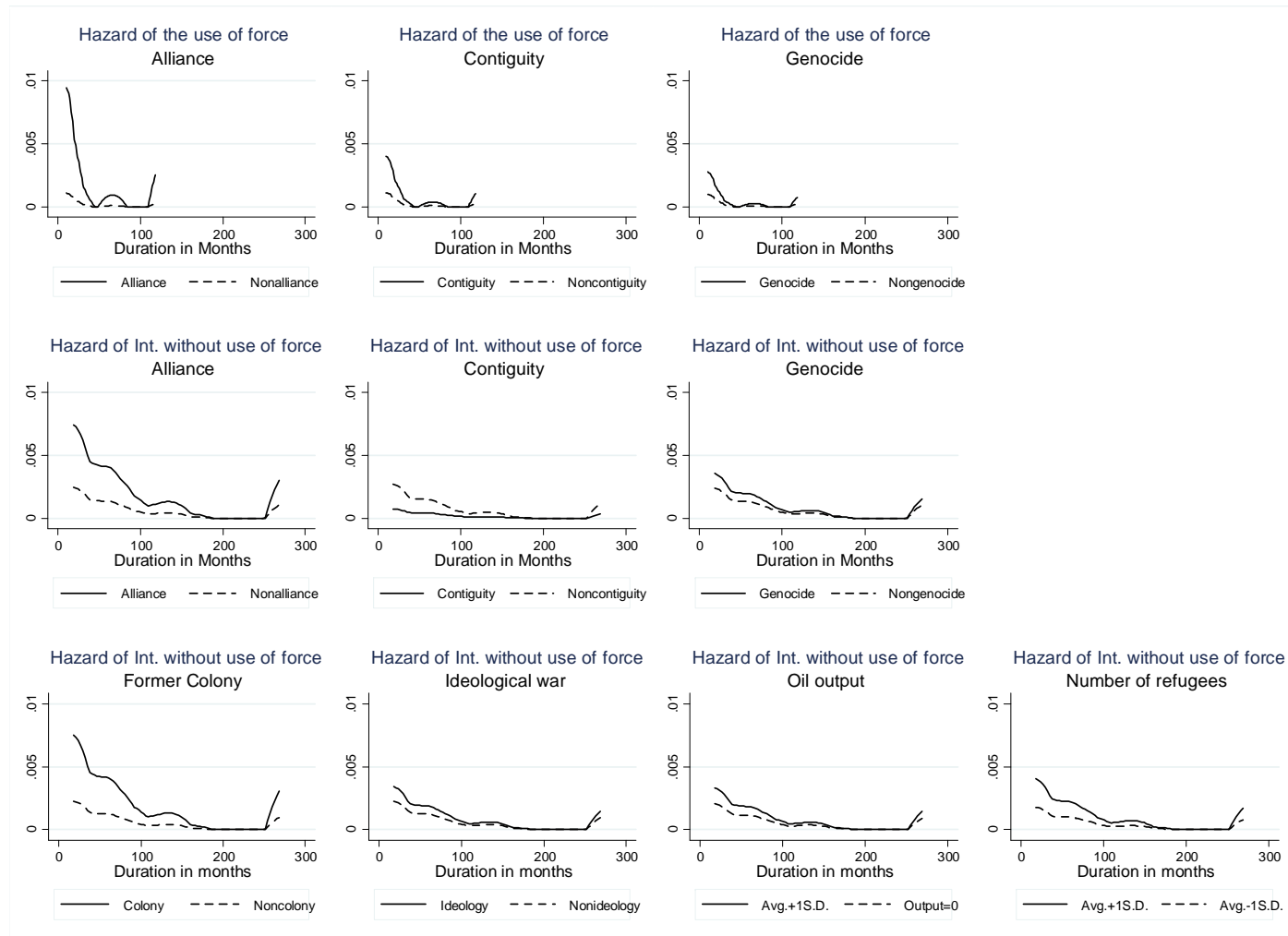
Figure 2.3 shows an interesting pattern about major powers' use of force. Major powers' chances to use military force rapidly decrease and reach 0 at around 45 months after the onset of civil war, although they slightly re-rise after the 100th month. On the other hand, the hazards of intervention without use of force gradually decrease over time, reach 0 at around 170 months, and slightly reascend after the 250th month. This pattern implies that major powers can wait much longer for intervention without use of force than for the use of force.

The test results show that besides strategic interests and humanitarian incentives, other factors can affect major powers' decisions on the types of intervention. The capability ratio of a major power to a civil war state tends to increase the hazards of all types of intervention. This finding confirms that asymmetric power relationship is a strong factor prompting intervention. The level of institutionalization of regional IOs decreases the risks of all types of intervention except unilateral intervention and neutral intervention. A notable finding regarding regional IO institutionalization is its negative impact on the hazards of multilateral intervention, which suggests that highly institutionalized regional IOs may substitute for the UN's conflict management role. The Cold War is more likely to be associated with unilateral intervention than multilateral one. This means that changes of power distribution among major powers influence manners of civil war intervention. As to country fixed effects, the US, France, and Russia are less likely than China to hesitate to undertake unilateral intervention. Out of the five powers, China is most likely to hesitate to use military force in civil wars in other countries.

Conclusion

This chapter has examined the factors that influence major powers' decisions on the types and timing of intervention in civil wars. I found that major powers' two contrasting incentives, strategic interests and humanitarianism, can significantly affect the types and timing of intervention. When strategic interests are at stake, major powers are more likely to take into account the expected benefits and costs of intervention than the international norms governing intervention, and such considerations tend to encourage them to rapidly engage in unilateral and biased intervention. In contrast, oil output of civil war states reduces time for major powers to reach a consensus for multilateral intervention, which implies that UN intervention can be driven by mutual greed of major powers.

When major powers are motivated by humanitarian concerns, they consider the norms and goals of intervention. By opting for multilateral intervention through the UN, major powers can claim humanitarian motivation. Even though neutrality has been a classic norm of humanitarian intervention, human suffering caused by civil war encourages major powers to quickly engage in biased intervention for the purpose of saving lives at risk. Responding to humanitarian disasters, major powers are likely to decide not to use military force because it can cause additional human costs, but severe disasters like genocide are likely to prompt them to use armed force to punish perpetrators and to save victims.

I have sought to extend the extant literature on the determinants of civil war intervention by identifying conditions influencing the timing and types of major power intervention. My findings show that interveners' motives can dictate the methods of

intervention as well as its timing. Understanding underlying reasons for the methods of intervention can help explain the consequences of third-party intervention. Intervention strategies do not only reflect interveners' motives and goals but also have their own functioning mechanisms. Therefore, they can imply how outside interveners influence civil war processes and post-war development. This chapter's findings will help infer what type of intervention will be more beneficial or harmful to citizens in target states, which will be explored by the following chapters.

CHAPTER 3

INTERVENTION AND CIVIL WAR OUTCOMES I:

A DYNAMIC MODEL

In spite of the international norms of state sovereignty, the vast majority of civil conflicts have experienced third-party intervention, as described in Chapter 1. In civil war involving third parties, its outcome is not only determined by the competition between domestic groups, the government and the opposition. Third parties can influence the growth and decay of the two competing groups in the course of conflict. In doing so, they can make civil war longer or shorter and affect how civil war ends: a military victory or a negotiated settlement.

Intuitively, intervention supporting either a government or a rebel group is likely to increase the prospect for the victory of the supported side and shorten war duration because it is likely to alter balance of power in favor of the supported side. Prior studies' empirical findings, however, have not necessarily upheld such an intuition. For example, Balch-Lindsay and Enterline (2000) and Regan (2002) show that third-party interveners are likely to prolong civil war. As civil war last longer, external intervention increases the likelihood of a negotiated settlement rather than a military victory (Mason et al. 1999). The literature implies that the effects of intervention on the relative capabilities of two conflicting groups might be counterintuitive.

This chapter seeks to expand understanding of the consequences of civil war intervention by investigating how third parties influence the power distribution between two competing groups and thereby changing the duration and outcome of civil war. To do

so, I view civil war and outside intervention from the bottom-up with a standpoint of warring parties, their domestic supporters and citizens, without losing lessons from top-down approaches which focus on interveners' goals and target selection. This bottom-up view helps understand how two groups interact with each other in the absence of interveners and how they and their domestic patrons respond to external intervention (Pouligny 2006; Driscoll 2012).

In the absence of external interveners, a civil war runs its natural course (Luttwak 1999; Weinstein 2005). The government and the opposition compete for controlling or seizing central authority. War ends, as one group becomes dominant over the other. Outside intervention changes such a baseline process, and is likely to produce unintended consequences. While biased interveners go into relatively tougher cases in which the capability gap between two groups is narrower (Gent 2008), they provoke nationalist resistance and make their protégé unaccountable to citizens, providing the other group with a chance to grow. This backlash, along with interveners' selection of harder cases, explains that biased intervention is likely to reduce the capability gap between two groups or at best have no significant impacts on the gap, compared to nonintervention. Thus, biased interveners are likely to fail to contribute to a fast victory for their protégé. On the other hand, neutral interveners are likely to widen the capability gap between two groups and increase the risk of a military victory by one side regardless of their intention because while they make an effort to manage the balance of power to help combatants reach a negotiated settlement, a group having competitive advantages can increase its relative capability.

I reach these conclusions by developing a dynamic formal model which captures interactions among two conflicting groups and a third-party intervener. The three main actors' capabilities and behavior change over time, influencing each other. The formal model using a differential equations system can effectively represent such dynamics and predict how each domestic belligerent group grows and decays during civil war in the absence or presence of a foreign intervener. I will build the dynamic model upon a competitive hunters model that is developed to explain population dynamics of competing species in biology. This competitive hunters model matches well with the characteristics of interactions between two conflicting groups, which are illuminated by a bottom-up approach, and can be expanded to incorporate a third-party intervener equation.

The changing capability gap during civil war makes differences in the duration and outcome of civil war. (Mason et al. 1999; Elbadawi and Sambanis 2000; Fearon 2004; Gent 2008; Cunningham et al. 2009). Civil war duration and outcome are two crucial elements that can increase or decrease human suffering during and after civil war. The longer civil war, the more hardship. Civil war outcome influences post-conflict stability. Many studies show that a decisive victory by a group tends to stabilize post-conflict society and reduce the likelihood of recurring war (Wagner 1993; Licklider 1995; Fortna 2004; Toft 2010). This study, by exploring the effects of external intervention on internal capability gap and war duration and outcome, provides meaningful implications about the costs of civil war and intervention.

In the sections following, first, I briefly review the literature on civil war duration and outcome, noting that conflict process is a function of the relative capabilities of combatants. Second, I will introduce a baseline model, a competitive hunters model, to

represent civil war process without outside intervention. Third, upon the baseline, I will construct a dynamic model of civil war involving a government-biased, rebel-biased, or neutral intervener. Finally, I find equilibria in each model, simulate representative movements toward the equilibria, and propose testable hypotheses.

The Distribution of Power and Civil War Process

Civil war termination depends mainly on the balance of power between the government and the opposition (Elbadawi and Sambanis 2000). During civil war each group tries to recruit soldiers and mobilize resources to fight and win a war (Gates 2002; Weinstein 2007). State-level factors, such as rough terrain, lootable resources, ethnic heterogeneity, and income level, make differences in civil war duration by influencing the relative powers of a government and a rebel group (Collier et al. 2004; Buhaug et al. 2009). Therefore, like interstate conflicts, civil war processes need to be examined with an emphasis on the capability gap between two groups (Cunningham et al. 2009).

The primary effect of third-party intervention is to manage or shift the balance of power between two conflicting groups (Gent 2008). Interveners can expect that their support will contribute to their protégé's quick victory by enhancing its relative capability, unless they engage in a civil war with a neutral position. However, existing empirical analyses show that external intervention tends to make civil war longer (Elbadawi and Sambanis 2000; Balch-Lindsay and Enterline 2000; Regan 2002; Cunningham 2010). The goals and methods of intervention help understand this consequence. Biased interveners have more interests in war outcomes than fast conflict resolution in order to achieve their goals (Gent 2008) which include transformation of post-war political or

economic systems, access to natural resources, and punishment of perpetrators. They can bear the costs of prolonged war for their protégé's victory (Cunningham 2010). Regan and Aydin (2006) show that while diplomatic intervention focusing on peaceful conflict resolution through cooperation is likely to make conflict shorter, military or economic assistance to a group tends to prolong civil war by reducing belligerents' motives to negotiate and encouraging to continue fighting.

Regarding civil war outcome, Balch-Lindsay and his colleagues (2008) find that biased intervention increases the likelihood of a negotiated settlement as well as a victory for the supported side.[18] Gent (2008) shows that while government-biased intervention is unlikely to have significant effects on civil war termination types and duration, rebel-biased intervention is likely to decrease time until a rebel victory or a negotiated settlement. Despite mixed findings, these prior studies show that civil war outcome might be different from interveners' expectation, their protégé's swift victory. Strategic target selection by interveners can explain this consequence. Gent (2008) demonstrates that biased interveners tend to go to civil wars where a rebel group significantly threatens a government. They do so because intervention may be more efficient by producing greater marginal impacts on war outcome when neither group has overwhelming capability (Gent 2008). In other words, interveners can encounter difficult situations because they choose tougher cases. This logic of target selection implies that there may be reciprocal causation between the capability gap between two conflicting groups and biased intervention, meaning that the capability gap influences biased intervention, and vice versa.

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[18] Balch-Lindsay and his colleagues' (2008) study is based on the data for civil war from 1816 to 1997. I replicated their test for the period of 1944 to 1997. The test results show interesting findings that government-biased intervention increases elapsed time to government victory as well as rebel victory, and rebel-biased intervention decreases time until rebel victory or a negotiated settlement.

From the previous studies, I learn the following. First, by focusing on the relationships between external intervention and the internal capability gap between combatants, we can gain better understanding of civil war duration and outcome. Second, the effects of intervention may vary with its methods which reflect interveners' goals. Third, intervention may be endogenous to the relative capabilities of two groups, and thus researchers need to care about target selection by interveners. Considering those lessons from the past research, I will provide an alternative explanation about the effects of biased or neutral intervention. While prior studies commonly assume that either government- or rebel-biased intervention increases only the supported side's capability, I argue that it can trigger backlash and give a chance for the unsupported side to augment its strength as well as for the supported side. A dynamic model, which allows me to capture reciprocal causation between external intervention and the internal capability gap, will produce testable hypotheses. To begin with, I present a baseline model of civil war.

A Baseline Model of Civil War: A Competitive

Hunters Model

Dynamic models using differential equation systems (e.g., Richardson's (1960) arms race model), like game theoretic models, have been used as important formal modeling tools to analyze or explain conflict process (Simon 1994). In particular, ecological population models that are developed in biology are effective to capture the interaction among multiple groups in an environment and represent their growth and decay over time. Therefore, they can be ideal tools to examine the evolutionary process of intrastate conflict (e.g., Simon 1994; Kadera et al. 2004; Garrison 2008). To represent relationships between two conflicting groups, one can consider two different population

dynamics systems: a predator-prey model and a competitive hunters model, both of

which are developed by Lotka and Volterra. A predator-prey model assumes that like the

relationship between foxes and rabbits, one of two species serves as food for the other.

On the other hand, a competitive hunters model assumes that two species have a common

prey or food source, and the two predators are in competition with each other (Olinick

1978, 84-108).

Although a predator-prey model has been widely used to analyze civil war

processes (e.g., Intriligator and Brito 1988; Francisco 1996),[19] I propose that a

competitive hunters model can provide more generalizable explanations for the

relationships between two groups in civil conflict. From a viewpoint of warring parties

and their domestic patrons, civil war would be a struggle for the (re-)formation of

centralized authority in a territory or the separation of the authority.[20] In a civil war in

which two domestic groups compete with each other to control or seize central authority,

which group is predator or prey is often unclear. Rather, it is more meaningful to view

both of them as predators that seek a common prey, resources from citizens (Thies 2010).

Extraction is a crucial activity for both groups during war. When a group effectively

mobilizes human and material resources from civilians, the group can increase its

capability to fight and win a war (Gates 2002). To do so, each group needs to seek

political support from citizens (Weinstein 2007). These characteristics of competition in a

civil war are closer to the assumptions suggested by a competitive hunters model than by

[19] Intriligator and Brito (1988) analyze guerrilla warfare by building a dynamic model upon a predator-prey model. Francisco (1996) explains the relationships between governmental coercion and rebel groups' protest in Northern Ireland employing modified forms of a predator-prey model.

[20] Walter's (2002) dataset reports that out of 72 civil wars between 1940 and 1992, the goals of 45 civil wars (62.5%) were entire control or overthrow of the government, and 20 conflicts (27.8%) were secessionist wars. In other words, typical goals of civil war are to control, overthrow, or separate a government.

a predator-prey model. Therefore, I employ a competitive hunters model as a baseline model of civil war.

The baseline model represents the growth and decay of two competing groups in the absence of outside intervention. The model's equations system has two key variables: a government's capability at a given time $(G(t))$ and a rebel group's capability at a given time $(R(t))$. The model assumes that in the absence of the other group, a group's capability naturally increases, but the competition between them weakens each group's capability. It is also assumed that there are sufficient prey (i.e., resources from citizens) for the two predators' survival and growth in a territory, although the equations of the model do not include the terms for the prey (Olinick 1978, 84). One needs to consider carrying capacity which means a maximum level of each group's capability. If carrying capacity is not considered, it can make an unreasonable assumption that a group's capability infinitely increases (Berryman 1992). Hence, the equations include carrying capacities for each group, k_g and k_r. As a result, the equations for civil war without intervention are expressed as follows:

A baseline model of civil war: A competitive hunters model

$$\frac{dG}{dt} = a\left(1 - \frac{G}{k_g}\right)G - bGR \qquad [1]$$

$$\frac{dR}{dt} = c\left(1 - \frac{R}{k_r}\right)R - eGR \qquad [2]$$

where a, b, c, and e are positive parameters, and k_g and k_r are also positive.

The first terms including carrying capacity mean natural increase of each group's capability in the absence of competition. The second terms refer to decay due to the competition between two groups. The model effectively account for the growth and

decay of two groups during civil war without outside intervention. If no competition, each group will experience natural growth collecting resources from citizens. How much and fast a group can mobilize resources and enhance its capability depends on its own characteristics which is represented by the parameters, a or c: a group's intrinsic rate of growth (Parrish and Saila 1970). For example, a group that protects and serves citizens well and gains large political support from them may have a high natural growth rate. On the other hand, the competition between two groups exhausts their human and material resources and decreases their capabilities. The parameters, b and e, denote rates at which a group's capability decays by competition with the other (Parrish and Saila 1970). While each group tries to damage the other, a group of which members have stronger resolve and faith may have a lower decay rate. In sum, the model represents civil war where each group enhances its capability by mobilizing resources from citizens, and weakens by competing with the other. The parameters, a, b, c and e, indicate which group has competitive advantages.

Modeling Third-Party Intervention in Civil War

External interveners change an evolutionary process of civil war by influencing the growth and decay of two competing parties. The outside actor can engage in either biased or neutral intervention, although a typical type of intervention is biased one. Of 97 civil conflicts in which third parties intervened since 1944, 94 conflicts experienced biased intervention, 10 underwent neutral interveners, and 7 experienced both types at the same time by different interveners (Regan 2002). While neutral interveners try to make a peaceful resolution by managing balance of power between two groups, biased

interveners support one group to increase its ability to fight a war. The two methods of intervention are likely to have different effects on the distribution of power between two competing groups.

A Biased Intervention Model

A biased intervener increases the capability of the supported side, but at the same time it is likely to produce backlash and unintentionally help strengthen the other side. In other words, biased intervention is likely to be a double edged sword for the supported group. Since it is self-evident that external support enhances the supported side, I focus on explaining how it produces backlash. Afterwards I will build a dynamic model that incorporates an intervener equation, a protégé's growth by the intervener's support, and backlash effects.

First, biased interveners face nationalist resistance because they do not have mutual consent by warring parties and they are perceived as violators of state sovereignty by a targeted group and its domestic supporters. Since early-mid twentieth century, the right of self-determination and the norms of state sovereignty / nonintervention have been diffused into the international society and expressively stipulated in the articles of the UN Charter (Crawford 1993; Finnemore and Sikkink 1998). These norms that imply independence from unwanted intervention by outside authorities have expedited resistance movements in the third world countries against colonizers or imperial powers and encouraged them to handle internal affairs on their own without outside interference (Philpott 1995a, 1995b). Given those norms diffusion, biased intervention may be nothing but the infringement of sovereignty or even invasion from a standpoint of a

belligerent group that interveners want to remove, whether it has strategic objectives or humanitarian motives.

Biased interveners may intend to exert influences on the target state's domestic or foreign policy for their own interests (Gent 2008). To do so, they try to alter the balance of power in favor of one group which is more likely to contribute to their future interests (Lemke and Regan 2004; Findley and Teo 2006). In the meantime, the other group fighting against the interveners and their protégé has a chance to mobilize political support and material resources from citizens who are not oblivious to self-seeking interveners' goal (Englebert and Tull 2008), emphasizing that it is a protector of sovereignty and national interests. For example, in 1979 the Soviet Union intervened in the Afghan civil war (1978-1992) to support the pro-Soviet regime and secure influence on Afghanistan and the region. This intervention provoked nationalist resistance from the Afghan people and extended mass revolt (Nojumi 2002). It stimulated a much larger number of people to join the Afghan Mujahideen fighting against the Soviet Union and the pro-Soviet regime and to provide Mujahideen with more resources including funds and foods (Nojumi 2002).

Even when biased interveners stand on a humanitarian cause, they are unlikely to be able to avoid resistance from targeted combatants and their domestic supporters. Consider that civil war typically occurs in a divided state in terms of ethnicity, religion, or political ideology. Each group has its political patrons and appeals for their support to fight and win a war. Hence, an attempt to eliminate either a government or a rebel group becomes a hostile action against citizens who share identity, ideology, or post-war plan with the targeted combatants, and thus triggers resistance and strengthens cohesion

between the combatants and citizens. While interveners assert that a belligerent group is a perpetrator or war criminal, the group and its upholders declare that the interveners are invaders (Rieff 2002). Therefore, it can be said that even humanitarian intervention, when it has a biased position, provokes resistance from a targeted group and strengthen bond between the group and its domestic supporters.

For instance, undertaking the UN-authorized humanitarian mission in Somalia in 1993, the US attempted to eliminate the leading warload, Mohamed Farrah Aidid. As described by Rieff (2002, 35-36), from a view of the US or Americans, certainly this mission was to do right, but from Aidid and his proponents' perspective, the US troops were there to frustrate their party's plan to seize central power in Somalia. "While Aidid could never match the military power of the United States, his fighters in Mogadishu, the Somali capital, soon proved that they were more than a match for the Americans in resolve and determination (Rieff 2002, 36)." Another example is France-led UN intervention in the Ivory Coast civil war since 2002. In the war, French troops attacked the government army, and the UN imposed sanctions against Ivorian leaders including President Gbagbo and enforced an arms embargo (Africa Research Bulletin 2006). This biased intervention, despite asserted humanitarian causes, provoked anti-France and anti-UN movement. Denouncing France's policy that intends to expand influence on its former colony, the government supporters attacked French schools, cultural centers, and UN offices, and forced peacekeepers to retreat (Collett 2005; Africa Research Bulletin 2006; Englebert and Tull 2008).

Second, backlash can also result from a government or a rebel group's dependence on foreign powers. While a group resorting to resources from foreign

interveners becomes unaccountable to its citizens, its rival has an opportunity to gain

political support from citizens and mobilize resources. During civil war, both the

government and the opposition are dependent on civilians for its survival and victory, and

each group can gain civilian support by providing public goods such as security

(Weinstein 2007). A group sustained by an external patron, however, does not have to

rely on its citizens for resources, and thus is less likely to be interested in the demands

and needs of civilians.[21] Weinstein (2007) found that rebel groups supported by external

interveners tend to be indiscriminately violent, and less likely to protect and serve

citizens. While a group oppresses or ignores citizens, the other group has a chance to

grow, committing to provide security and suggesting a blueprint for the better future

(Weinstein 2007). During the Peruvian civil war since 1980, the US support for the

Peruvian government, regardless of its intention, encouraged the government to oppress

and butcher civilians as well as armed rebels and exacerbated the conflict (Fielding and

Shortland 2010). Brutal counterinsurgency campaigns and civilian abuse by the

government helped a rebel group, Shining Path, to recruit more fighters and collect more

foods from citizens and enhanced its military capability (Weinstein 2007).

Unaccountability and violent inclination of a group supported by foreign powers can be a

chance for the other group to gain more support from citizens.

In sum, biased intervention stimulates nationalist resistance and motivates

civilians to support a group which confronts the intervener and its protégé. Biased

interveners also allows their protégé not to be concerned about civilian suffering, and

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[21] There are similar arguments about the effects of foreign aid. Brautigam (1992) contends that as a state's reliance on foreign aid increases, accountability becomes a matter not between a government and its citizens but between a government and foreign donors. Knack (2001) and Bates (2001) also confirm that when a state receives aid from foreign powers, it is less likely to respond to its citizens.

unintentionally help the opposite group grow.[22] Dynamic model systems can incorporate

the backlash effects to account for the changes of combatant groups' capabilities.

Here I build a dynamic model of civil war in which a foreign power intervenes to

support a government or a rebel group, upon the baseline model introduced in a prior

section. For a government-biased intervention model, I add an equation to the base model.

The equation accounts for a government-biased intervener's support at a given time

$(I_g(t))$. In this system, while the two competing groups seek a common prey, resources

from citizens in their territory, the intervener from the external world hunts for its own

prey, a rebel group. Biased interveners tend to go to harder cases (Gent 2008), which

implies that the growth of a rebel group relative to a government will promote external

support for the government. While government-biased intervention increases

government's capability, it produces backlash by which a rebel group grow. The

equations system of the model can be expressed as follows:

A model of civil war intervention: Government-biased intervention

$$\frac{dG}{dt} = a\left(1 - \frac{G}{k_g}\right)G - bGR + fI_g \qquad [3]$$

$$\frac{dR}{dt} = c\left(1 - \frac{R}{k_r}\right)R - eGR + hRI_g \qquad [4]$$

$$\frac{dI_g}{dt} = -jI_g + m\frac{R}{G}I_g \qquad [5]$$

where a, b, c, e, f, h, j and m are positive parameters, , and k_g and k_r are also positive.

In the equation [3], the third term (fI_g) indicates increase of government's

capability by assistance from a government-biased intervener. For this term, I do not use

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[22] International state-building literature also demonstrates that foreign intervention has often provoked nationalist resistance and made post-war government unaccountable to its citizens (e.g., Paris and Sisk 2009).

an interaction term because there is no competition between the government and the intervener and the support from the intervener will directly increase the government's capability. In the rebel group equation (eq. [4]), the third term (hRI_g) denotes a rebel group's growth by backlash. To capture the effects of backlash, the interaction term between a rebel group and an intervener is necessary because a rebel group can gain political support and mobilize resources from citizens when it challenges to the biased intervener. For instance, a reason why Afghan people joined and supported Mujahideen was because the rebel competed and fought against the Soviet Union.

In the intervener equation (eq. [5]), the first term ($-jI_g$) refers to natural decrease of intervener's support. Just as the lack of prey leads to natural decay of predators, the absence of a rebel group which has a role as a prey for a government-biased intervener leads to the reduction of support from the intervener. This term is also reasonable that intervention is costly. The second term ($m\frac{R}{G}I_g$) accounts for how a government-biased intervener responds to the growth or decay of two competing groups. As a rebel group grows up, the government-biased intervener will enlarge its support to defeat the rebel group. In other words, just as prey feeds predator, interactions between a rebel group and a government-biased intervener will increase the intervener's support for the government. This term reflects that biased intervention is endogenous to the relative capabilities of two conflicting groups.

A rebel-biased intervention model is symmetric to a government-biased one. A rebel-biased intervener experiences natural decay ($-jI_r$) in the absence of its prey, a government. As the intervener confronts a government which becomes strong, it increases its support for the rebel group. On the other hand, the relative decay of a

government is likely to reduce intervener's support for the rebel because as the prospect for rebel victory increases, the marginal impact of rebel-biased intervention decreases. Therefore, the interaction term ($m\frac{G}{R}I_r$) includes the relative capability of a government to a rebel group. The third terms in the equations [6] and [7] indicate that while the intervener enhances rebel's capability (hI_r), it produces backlash and gives a chance for a government resisting against the intervener to collect resources from citizens (fGI_r).

A model of civil war intervention: Rebel-biased intervention

$$\frac{dG}{dt} = a\left(1 - \frac{G}{k_g}\right)G - bGR + fGI_r \tag{6}$$

$$\frac{dR}{dt} = c\left(1 - \frac{R}{k_r}\right)R - eGR + hI_r \tag{7}$$

$$\frac{dI_r}{dt} = -jI_r + m\frac{G}{R}I_r \tag{8}$$

A Neutral Intervention Model

The goal of neutral interveners that adhere to a classic principle of humanitarianism is different from that of biased interveners. While biased interveners desire their protégé's victory, neutral interveners seek to make a peaceful resolution between combatants. Different goals result in different behaviors and consequences. Unlike biased interveners that support one side and attempt to alter balance of power, neutral interveners try to contribute to a negotiated settlement by helping ensure that current power distribution remains static (Regan 2000). Fluctuation of power distribution motivates combatants to continue fighting for victory, but the status quo can facilitate a negotiated settlement (Regan 2000). Hence, neutral interveners do not intend to benefit or disadvantage a particular group (Barnett and Weiss 2008), and thus do not face backlash.

On the other hand, neutral interveners can stunt the growth of both groups in the process of trying to keep current balance of capabilities and make a negotiated settlement. As an arbitrator, neutral interveners attempt to reduce combatants' incentives to continue fighting by deploying neutral peacekeepers, creating a buffer zone, or providing material rewards / pressure (Walter 1997; Mason et al. 1999; Regan 2000; Smith and Stam 2003). While international actors with moral authority and legitimacy, like the UN,[23] make an effort to settle conflict, soldiers can be motivated to give up weapons and citizens are less likely to join and support belligerent groups (Fortna 2008). Therefore, neutral interveners can equally retard the rise of two groups. The model of neutral intervention in civil war can be expressed as follows:

A model of civil war intervention: Neutral intervention

$$\frac{dG}{dt} = a\left(1 - \frac{G}{k_g}\right)G - bGR - fI_n \tag{9}$$

$$\frac{dR}{dt} = c\left(1 - \frac{R}{k_r}\right)R - eGR - hI_n \tag{10}$$

$$\frac{dI_n}{dt} = -jI_n + mGR \tag{11}$$

The model of neutral intervention is also based on a competitive hunters model. The neutral intervener is involved in civil war only when there are groups fighting against each other, which means that in the absence of groups in conflict, the third-party is likely to withdraw $(-jI_n)$. On the contrary, the competition between the government and the opposition (mGR) is likely to enlarge the involvement of the neutral intervener. This is simply because the main goal of neutral interveners is a peaceful settlement of civil war. In the equation [9] and [10], the third terms $(-fI_n, -hI_n)$ denote that a neutral intervener

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[23] UN peacekeepers are not necessarily neutral interveners. When they support a particular group, I regard them as biased interveners.

hinders each domestic group's rise. For them, interaction terms are not necessary because neutral interveners stunt the growth of belligerent groups not by competing against them but by forming conditions under which they are less likely to be able to mobilize resources and enhance fighting capabilities.

Equilibria, Simulations, and Implications

To analyze the three theoretical models, first, I find equilibria which set each equation to zero. For example, for the baseline model, equilibria are the critical points satisfying $\frac{dG}{dt} = 0, \frac{dR}{dt} = 0$. When an equilibrium is reached, the system will stay at that point, if there is no exogenous disturbance (Kadera et al. 2004). Second, I find eigenvalues for equilibria in each model to determine the properties of the equilibria. The eigenvalues determine the property of each equilibrium and the general behavior of the system near each equilibrium (Kadera et al. 2004) (see Table 3.1). Third, I simulate each model and show representative movements approaching the equilibria. The simulation results will show how domestic groups' capabilities and intervener's support change over time. For the simulations, I assume that the government is initially stronger than the opposition (Mason et al. 1999; Balch-Lindsay et al. 2008), but there is no huge gap between them. Such initial conditions are reasonable. If there is a huge capability gap between two groups, intervention is unlikely to occur because it is inefficient (Gent 2008). Finally, based on the analysis of the models and simulation results, I will generate deductions about how third-party intervention influences the capability difference between two groups and the duration and outcome of civil war.

Table 3.1 Equilibria and Their Properties

Equilibrium (G^*, R^*, I^*)	Eigenvalue	Property
A baseline model: Nonintervention		
1. $(0, 0)$	$\{a, c\}$	unstable node
2. $(k_g, 0)$	$\{-a, c - ek_g\}$	stable node, unstable saddlepoint
3. $(0, k_r)$	$\{-c, a - bk_r\}$	stable node, unstable saddlepoint
4. $\left(-\frac{ack_g - bck_gk_r}{-ac + bek_gk_r}, -\frac{-ack_r + aek_gk_r}{ac - bek_gk_r}\right)$	App.	stable or unstable node, unstable saddle point
A model of government-biased intervention		
1. $(k_g, 0, 0)$	$\{-a, -j, c - ek_g\}$	stable node, unstable saddle point
2. $\left(\frac{ck_g(a - bk_r)}{ac - bek_ak_r}, \frac{ak_r(c - ek_g)}{ac - bek_ak_r}, 0\right)$	App.	stable node, unstable saddle point
3. $(+, +, (+, -, or\ 0))^{\text{App.}}$	App.	Stable node, unstable saddle point, stable center, stable or unstable spiral point
4. $((+, -, or\ 0), (+, -, or\ 0), (+, -, or\ 0))^{\text{App.}}$	App.	Stable node, unstable saddle point, stable center, stable or unstable spiral point
A model of rebel-biased intervention		
1. $(0, k_r, 0)$	$\{-c, -j, a - bk_r\}$	stable node, unstable saddle point
2. $\left(\frac{ck_g(a - bk_r)}{ac - bek_ak_r}, \frac{ak_r(c - ek_g)}{ac - bek_ak_r}, 0\right)$	App.	stable node, unstable saddle point
3. $(+, +, (+, -, or\ 0))^{\text{App.}}$	App.	Stable node, unstable saddle point, stable center, stable or unstable spiral point
4. $((+, -, or\ 0), (+, -, or\ 0), (+, -, or\ 0))^{\text{App.}}$	App.	Stable node, unstable saddle point, stable center, stable or unstable spiral point
A model of neutral intervention		
1. $(0, 0, 0)$	$\{a, c, -j\}$	unstable saddlepoint
2. $(k_g, 0, 0)$	App.	Stable node, unstable saddle point, stable center, stable or unstable spiral point
3. $(0, k_r, 0)$	App.	Stable node, unstable saddle point, stable center, stable or unstable spiral point
4. $((+, -, or\ 0), (+, -, or\ 0), (+, -, or\ 0))^{\text{App.}}$	App.	Stable node, unstable saddle point, stable center, stable or unstable spiral point

Note: App.: For the equilibria and eigenvalues that are too long to be shown here, see Appendix.

A Baseline Model of Civil War

A baseline model has four equilibria. It appears that equilibria 2 and 3 are more

meaningful than others. They show that the system will generally stay at the point, $(k_g, 0)$

or $(0, k_r)$, over time and their properties are stable node or unstable saddle point. These

equilibria predict that one of the two groups will die out and the other will grow to a

maximum level. Equilibrium 1, (0, 0), indicates that both groups will be completely

exhausted as time goes by, but the equilibrium's property is unstable. Equilibrium 4 is

less interesting than the points 2 and 3 because both G^* and R^* may be positive, negative,

or zero, depending on parameters and carrying capacities.

Through simulations, I present typical examples of the model. Assuming that the

two groups have the same natural growth rates, decay rates by competition, and carrying

capacities, I first exhibit two ideal movements which indicate how the government and

the opposition's capabilities change over time (Figures 3.1.1 and 3.1.2).[24] Whereas Figure

3.1.1 shows the capability gap between two groups increases over time and finally one of

the two becomes dominant, Figure 3.1.2 predicts that two groups' capabilities converge

at a positive point. Because these results are based on ideal conditions under which both

groups have the same competitive advantages, I plot more realistic cases in which one of

[24] For the Figures, 3.1.1 and 3.1.2, I use the following parameters, initial conditions, and carrying capacities:
(a, b, c, e) = (1, 1, 1, 1), $(G_{t=0}, R_{t=0})$ = (0.5, 0.3), and carrying capacities (k_g, k_r)= (1.1, 1.1) (Figure 3.1.1)
or (k_g, k_r) = (0.9, 0.9) (Figure 3.1.2). In this chapter, I have assumed that two competing groups seek
similar resources in similar ways (extraction of resources from citizens). This means that their decaying
rates by competition (b, e) are equal to or close to 1 (Edelstein-Keshet 1988, 224-231; Gotelli 2008, 100-
114). Given that each group's natural growth rate is 1, I found that the shape of the graphs varies with
carrying capacities ($k_g = k_r > 1$ or $k_g = k_r < 1$) and there are two representative types of movements of
the variables, warring parties' capabilities.

the two groups has an advantage in natural growth rates or decay rates by competition (Figures 3.1.1-1 – 3.1.1-4 and 3.1.2-1 – 3.1.2-4).[25]

All these realistic examples show that the capability gap between two groups increases over time, despite the possibility of some initial decrease of the gap. They show that one group's capability reaches a maximum level, and the other's capability is nearly exhausted, except Figures 3.1.2-3 and 3.1.2-4, and imply that the duration and outcome of civil war depend on each group's competitive advantages as well as the initial power distribution. For instance, if the rebel's natural growth rate (c) is larger than the government's rate (a) and all other conditions are equal, the rebel's capability will overwhelm the government's over time even though it is initially weaker (Figure 3.1.1-2 and 3.1.2-2). This implies that when a rebel group gains more support from citizens than a government, it has a chance to defeat the government (e.g., Cuba civil war (1958-1959)).

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[25] For Figures 3.1.1-1 – 3.1.1-4 and 3.1.2-1 – 3.1.2-4, all conditions other than the natural growth rate or the decay rate by competition are the same as the Figures 3.1.1 and 3.1.2, respectively.

Figure 3.1 Simulations of the Baseline Model of Civil War

Fig.3.1.1 At all equal conditions ($k_g = k_r = 1.1$)

Fig.3.1.1-1 Natural growth rate:
Gov. > Rebel (c=0.8a)

Fig.3.1.1-2 Natural growth rate:
Gov. < Rebel (a=0.8c)

Fig.3.1.1-3 Decay rate by competition:
Gov. < Rebel (b=0.8e)

Fig.3.1.1-4 Decay rate by competition:
Gov. > Rebel (e=0.8b)

Figure 3.1 Continued

Fig.3.1.2 At all equal conditions ($k_g = k_r = 0.9$)

Fig.3.1.2-1 Natural growth rate:
Gov. > Rebel (c=0.8a)

Fig.3.1.2-2 Natural growth rate:
Gov. < Rebel (a=0.8c)

Fig.3.1.2-3 Decay rate by competition:
Gov. < Rebel (b=0.8e)

Fig.3.1.2-4 Decay rate by competition:
Gov. > Rebel (e=0.8b)

As a result, the equilibria and simulations produce an important implication that in the absence of external intervention, one of the two groups is likely to be a dominant power over time and win a military victory. This argument is consistent with well-known biological laws, *the principle of competitive exclusion*, which explains that two competing species which have similar ecological needs cannot exist together in the same territory infinitely, and only one species will survive and flourish (Gause 1934; Olinick 1978, 100). The model prediction that matches with the biological laws supports a controversial proposition that once civil war occurs, the war itself resolves conflict and leads to peace (Luttwak 1999; Weinstein 2005). In a civil war, compromise or coexistence is difficult (relative to interstate war) because combatants do not have their own territories to retreat and "the stake is control of this new government and is thus, literally, life and deaths for the combatants (Licklider 1995, 681)".

A Biased Intervention Model

In the system of civil war with a government-biased intervener, there are four equilibria. The points, 1 and 3, are more meaningful than others, although their eigenvalues do not indicate single property. The equilibrium 1 shows that while the government's capability reaches a maximum level, the opposition's capability and the intervener's assistance disappears over time. For the equilibrium 3, both domestic groups' capabilities will stay at some positive points, and a biased intervener's support will be positive, negative, or zero, over time. With the parameter values that make the biased intervener's assistance positive or zero, the equilibrium 3 can be substantively interesting. The other two equilibriums, 2 and 4, indicate that both domestic groups' capabilities may

be positive, negative, or zero, and thus they are less meaningful than the others. The equilibria1 and 3 predict that the government will overwhelm the opposition over time, or that both groups will sustain their capabilities for a long time. Simulations will depict these expectations.

First, I simulate ideal cases of civil war with government-biased intervention, assuming that neither a government nor a rebel group has competitive advantage (Figure 3.2.1 and 3.2.2).[26] The effects of intervention become clear when the simulation results are compared to those of the baseline model (Figure 3.1.1 and 3.1.2). The comparison (Figure 3.2.1 to 3.1.1, and Figure 3.2.2 to 3.1.2) suggests that when the government is initially more capable than the opposition $(G(0) > R(0))$ and all other conditions are equal, external support for the government is likely to make no significant changes in the capability gap, and the intervener is likely to quickly stop its support.

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[26] For the Figures, 3.2.1 and 3.2.2, (a, b, c, e) = (1, 1, 1, 1), $(G_{t=0}, R_{t=0}, I_{t=0}) = (0.5, 0.3, 0.2)$, and $(k_g, k_r)=$ (1.1, 1.1) (Figure 3.2.1) or (0.9, 0.9) (Figure 3.2.2).

Figure 3.2 Simulations of Civil War with Gov.-Biased Intervention

Fig.3.2.1 At all equal conditions ($k_g = k_r = 1.1$)

Fig.3.2.1-1 Natural growth rate:
Gov. > Rebel (c=0.8a)

Fig.3.2.1-2 Natural growth rate:
Gov. < Rebel (a=0.8c)

Fig.3.2.1-3 Decay rate by competition:
Gov. < Rebel (b=0.8e)

Fig.3.2.1-4 Decay rate by competition:
Gov. > Rebel (e=0.8b)

Figure 3.2 Continued

Fig.3.2.2 At all equal conditions ($k_g = k_r = 0.9$)

Fig.3.2.2-1 Natural growth rate:
Gov. > Rebel (c=0.8a)

Fig.3.2.2-2 Natural growth rate:
Gov. < Rebel (a=0.8c)

Fig.3.2.2-3 Decay rate by competition:
Gov. < Rebel (b=0.8e)

Fig.3.2.2-4 Decay rate by competition:
Gov. > Rebel (e=0.8b)

Next, I simulate more realistic examples (Figures 3.2.1-1 – 3.2.1-4 and 3.2.2-1 –

3.2.2-4),[27] just as I did for a baseline model. When the government has competitive

advantages as well as initial superiority (Figures 3.2.1-1, 3.2.1-3, 3.2.2-1, and 3.2.2-3),

the government becomes a dominant power over time, and government-biased

intervention does not make significant differences in the distribution of power, compared

to nonintervention (Figures 3.1.1-1, 3.1.1-3, 3.1.2-1, and 3.1.2-3 in a baseline model).

This result implies that a government-biased intervener is unlikely to significantly

contribute to a fast government victory. Also, as the capability gap between the

government and the opposition increases, the intervener stops supporting the government.

It does so because it considers the efficiency of intervention (Gent 2008).

On the other hand, when the opposition has competitive advantages, the capability

gap decreases over time and neither group is likely to be a dominant power (Figures

3.2.1-2, 3.2.1-4, 3.2.2-2, and 3.2.2-4). In other words, the government-biased intervener

reduces the capability gap, but it still fails to make the government superior to the

opposition because of its increasing costs and backlash. The narrower capability gap

leads to longer war and make it harder for one group to defeat the other. Fearon (2004,

276) affirms that "civil wars last a long time when neither side can disarm the other,

causing military stalemate." Therefore, the simulation results show that a government-

biased intervener lengthens civil war and reduces the likelihood of a rebel victory,

compared to baseline counterparts (Figures 3.1.1-2, 3.1.1-4, 3.1.2-2, and 3.1.2-4).

Responding to the rise and fall of the government and the opposition, foreign powers stop

or resume intervention, repeatedly.

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[27] For Figures 3.2.1-1 – 3.2.1-4 and 3.2.2-1 – 3.2.2-4, all conditions other than the natural growth rate or the decay rate by competition are the same as the Figures 3.2.1 and 3.2.2, respectively.

The simulations, along with equilibrium points of the model, predict that government-biased intervention is likely to have no significant effect on the capability gap between a government and a rebel group or that it is likely to decrease the capability gap. With regard to war duration and outcome, they imply that a government-biased intervener is likely to fail to make a positive contribution to a fast government victory, but succeed in reducing the risk of a rebel victory.

Like the government-biased intervention model, rebel-biased one also has four equilibria, and two of them are substantively more interesting. The equilibrium 1 represents that while rebel's capability reaches a maximum, a government becomes completely exhausted over time. The equilibrium 3 indicates that both domestic groups' capabilities will stay at some positive points over time. Simulation results show how intervener's support for a rebel group influences the distribution of power between two groups in the course of civil war, and vice versa (Figure 3.3).[28]

When a rebel group has a competitive advantage (Figures 3.3.1-2, 3.3.1-4, 3.3.2-2, and 3.3.2-4), the rebel group becomes stronger than the government over time despite initial inferiority, which is a similar result to the baseline counterparts (Figures 3.1.1-2, 3.1.1-4, 3.1.2-2, and 3.1.2-4). Therefore, in this scenario, rebel-biased intervention does not significantly influence the capability gap between two groups, thereby making no significant difference in the duration and outcome of civil war. The intervener stops supporting the rebel group, as the capability gap between the government and the rebel group increases.

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[28] For the Figures, 3.3.1 and 3.3.2, (a, b, c, e) = (1, 1, 1, 1), $(G_{t=0}, R_{t=0}, I_{t=0})$ = (0.5, 0.3, 0.2), and (k_g, k_r)= (1.1, 1.1) (Figure 3.3.1) or (0.9, 0.9) (Figure 3.3.2). For Figures 3.3.1-1 – 3.3.1-4 and 3.3.2-1 – 3.3.2-4, all conditions other than the natural growth rate or the decay rate by competition are the same as the Figures 3.3.1 and 3.3.2, respectively.

Figure 3.3 Simulations of Civil War with Rebel-Biased Intervention

Fig.3.3.1 At all equal conditions ($k_g = k_r = 1.1$)

Fig.3.3.1-1 Natural growth rate:
Gov. > Rebel (c=0.8a)

Fig.3.3.1-2 Natural growth rate:
Gov. < Rebel (a=0.8c)

Fig.3.3.1-3 Decay rate by competition:
Gov. < Rebel (b=0.8e)

Fig.3.3.1-4 Decay rate by competition:
Gov. > Rebel (e=0.8b)

Figure 3.3 Continued

Fig.3.3.2 At all equal conditions ($k_g = k_r = 0.9$)

Fig.3.3.2-1 Natural growth rate:
Gov. > Rebel (c=0.8a)

Fig.3.3.2-2 Natural growth rate:
Gov. < Rebel (a=0.8c)

Fig.3.3.2-3 Decay rate by competition:
Gov. < Rebel (b=0.8e)

Fig.3.3.2-4 Decay rate by competition:
Gov. > Rebel (e=0.8b)

When a government side has a competitive advantage (Figures 3.3.1-1, 3.3.1-3, 3.3.2-1, and 3.3.2-3), a rebel-biased intervener reduces the capability gap between a government and a rebel group, but the intervener fails to make the rebel group preponderant over the government, just as a government-biased intervener is unsuccessful in making the government dominant over the opposition. This means that the pro-rebel intervener is likely to make competition between two groups tighter, and thus it is likely to make civil war longer (Elbadawi and Sambanis 2000). We can see the effects by comparing the simulation results to the baseline counterparts (Figures 3.1.1-1, 3.1.1-3, 3.1.2-1, and 3.1.2-3).

The equilibria and simulations of a rebel-biased intervention model therefore produce an expectation that a rebel-biased intervener is likely to fail to positively contribute to a fast rebel victory, but succeed in reducing the risk of a government victory.[29] In other words, the contribution of a rebel-biased intervention to a rebel-group may be to retard a military victory by a government.

As a result, my dynamic models that capture interactions among a government, a rebel group, and a biased intervener yield the following hypotheses about the effects of biased intervention on the internal power distribution and the duration and outcome of civil war:

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[29] There might be an alternative argument. Cunningham and his colleagues (2009) argue that civil war is more likely to quickly end in rebel victory when the strength of a rebel group is at parity with a government, as well as when the rebel is stronger than the government. This proposition can imply that if a rebel-biased intervener increases the relative rebel capability and decreases the capability gap between two groups, the hazard of a rebel victory is likely to increase. However, this scenario can only apply to a subset of my simulations. Therefore, I do not adopt the alternative argument as a hypothesis because it requires specific conditions.

H_{BGap}: Either government- or rebel-biased intervention is likely to have no significant effect on the capability gap between the two groups or decrease the capability gap.

$H_{GBOutcome}$: Government-biased intervention is likely to fail to positively contribute to a fast government victory, but succeed in decreasing the hazard of a rebel victory.

$H_{RBOutcome}$: Rebel-biased intervention is likely to fail to positively contribute to a fast rebel victory, but succeed in decreasing the hazard of a government victory.

A Neutral Intervention Model

Equilibria of a neutral intervention model are similar to those of the baseline model of civil war. Like the base model, two critical points, $(k_g, 0, 0)$ or $(0, k_r, 0)$, are substantively meaningful, which means that only one of the two groups will survive and flourish. Simulation results depict movements toward the equilibrium points.[30] The ideal cases where a government is initially stronger, but all other conditions are equal, show that a neutral intervener (unintentionally) helps the government dominate over the opposition. Realistic examples in which either a government or a rebel group has competitive advantages exhibit that both groups' capabilities more swiftly reach the equilibrium points than do counterparts of a baseline model.[31] In other words, in the

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[30] For the Figures, 3.4.1 and 3.4.2, (a, b, f, c, e, h) = (1, 1, 0.3, 1, 1, 0.3), $(G_{t=0}, R_{t=0}, I_{t=0})$ = (0.5, 0.3, 0.2), and (k_g, k_r)= (1.1, 1.1) (Figure 3.4.1) or (0.9, 0.9) (Figure 3.4.2). For Figures 3.4.1-1 – 3.4.1-4 and 3.4.2-1 – 3.4.2-4, all conditions other than the natural growth rate or the decay rate by competition are the same as the Figures 3.4.1 and 3.4.2, respectively. Here parameters (f, h) indicate a neutral intervener's ability to stunt the growth of both groups.

[31] Changing parameter values of (f, h) from (0.1, 0.1) to (1, 1), I ran many simulations, besides reported ones. The results displayed that as the values approach to (1, 1), both groups' capabilities tend to more quickly reach equilibria, $(k_g, 0, 0)$ or $(0, k_r, 0)$. When I set the values to (0.1, 0.1), movements to the equilibria were almost the same as baseline models. I chose (0.3, 0.3) for the parameter values assuming that a neutral intervener does not have strong ability.

presence of a neutral intervener, a group having a competitive advantage is likely to more quickly overwhelm the other group than in the absence of a neutral intervener. This result implies that although a neutral intervener is unlikely to change war outcome, it is likely to reduce war duration by widening the capability gap and in turn by contributing to a fast victory of either a government or a rebel group.

This surprising result is better able to be understood by considering an ecological environment in which two species compete with each other and the third species equally lowers the two competitors' growth. When the third species "imposes an additional depressing effect equally on both competing species," one of the two competing species which has competitive advantages (e.g., higher natural growth rates) may have an opportunity to act to eliminate the weaker species at an earlier time than when the third species does not exist (Parrish and Saila 1970, 208).[32]

Similarly, in civil war situations, neutral interveners are likely to create an environment where a group initially stronger or having competitive advantages grows faster and overwhelms the other more quickly, even though they are unlikely to intend to do so. As a result, the equilibria and simulation results suggest the following hypotheses about the consequences of neutral intervention:

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[32] Parrish and Saila's (1970) study provides important implications to interpret my simulation results, but their population model is different from my neutral intervention model. Whereas their model regards the third species as a predator and includes interaction terms with the other species (preys), my model does not consider a neutral intervener to be a predator and thus does not use interaction terms between the intervener and internal competitors. For this reason, in fact, Parrish and Saila's (1970) simulations display that in the presence of the predator (the third species), the two competing species persist for a longer time.

Figure 3.4 Simulations of Civil War with Neutral Intervention

Fig.3.4.1 At all equal conditions ($k_g = k_r = 1.1$)

Fig.3.4.1-1 Natural growth rate:
Gov. > Rebel (c=0.8a)

Fig.3.4.1-2 Natural growth rate:
Gov. < Rebel (a=0.8c)

Fig.3.4.1-3 Decay rate by competition:
Gov. < Rebel (b=0.8e)

Fig.3.4.1-4 Decay rate by competition:
Gov. > Rebel (e=0.8b)

Figure 3.4 Continued

Fig.3.4.2 At all equal conditions ($k_g = k_r = 0.9$)

Fig.3.4.2-1 Natural growth rate:
Gov. > Rebel (c=0.8a)

Fig.3.4.2-2 Natural growth rate:
Gov. < Rebel (a=0.8c)

Fig.3.4.2-3 Decay rate by competition:
Gov. < Rebel (b=0.8e)

Fig.3.4.2-4 Decay rate by competition:
Gov. > Rebel (e=0.8b)

H_{NGap}: *Neutral intervention is likely to increase the capability gap between a government and a rebel group.*

$H_{NOutcome}$: *Neutral intervention is likely to increase the hazard of a military victory by either a government or a rebel group.*

Conclusion

This chapter has examined how biased or neutral interveners change the distribution of power between a government and a rebel group, and thereby making differences in the duration and outcome of civil war. A dynamic model that has been developed upon a competitive hunters model predicts that either biased or neutral intervention is likely to have unintended consequences. The inferences are drawn by comparing a biased or neutral intervention model to a baseline model.

A baseline model without outside intervention presents the equilibria and simulation results which indicate that the capability gap between two combatants tend to increase over time, and thus a civil war is likely to end through a military victory either by a government or a rebel group. Biased intervention models produce a deduction that either government- or rebel biased interveners are likely to have no significant effect on the capability gap or decrease the gap, and thus fail to help their protégé's fast victory, although they retard a victory by their protégé's rival. Biased interveners are likely to do so because they tend to go into harder cases where the capability gap between combatants is narrower and because they produce backlash from a group that they want to remove and its domestic supporters. A neutral intervention model predicts that while neutral interveners try to maintain the balance of power to promote a negotiated settlement, a

group having competitive advantages is likely to increase its relative capability and overwhelm the other. Neutral interveners are likely to make a civil war shorter in an unintentional way. As a result, my dynamic model proposes that the consequences of both types of intervention are likely to be inconsistent with the motives and goals of interveners. These hypotheses will be empirically tested in Chapter 3.

CHAPTER 4

INTERVENTION AND CIVIL WAR OUTCOMES II:

EMPIRICAL EVIDENCE

In this chapter, I empirically test hypotheses deduced from a dynamic model that was built in Chapter 3. The hypotheses specify how external intervention influences the capability gap between a government and a rebel group (H_{BGap} and H_{NGap}) and make differences in the duration and outcome of civil war ($H_{GBOutcome}$, $H_{RBOutcome}$, and $H_{NOutcome}$). I first analyze the relationships between intervention and the capability gap, and then estimate the effects of intervention on the duration from the start of civil war to its termination by a government victory, a rebel victory, or a negotiated settlement. Using Regan's (2002) civil war dataset that encompasses 150 civil wars between 1944 and 1999, I exclude civil wars in major powers because "major power status would perfectly predict nonintervention (Gent 2008, 728)." I also leave out some cases because of missing data. As a result, I analyze 141 civil wars in this chapter.

Reciprocal Causation between External Intervention and

Internal Capability Gap

Following dynamic model systems constructed in Chapter 3, I test three separate models, government-biased, rebel-biased, and neutral intervention models, in which the unit of analysis is conflict and year. I am primarily interested in the effects of intervention on the capability gap between two conflicting groups, but my hypotheses have been derived from the dynamic model that considers reciprocal causation between external

intervention and internal capability distribution. Therefore, empirical tests must have two endogenous variables to address the reciprocal causation.

Endogenous Variables and Estimation Method

One endogenous variable is government-biased, rebel-biased, or neutral intervention, and the other is the capability gap between belligerent groups. A civil war can experience one-time intervention, but more frequently it undergoes multiple interventions in its life cycle (Aydin 2010). Based on Regan's (2002) dataset that report timing of multiple interventions in each civil war, I measure dichotomous variables indicating the (re-)occurrence or nonoccurrence of each type of intervention in a given year,[33] although I cannot measure the continuous change of the size of external support because the data do not provide such information.

I measure the capability gap between the government and the opposition observing each group's military force size. The government's force size is taken from the annual country data for military personnel from the COW National Material Capabilities dataset (Singer 1987). For the opposition's size, I employ aggregate measure of rebel army size provided by Regan and Aydin (2006). To measure the capability gap, I calculate the absolute value of the normalized difference of both groups' army size in a given year.[34] This measure, however, only reflects the annual change of the government's military personnel because the opposition size data is time-constant within a unit of

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[33] Whereas Regan (2002) reports the occurrence of intervention monthly, I record it yearly because another endogenous variable that is in a simultaneous relationship is yearly measured.

[34] This computation is as follows: $\left|\frac{Government\ army\ size - Rebel\ army\ size}{Government\ army\ size + Rebel\ army\ size}\right|$. The range of values is from 0 to 1. As the capability gap between two groups increases, the value of this measure goes towards 1. If a government has the same army size as a rebel group, the variable's value is 0.

conflict. Despite such a limitation, this variable captures some of the temporal variation of the capability gap between the government and the opposition during conflict (Gent 2008).[35]

I employ the two-stage probit least squares estimation method developed by Maddala (1983), which is designed to estimate simultaneous equations in which one of the endogenous variables is continuous, and the other is dichotomous (Keshk 2003).[36] This method facilitates the estimation of the simultaneous equations by creating instrumental variables for the endogenous variables and replacing the original endogenous variables with the instruments (Keshk 2003). The continuous variable equation is estimated via OLS, and the dichotomous variable equation via probit. Therefore, this method can be ideal for my empirical test of simultaneous relationships in which one variable is continuous and the other is dichotomous. My models are identified through the exclusion condition (Green 2000): each equation includes several exogenous variables that are excluded in the other equation.

Intervention Equation and Exogenous Variables

Intervention equations should contain exogenous variables that are likely to influence third-party intervention. I use conventional factors in external intervention: *ethno-religious war, democracy score, pre-existing opposing intervention, war intensity, contiguity, and the Cold War period*. Amongst them, three variables, pre-existing

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[35] Cunningham and his colleagues (2009) provide data for the relative rebel capability. However, their data are time-constant. Therefore, I measure the capability gap using time-varying government force size and time-constant rebel size, in a similar way to Gent (2008).

[36] There are many studies employing this two-stage estimation method. For example, Thies (2010) used this technique to examine the relationships between civil war onset and state capacity. Keshk and his colleagues (2004) investigated simultaneous causality between trade and conflict by using this method.

opposing intervention, ethno-religious war, and democracy score, are included in the

capability gap equation as well.

Table 4.1 Summary Statistics of Variables

Variable	Mean	Std. Dev.	Minimum	Maximum
Capability Gap	0.697	0.275	0	0.9996
Rebel Capability Ratio	0.190	0.210	0.0002	0.9901
Initial Rebel Capability Ratio	0.248	0.230	0.0002	0.9901
Any Intervention	0.265	0.442	0	1
Government-Biased Intervention	0.185	0.388	0	1
Government-Biased Intervention $_{t-1}$	0.166	0.372	0	1
Rebel-Biased Intervention	0.136	0.343	0	1
Rebel-Biased Intervention $_{t-1}$	0.117	0.321	0	1
Neutral Intervention	0.017	0.131	0	1
Neutral Intervention $_{t-1}$	0.012	0.109	0	1
Ethno-Religious War	0.644	0.479	0	1
Natural Resources	0.123	0.113	0.005	0.794
Rough Terrain	24.469	22.647	0	81
Democracy Score	-1.992	6.188	-10	10
GDP per capita (logged)	7.442	0.826	5.790	9.199
Population (logged)	9.802	1.341	4.521	13.624
War Intensity	1.624	4.076	0.005	48.544
Contiguity	3.866	2.070	0	10
Cold War	0.628	0.483	0	1

Note: 1. Many of these variables are also used for analyzing the effects of intervention on the hazards of war termination in a later section.
   2. $t-1$ denotes one year lagged variable.

Ethnic or religious war can increase or decrease the likelihood of external intervention. It can motivate foreign countries to support a group sharing ethnic identity (Carment et al. 1997). On the contrary, third parties might avoid intervening in ethno-religious war because deep grievances among ethnic or religious groups may reduce efficiency of intervention (Aydin 2010). The data for this dichotomous variable is based from Regan (2002).

The regime type of a civil war state can influence intervention decision because regime change or protection may be a goal of outside interveners (Aydin 2010). To control for this effect, I use democracy score at war onset, which is from the Polity IV project (Marshall et al. 2010).

Pre-existing intervention on behalf of one side can cause another intervention supporting the other side (Findley and Teo 2006; Gent 2008). Therefore, government- or rebel-biased intervention equation contains one year lagged rebel- or government-biased intervention, respectively. Neutral intervention equation does not include this variable.

War intensity is likely to affect intervention decision because more intensive war can increase the costs of intervention, cause an international security crisis, or increase human suffering. Hence, it can discourage or encourage third parties to intervene in civil war (Regan 2000; Findley and Teo 2006; Gent 2008). As a proxy of war intensity, I use the average number of fatalities per month of the conflict which is operationalized by Regan (2002).

States that share borders with more foreign countries are more likely to experience third-party intervention (Gent 2008). Therefore, I control for geographical *contiguity* which is measured by the number of foreign countries contiguous to a civil war

state by land or river. The measurement of contiguity is based on the COW dataset (Stinnett et al. 2002).

The structural change of the international system which is represented by the end of the *Cold War* can influence intervention decision (Regan 2000; Findley and Teo 2006). I control for this effect, using a dichotomous variable, the Cold War, which is coded 1 in every year before 1990.

This intervention equation is estimated with binary time series cross sectional data, and thus it is necessary to control for the temporal dependence among observations (Beck et al. 1998). To do so, I include the cubic polynomial $(t, t^2, and\ t^3)$ in my regression, which is proposed by Carter and Signorino (2010). Time (t) records the number of years elapsed since civil war onset or the last occurrence of intervention in a civil war.

Capability Gap Equation and Exogenous Variables

The capability gap equation uses conventional variables that are likely to influence belligerent groups' resource mobilization or fighting capabilities: *ethno-religious war, democracy score, pre-existing opposing or neutral intervention, natural resources, mountainous terrain, GDP per capita, and population.*

Identity-based rebel groups are better able to recruit soldiers and enhance their organizational structures to fight war (Sambanis 2001; Gates 2002), and thus one can expect that ethnic or religious war is likely to decrease the capability gap between the government and the opposition. Therefore, I include a binary variable, ethno-religious war, in the capability gap equation.

Regime type can affect how a country deals with its internal conflict. Autocracies tend to rely more on coercion than do democracies (Cunningham et al. 2009). This coercive policy can expand or shrink protest against a government, and in turn have an influence on the relative rebel capability, although there is no clear consensus about whether to increase or decrease the protest (see Francisco 1998). The regime type is measured by democracy score at civil war onset.

While a third-party support one side, the other state might assist opposite side and affect the capability gap between combatants. A neutral intervener can also influence the capability gap. Hence, it is necessary to include this opposite or neutral intervention in the capability equation. The inclusion of these variables, however, can produce another simultaneous causation with the capability gap. Thus, I use one year lagged opposing or neutral intervention so that it is not endogenous to the capability gap.

Natural resources can make a rebel group stronger by increasing its funds for arms purchase and making recruitment easier (Buhaug et al. 2009), and thus they are likely to play a role in reducing the capability gap.[37] To control for the effects of natural resources, I use primary resource export rates which are measured as a percentage of GDP. The data are acquired from Fearon (2005).

Rough terrain and larger population can also increase the relative capabilities of rebel groups because it can help them hide from government forces and maintain their ability to fight war (Fearon and Laitin 2003; Buhaug et al. 2009; Gent 2008). Therefore, they are likely to reduce the capability gap between the government and the opposition, compared to opposite conditions. As a proxy of rough terrain, I use mountainous terrain

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[37] While both the government and the opposition try to extract resources during civil war as implied by a competitive hunters model, natural resources tend to be more beneficial to rebel groups because they have fewer alternative finance sources than does the government (see Collier et al. 2004; Lujala 2010)

which is operationalized by Fearon and Laitin (2003). I measure population at war onset based on Gleditsch (2002).

Contrary to rough terrain and larger population, higher income level is likely to increase the capability gap because it is likely to decrease motives for citizens to be insurgents (Collier et al. 2004). This variable measures GDP per capita at war onset, based on Gleditsch (2002).

Empirical Findings and Discussion

Table 4.2 shows the results of two-stage estimation of the relationships between external intervention and the internal capability gap.[38] They, as expected, exhibit that there is significant reciprocal causation between the two variables. At the first stage where the intervention equation is estimated, I find that the capability gap has statistically significant and negative effects on the occurrence of each type of intervention. In other words, government-biased, rebel-biased, or neutral intervention is less likely to take place in civil war states where there is larger capability gap between two groups. This confirms Gent's (2008) finding that intervention decision is endogenous to the relative capabilities of combatants.

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[38] The instrument variables created for endogenous variables show overall good fit, which is denoted by their R^2 values (Staiger and Stock 1997). The two-stage estimation method developed by Maddala (1983) does not produce robust standard errors, but it is known that there is little difference between standard errors by the Maddala (1983) procedure and White (1980)/Newey and West (1987) robust standard errors when they are compared through the same procedure (Keshk et al. 2004; Thies 2010).

Table 4.2 Two-Stage Estimation of External Intervention and Internal Capability Gap

Variables	Model 1: Gov.-Biased Int.	Model 2: Reb.-Biased Int.	Model 3: Neutral Int.
	Intervention Equations		
Capability Gap ¥	-3.113 (0.758)***	-1.183 (0.599)**	-4.384 (1.721)**
Ethno-Religious war	-0.547 (0.120)***	0.062 (0.123)	0.242 (0.334)
Democracy	-0.008 (0.010)	0.004 (0.010)	0.024 (0.030)
Gov.-Biased Int. $_{t-1}$		0.363 (0.139)***	
Reb.-Biased Int. $_{t-1}$	0.124 (0.171)		
War Intensity	0.003 (0.014)	-0.008 (0.012)	-0.002 (0.021)
Contiguity	0.003 (0.030)	0.102 (0.033)***	0.026 (0.096)
Cold War	0.203 (0.127)	0.156 (0.129)	-0.701 (0.291)**
	Capability Gap Equations		
Gov.-Biased Int. ¥	-0.006 (0.003)**		
Reb.-Biased Int. ¥		-0.037 (0.022)*	
Neutral Int. ¥			-6.08e-06 (1.09e-06)***
Ethno-Religious war	-0.019 (0.017)	-0.010 (0.017)	-0.018 (0.016)
Democracy	0.0006 (0.001)	-0.0006 (0.001)	-0.001 (0.001)
Gov.-Biased Int. $_{t-1}$		-0.026 (0.023)	-0.022 (0.022)
Reb.-Biased Int. $_{t-1}$	-0.077 (0.024)***		-0.072 (0.024)***
Neutral Int. $_{t-1}$	-0.266 (0.069)***	-0.256 (0.069)***	
Natural Resources	-0.001 (0.072)	-0.001 (0.073)	0.008 (0.070)
Rough Terrain	-0.0003 (0.0003)	-0.0004 (0.0004)	-0.0003 (0.0003)
Population	0.073 (0.006)***	0.072 (0.008)***	0.082 (0.006)***
GDP per capita	0.021 (0.009)**	0.031 (0.011)***	0.040 (0.009)***
N	1082	1082	1082

Note: 1. Coefficients for the cubic polynomial $(t, t^2, and\ t^3)$ in intervention equations and constants are not shown here.
 2. Standard errors are reported in parentheses.
 3. ¥ denotes an instrumental variable.
 4. $t-1$ means one year lagged variable.
 5. *significant at 10%; **significant at 5%; ***significant at 1%.

The second stage analysis estimating the capability gap equation shows that all types of intervention have significant and negative impacts on the capability gap between the government and the opposition. In other words, either biased or neutral intervention is likely to reduce the capability gap between two groups. The results support H_{BGap} which argues that either pro-government or pro-rebel intervention is likely to reduce the capability gap between the two groups (or have no significant impact on the gap). Even though biased interveners desire to make their protégé superior to the other group, a contribution that they make is only to reduce the capability gap.

The unintended consequences of biased intervention are associated with interveners' strategic target selection and backlash effects. While a top-down approach focusing on interveners' goals and costs helps understand why third parties go into civil wars where the capability gap between two competing groups is smaller, a bottom-up view considering the responses from warring parties and their domestic patron to foreign intervention illuminates why biased intervention produces backlash. As a result, the empirical findings, along with the equilibria and simulation results of my dynamic model, present that biased interveners are likely to break an evolutionary process of natural selection in which one of the two competing groups becomes a dominant power over time in a system, and are likely to make the competition tighter.

The test results, however, do not support H_{NGap} which contends that neutral intervention is likely to widen the capability gap between two conflicting groups. An empirical finding is that neutral interveners tend to reduce the capability gap. That the government's force size is larger than the opposition's in most real cases helps

understand this unexpected finding.[39] An implication from my dynamic model is that a neutral intervener is likely to increase the relative capability of a group having competitive advantages (i.e. higher natural growth rates (larger political support from citizens) or lower decay rates by competition (stronger resolve and faith)). If this group tends to be the opposition rather than the government in the real world, the empirical finding may match with my dynamic model's implication. In other words, the unexpected finding may be because neutral intervention increases the relative capability of a rebel group that has competitive advantages but has smaller force size than a government, and thereby decreasing the capability gap between the two groups.

Considering that the rebel's army size is mostly smaller than the government's in real cases and thus the reduction of the capability gap may effectively means the increase of the relative capability of a rebel group, I perform an additional two-stage test. For this test, I employ the normalized rebel capability ratio as an endogenous variable instead of the capability gap.[40]

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[39] In my dataset which uses conflict and year as a unit of analysis, the number of observations in which rebel's force size is larger than government's is 106 (9.8%) out of 1082 total observations, and tied ones are 6 (0.55%).

[40] The normalized rebel capability ratio is measured by the following computation: $\frac{Rebel\ army}{Government\ army + Rebel\ army}$. The correlation between this variable and the capability gap measured by the absolute value of the normalized capability difference is -0.729.

Table 4.3 Two-Stage Estimation of External Intervention and Rebel Capability Ratio

Variables	Model 4: Gov.-Biased Int.	Model 5: Reb.-Biased Int.	Model 6: Neutral Int.
	Intervention Equations		
Rebel Capability Ratio ¥	4.021 (0.737)***	1.572 (0.617)**	4.012 (1.696)**
Ethno-Religious war	-0.600 (0.120)***	0.052 (0.123)	0.337 (0.326)
Democracy	-0.006 (0.010)	0.006 (0.010)	0.021 (0.030)
Gov.-Biased Int. $_{t-1}$		0.335 (0.139)**	
Reb.-Biased Int. $_{t-1}$	0.265 (0.157)*		
War Intensity	-0.0006 (0.013)	-0.011 (0.012)	0.005 (0.019)
Contiguity	0.031 (0.030)	0.118 (0.034)***	0.024 (0.097)
Cold War	0.379 (0.130)***	0.222 (0.130)*	-0.493 (0.294)*
	Rebel Capability Ratio Equations		
Gov.-Biased Int. ¥	0.004 (0.002)**		
Reb.-Biased Int. ¥		0.022 (0.013)*	
Neutral Int. ¥			4.38e-06 (7.81e-07)***
Ethno-Religious war	0.022 (0.012)*	0.017 (0.012)	0.024 (0.011)**
Democracy	0.0006 (0.0009)	0.001 (0.001)	0.002 (0.0009)**
Gov.-Biased Int. $_{t-1}$		0.020 (0.016)	0.028 (0.015)*
Reb.-Biased Int. $_{t-1}$	0.006 (0.017)		-0.004 (0.017)
Neutral Int. $_{t-1}$	0.145 (0.049)***	0.130 (0.048)***	
Natural Resources	0.121 (0.052)**	0.120 (0.051)**	0.107 (0.050)**
Rough Terrain	-0.0008 (0.0002)***	-0.0006 (0.0003)**	-0.0008 (0.0002)***
Population	-0.072 (0.005)***	-0.070 (0.006)***	-0.077 (0.004)***
GDP per capita	-0.038 (0.006)***	-0.044 (0.007)***	-0.051 (0.006)***
N	1082	1082	1082

Note: 1. Coefficients for the cubic polynomial $(t, t^2, and\ t^3)$ in intervention equations and constants are not shown here.
    2. Standard errors are reported in parentheses.
    3. ¥ denotes an instrumental variable.
    4. $t-1$ means one year lagged variable.
    5. *significant at 10%; **significant at 5%; ***significant at 1%.

The test results confirm that expectation (see Table 4.3). I find that whether external interveners have pro-government, pro-rebel, or neutral positions, they are likely to increase the rebel capability ratio.[41] This result, along with the findings from the capability gap equations (in Table 4.2), suggests that third-party interveners, regardless of their stance, are likely to decrease the capability gap between two groups by promoting the relative growth of a rebel group, whether or not they intend to do so. Also, the results of intervention equations once again show that intervention decisions are endogenous to the distribution of power between a government and a rebel group. As a rebel group more seriously threatens a government, the likelihood of third-party intervention increases, which supports Gent's (2008) finding.

The two-stage test results help us gain better understanding of how government- or rebel biased interveners affect the relative capabilities of combatants, by addressing the effects of selective intervention. Rebel-biased interveners are less likely to backfire and more likely to be effective to increase their protégé's capability than do government-biased ones, although they are likely to fail to make the rebel dominant over the government. Government-biased interveners are likely to produce more backlashes, and thus they are likely to increase the relative capability of the opposition, unintentionally. This, however, does not necessarily mean that a pro-government increases the risk of rebel victory, because it does not make a rebel group superior to a government.

Tables 4.2-3 show that other factors can influence intervention decisions or the distribution of power between the government and the opposition. The first-stage estimation shows that identity war, pre-existing opposing intervention, contiguity, and the

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[41] When I use another proxy of the relative rebel capability, the logged relative rebel capability: $ln(\frac{Rebel\ army}{Government\ army})$, the two-stage estimation results are effectively the same.

Cold War have statistically significant effects on government-biased, rebel-biased, or neutral intervention. Identity war associated with ethnic or religious issues is less likely to be a target by foreign powers on behalf of a government side, while it has no significant impacts on the likelihood of intervention supporting a rebel side or having a neutral position. The prospects for government- or rebel-biased intervention are likely to increase when there already exist opposing interveners, which is consistent with prior studies' findings (e.g., Findley and Teo 2006). Rebel-biased intervention is more likely to occur when a civil war state shares its border with many countries, which confirms previous findings (Gent 2008). In the Cold-War period, rebel-biased intervention is more likely to take place (only in Table 4.3), but neutral intervention is less likely. The level of democracy of civil war states and war intensity are unlikely to be a significant predictor of external intervention.

At the second stage, ethno-religious war does not have significant effects on the capability gap between belligerent groups (Table 4.2), but it is positively associated with the rebel capability ratio (Table 4.3). That is, a rebel group is more likely to be able to increase its relative capability in an identity war, as expected (Sambanis 2001; Gates 2002), although the war is unlikely to significantly contribute to making the rebel preponderant over a government. The effect of ethno-religious war, however, is not statistically significant when we consider the effects of rebel-biased intervention (Model 5 in Table 4.3).

The level of democracy and pre-existing government-biased intervention are likely to be very weekly associated with the distribution of power between a government and a rebel group. They have statistically significant effects only in Model 6, increasing

the rebel capability ratio. Pre-existing rebel-biased intervention does not have statistically significant effects on the rebel capability ratio, but it is likely to positively contribute to the reduction of the capability gap between two groups. Pre-existing neutral intervention is strongly associated with the internal power distribution. It is likely to decrease the capability gap between a government and a rebel group by increasing the rebel capability ratio.

The impacts of natural resources and GDP per capita are in general in the directions that are expected. While natural resources do not have significant effects on the capability gap between combatants, they are likely to significantly increase the rebel capability ratio, supporting previous studies' findings (Buhaug et al. 2009, etc.). Higher income level measured by GDP per capita is likely to be a factor which makes the government preponderant over the opposition. GDP per capita tends to widen the capability gap between a government and a rebel group by decreasing the rebel capability ratio. This also upholds previous studies' propositions (e.g., Collier et al. 2004). However, the effects of rough terrain and population are in opposite directions that are expected. Both factors tend to decrease the rebel capability ratio. In particular, larger population is likely to be a critical condition favorable to a government side because it is likely to decrease the rebel capability ratio and increase the capability gap between a government and a rebel group.

The Effects of External Intervention on the Duration and

Outcomes of Civil War

Hypotheses—$H_{GBOutcome}$, $H_{RBOutcome}$, and $H_{NOutcome}$—in Chapter 3 specify how third-party intervention influences the hazard of each type of war termination. In order to test those hypotheses, I employ the competing risks Cox model that is an event history model. The competing risks framework is effective to analyze the likelihood and timing of more than one type of events (Box-Steffensmeier and Jones 2004), which are the focus of my hypotheses. Using that estimation method, we can infer how fast civil war terminates by government victory, rebel victory, or a negotiated settlement.[42] Recent examples that use the competing risks Cox model to investigate civil war duration and outcome include studies by Gent (2008) and Balch-Lindsay and his colleagues (2008).

Dependent Variables

The dependent variable is elapsed time until civil war ends through a government victory, a rebel victory, or a negotiated settlement, which is measured in months. While Regan (2002) does not report the outcomes of civil war, Gent (2008) records termination types of civil wars which are included in Regan's (2002) data. Gent's (2008) data for civil war outcomes are collected from Doyle and Sambanis's (2000) data, the COW Intra-state war dataset (Sarkees 2000), *Keesing's Record of World Events*, and other historical sources.

Following Gent (2008), war termination types are classified into three categories: a government victory, a rebel victory, or a negotiated settlement. As a result, my dataset

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[42] Although my hypotheses focus on the hazards of government victory and rebel victory, I analyze the hazard of negotiated settlements in order to provide more information.

include 49 cases of government victory, 24 rebel victories, 38 negotiated settlements, 2 undecided outcomes,[43] and 28 ongoing civil wars which are right-censored at December 1999 (the ending point of the dataset), and record time until civil war terminates. The average duration of civil wars with the three decided outcomes is about 57 months. The mean time differs with the outcomes. It is about 31 months for a government victory, about 61 months for a rebel victory, and about 88 months for a negotiated settlement.

Independent Variables

Independent variables that are employed for testing the hypotheses are three types of intervention: *government-biased intervention, rebel-biased intervention, and neutral intervention*, which were considered to be endogenous variables in an earlier section. These variables are not mutually exclusive. In other words, a civil war can experience more than one type of intervention at the same time. Also, I add another variable of intervention, *any intervention*, in order to examine the differences in two scenarios, when foreign powers intervene in a civil war and when they do not engage in any intervention in the civil war. When this dichotomous variable is coded 0, it means that neither a biased nor neutral third-party intervenes in a civil war.

My hypotheses about the duration and outcome of civil war were developed upon an existing proposition that the distribution of power between combatants is significantly associated with war duration and outcomes. Here, I empirically examine that proposition about the effects of the distribution of power. To do so, I employ *rebel capability ratio*, which is a variable used in an earlier section. The use of this variable makes it possible

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[43] The two cases are civil wars in Republic of Vietnam (1960 - 1965) and Philippines (1971 - Feb. 1999).

for us to empirically understand how the rebel capability ratio influences the risks of a government victory, a rebel victory, and a negotiate settlement.

Control Variables

I control for several conditions of civil war or civil war states, which may affect the duration and outcome of civil war. They are *initial rebel capability ratio, ethno-religious war, democracy, natural resources, rough terrain, population, GDP per capita, and war intensity*. While initial rebel capability as a time constant variable does not have reciprocal causation with external intervention, it can facilitate interveners' decision on intervention by indicating that it is easy or hard for them to make a significant change in the duration and outcome of civil war. Including this variable into the models for hypotheses testing enables us to control for the effects caused by interveners' target selection. I measure the initial rebel capability ratio by observing a rebel capability ratio at a year of civil war onset. This variable has a strong correlation (0.794) with the rebel capability ratio which is a time varying covariate, and thus their effects are estimated in separate models. I expect that the initial rebel capability ratio is likely to be associated with higher risk of rebel victory and lower risk of government victory.

The inclusion of the other variables is justified by findings of previous studies of civil war duration and outcome. In richer countries, a civil war is more likely to quickly end in a military victory or a negotiated settlement (Balch-Lindsay et al. 2008; Cunningham et al. 2009). Thus, I include GDP per capita in my models. Larger population is likely to be a predictor of longer civil war (Collier 2004; Cunningham et al. 2009). When a civil war is associated with ethnic or religious issues, it tends to last

longer (Regan and Aydin 2006) and it is likely to harder for a rebel group to win the civil war (DeRouen and Sobek 2004). Democracy tends to make a civil war longer (Cunningham et al. 2009; Buhaug et al. 2009; Cunningham 2010), but it is likely to reduce the time until a negotiated settlement (Gent 2008). Natural resources are likely to be associated with longer war (Buhaug et al. 2009; Lujala 2010), and rough terrain tends to decrease the hazard of a negotiated settlement (Gent 2008). Many previous studies have shown that war intensity or war costs are positively associated with shorter war and military victory (Balch-Lindsay and Enterline 2000; Regan and Aydin 2006; Gent 2008; Balch-Lindsay et al. 2008). Therefore, I add war intensity to the list of control variables. All these variables are measured in the same way as a prior section.

Empirical Findings and Discussion

The use of the Cox model requires checking whether the data violate a proportional hazard assumption. The results of diagnostic tests show that models 7-9 do not satisfy the assumption. Following Box-Steffensmeier and Jones (2004)'s advice, I add an interaction term between an offending variable and a function of time (*Ethno-religious war * Ln(time)*) to those models. The Cox model provides estimated coefficients and hazard ratios regarding the effects of independent variables. A statistically significant and positive coefficient indicates that a variable is likely to increase the hazards of war termination, that is, it tends to decrease time until war termination. A significantly negative coefficient implies the opposite effects. Hazard ratios more than 1 indicate the increase of the risks of war termination, and those less than 1 denote the decrease of the war termination risks.

Table 4.4 Competing Risks Cox Model of Civil War Duration and Outcome

Variable	Model 1 Gov. Vic.	Model 2 Gov. Vic.	Model 3 Gov. Vic.	Model 4 Rebel Vic.	Model 5 Rebel Vic.	Model 6 Rebel Vic.	Model 7 Neg. Set.	Model 8 Neg. Set.	Model 9 Neg. Set.
Rebel Capability Ratio	-1.492* (0.768)			1.601* (0.912)			0.504 (0.741)		
Any Intervention		-0.938** (0.395)			-0.293 (0.562)			-0.279 (0.327)	
Gov.-Biased Intervention			-0.403 (0.411)			-1.065* (0.628)			-0.862** (0.403)
Rebel-Biased Intervention			-1.158** (0.553)			0.646 (0.546)			0.204 (0.472)
Neutral Intervention			-33.373*** (0.516)			1.164 (0.895)			0.268 (0.788)
Initial Rebel Capability Ratio		-1.302* (0.738)	-1.478* (0.779)		0.705 (0.790)	0.935 (0.891)		0.107 (0.673)	0.070 (0.636)
Ethno-Religious War	-0.357 (0.301)	-0.375 (0.304)	-0.338 (0.308)	-0.461 (0.409)	-0.518 (0.420)	-0.819* (0.452)	7.713** (3.729)	7.647** (3.732)	7.417* (3.858)
Democracy	-0.022 (0.027)	-0.018 (0.029)	-0.015 (0.028)	-0.066 (0.049)	-0.062 (0.046)	-0.079 (0.054)	0.117*** (0.029)	0.118*** (0.029)	0.112*** (0.028)
Natural Resources	-0.704 (1.399)	-0.849 (1.508)	-0.593 (1.594)	-1.538 (1.828)	-1.367 (1.772)	-1.385 (1.786)	-2.446* (1.289)	-2.383* (1.287)	-2.241* (1.266)
Rough Terrain	-0.002 (0.006)	-0.005 (0.006)	-0.006 (0.006)	0.0002 (0.008)	-0.003 (0.008)	0.0004 (0.009)	-0.028** (0.011)	-0.029*** (0.011)	-0.030*** (0.011)
Population	-0.151 (0.127)	-0.257* (0.136)	-0.232* (0.133)	-0.316 (0.254)	-0.423 (0.264)	-0.412 (0.287)	-0.727*** (0.147)	-0.771*** (0.149)	-0.768*** (0.147)
GDP per capita	-0.220 (0.210)	-0.284 (0.214)	-0.302 (0.204)	-0.032 (0.318)	-0.086 (0.325)	-0.094 (0.383)	0.015 (0.251)	-0.007 (0.257)	-0.031 (0.253)
Intensity	0.047*** (0.017)	0.060*** (0.019)	0.066*** (0.015)	0.062** (0.027)	0.071*** (0.026)	0.069*** (0.019)	0.022 (0.034)	0.030 (0.032)	0.033 (0.030)
Ethno-Religious War *Ln(time)							-1.758** (0.795)	-1.755** (0.794)	-1.715** (0.821)
N	1082	1086	1086	1082	1086	1086	1082	1086	1086

Note: Coefficients are reported. Robust standard errors are in parentheses. *significant at 10%; **significant at 5%; ***significant at 1%.

Table 4.4 reports the test results. Rebel capability ratio is likely to significantly influence the hazards of a government victory or a rebel victory, although it does not have a statistically significant effect on a negotiated settlement. As the rebel capability ratio increases, it is likely to take shorter time for a rebel group to win a military victory, and longer time for a government to win a victory. This finding supports a proposition that a civil war process is a function of the distribution of power between combatants (Elbadawi and Sambanis 2000; Gent 2008, etc).

While a variable, any intervention, has a significant and negative effect on the hazard of a government victory, it has no significant impact on the risks of a rebel victory and a negotiated settlement. When a civil war involves outside interveners, the risk of a government victory is likely to drop by 60.9% (see Table 4.5). In other words, in the absence of outside interveners, a government is likely to have more opportunity to win a military victory than in the presence of interveners. The effects of intervention, however, can differ with its methods.

The results of the models 3, 6, and 9 show the effects of government-biased intervention, rebel-biased intervention, and neutral intervention. Government-biased intervention does not have significant impacts on the risk of a government victory, but it has significant and negative effects on a rebel victory. This result strongly upholds $H_{GBOutcome}$ deduced by a dynamic model. When external interveners assist a government, they are likely to fail to make a significant contribution to a fast victory for the government, compared to when no third-party supports the government. On the other hand, they are likely to successfully delay time to a rebel victory. The hazard ratio reported by Model 6 is 0.345 (see Table 4.4), which means that government-biased

interveners are likely to decrease the risk of a rebel victory by 65.5%. Even though government-based interveners reduce the capability gap between two groups by backfiring, they still play a role in retarding a rebel victory. Pro-government intervention is also likely to decrease the hazards of a negotiated settlement. In other words, government-biased interveners tend to encourage both groups to continue fighting and weaken their motives to cooperate with each other to make an agreement.

Table 4.5 Substantive Effects of Key Independent Variables: Hazard Ratios of Civil War Outcomes

Variable	Model 1: Gov. Victory	Model 2: Gov. Victory	Model 3: Gov. Victory	Model 4: Rebel Victory	Model 6: Rebel Victory	Model 9: Neg. Settlement
Rebel Capability Ratio	0.225			4.957		
Any Intervention		0.391				
Gov.-Biased Intervention			No Sig.		0.345	0.422
Rebel-Biased Intervention			0.314		No Sig.	No Sig.
Neutral Intervention			1.97e-20		No Sig.	No Sig.

Note: Hazard ratios are reported. No Sig. indicates that a variable does not have statistically significant effects at 10% level.

Rebel-biased intervention has the opposite effects to government-biased intervention. While it has no statistically significant impact on a rebel victory, it is likely to significantly decrease the risk of a government victory by 68.6%. This result supports $H_{RBOutcome}$. When a pro-rebel intervener is involved in a civil war, it is likely to take

longer time for a government to win a military victory, compared to when there is no rebel-biased intervener. Like a government-biased intervener, a rebel-biased intervener is likely to fail to significantly contribute to its protégé's fast victory. Earlier empirical findings help understand this result. A rebel-biased intervener can increase the relative rebel capability and decrease the capability gap, and thus it can delay time until a government victory. However, the increase of the relative rebel capability by the support from the biased-intervener is unlikely to be enough for the rebel to more quickly defeat the government, and thus the pro-rebel intervener fails to contribute to a fast rebel victory. My dynamic model explains that the reason is associated with backlash and interveners' costs.

The effect of neutral intervention, however, does not support $H_{NOutcome}$ which argues that neutral interveners are likely to increase the risks of a military victory by either a government or a rebel group. The test results show that neutral intervention has significant and negative effects on the risks of a government victory. In other words, when a neutral intervener is involved in a civil war, it is likely to take longer time for a government to win a military victory. Neutral intervention has positive but statistically insignificant impact on the risks of a rebel victory or a negotiated settlement.

The simulation results in Chapter 3 and the empirical test results in an earlier section in this chapter can help understand the unexpected results. The simulations presented that when a neutral third-party intervenes in a civil war, it is likely to positively contribute to the relative growth of either a government or rebel group that has competitive advantages. The empirical test results exhibited that neutral intervention is likely to decrease the capability gap by enhancing the capability of a rebel group.

Therefore, the estimated effects of neutral intervention on the risks of war outcomes may be because a neutral intervener unintentionally increases the relative capability of a rebel group which has competitive advantages and reduces the risk of a government victory, but its impacts are not enough to significantly help a rebel group win a victory more swiftly.

By looking into the data used for the tests, we can also comprehend the unexpected findings about neutral intervention. Whereas there are five civil wars in which neutral intervention is associated with a rebel victory or a negotiated settlement (Cyprus in 1964, Pakistan in 1971, Rwanda 1994, Bosnia and Herzegovina in 1994, and Congo in 1997), there is no case in which neutral intervention is related to a government victory (Regan 2002; Gent 2008). This observation reinforces that neutral intervention is likely to significantly reduce the risk of a government victory. Of the five cases, wars in Pakistan, Rwanda, and Congo ended in rebel victory relatively quickly. Their average duration is about 21 months. The other two conflicts also relatively swiftly ended in a negotiated settlement. Their mean duration is about 28 months. The data, however, report that with the exception of Bosnia and Herzegovina, the terminations of the four civil wars are associated with government- or rebel-biased intervention as well as neutral one.[44] This data description helps understand why neutral intervention does not have independent effects on the risks of a rebel victory or a negotiated settlement.

Figure 4.1 presents how the hazards of a government or rebel victory change over time. An interesting pattern is that while the hazard of a government victory is highest in

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[44] For example, in the Rwandan civil war, while the UN deployed neutral peacekeepers, France supported the government. The Rwandan war ended in a rebel victory. In the Congo civil war, France engaged in neutral intervention, and Angola undertook rebel-biased intervention. The war outcome was a rebel victory. In the Cyprus civil war, the UN engaged in neutral intervention, and Turkey supported the opposition. The Cyprus war ended in a negotiated settlement. These data are based on Regan (2002).

initial periods of civil war, it tends to decrease over time. The hazard goes to 0 at around

150 months, and rebound at around 190 months. The decreasing tendency of the hazard

of a government victory over time is somewhat consistent with prior studies' findings

(Gent 2008). The hazard of a rebel victory also has an interesting pattern that the risk of a

rebel victory is relatively steady over time until around the 230th month when the hazard

reaches 0, and after that time it rapidly increases. The patterns that the figure depicts

imply that as civil war last longer (probably more than 150 or 200 months), a rebel group

is likely to have a better opportunity to win a military victory than does a government.

Figure 4.1 Estimated Hazards of Government / Rebel Victory over Time
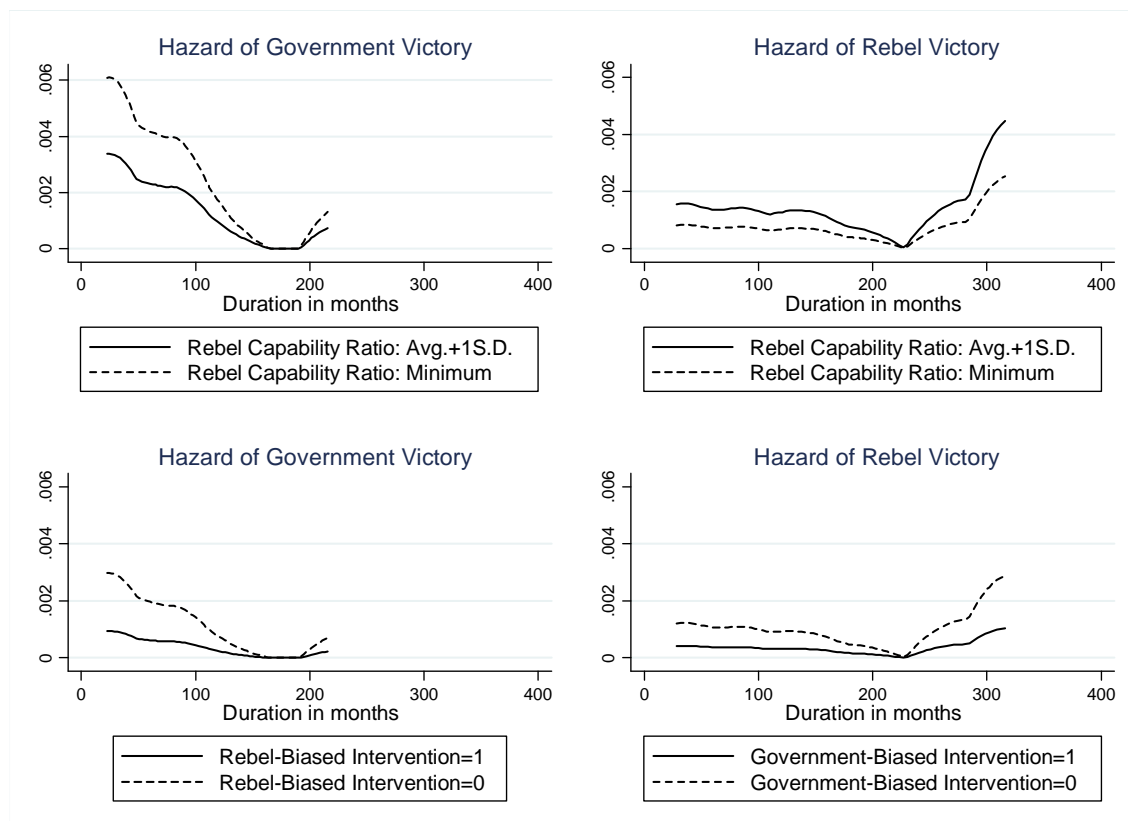
Note: For the rebel capability ratio, one standard deviation below the mean is less than 0.

Besides outside intervention, other variables can also influence the duration and outcome of civil war. Initial rebel capability ratio is likely to decrease the duration until a government victory. That is, the more rebel capability at the time of civil war onset, the less likely a government is to quickly win a military victory. In ethno-religious war, a rebel group is less likely to swiftly win a victory, which supports existing findings (e.g., DeRouen and Sobek 2004), and combatants are more likely to quickly reach a negotiated settlement. Although the level of democracy of a civil war state is unlikely to be associated with a fast government or rebel victory, it is likely to be a significant predictor of a fast negotiated settlement. The more democratic, the more likely combatants are to reach an agreement to stop war. This result is consistent with previous studies' findings (e.g., Gent 2008). On the other hand, natural resources, rough terrain, and population are likely to delay time to a negotiated settlement. A reason for this finding may be that these factors motivate both combatants to continue fighting by providing shelters or finances for arms purchase or recruitment (Fearon and Laitin 2003; Buhaug et al. 2009; Gent 2008). The test results show that war intensity is a strong predictor of a fast government victory or a rebel victory, which support prior studies' findings (e.g., Gent 2008).

Conclusion

In this chapter, I have sought to empirically test the hypotheses that are developed by building and analyzing a dynamic model in Chapter 3. Two-stage estimation results show that third-party interveners in civil wars, whether they have biased or neutral stands, are likely to narrow the capability gap between combatants by enhancing the relative capability of a rebel group. The findings imply that rebel-biased interveners are relatively

effective, although they are likely to fail to make the rebel group preponderant over the government. Government-biased interveners are likely to have consequences contrary to their intention: shifting the balance of power in favor of a government. While neutral interveners intend to manage the distribution of power between belligerent groups to help them reach a peace agreement, a rebel group is likely to have chance to increase its relative capability.

These empirical test results, along with the analyses of my dynamic model, imply that outside intervention is unlikely to significantly contribute to a fast military victory because it decreases the capability gap between a government and a rebel group, although it tends to increase the rebel capability ratio. This implication is supported by the test results regarding war duration and outcome. The results present that both types of biased interveners are likely to fail to significantly contribute to a fast victory for their protégé. What they can do is likely to reduce the risk of a military victory by their protégé's rival. Neutral interveners, regardless of their intention, are likely to delay time until a government victory. As a result, it can be said that no third-party is likely to significantly decrease time to a military victory or a negotiated settlement.

The empirical findings provide implication for policy makers who are involved in civil war intervention. The UN and other international humanitarian organizations have increasingly emphasized that the international community has obligation to protect people suffering from civil conflict, as represented by an emerging doctrine, the Responsibility to Protect. However, my findings imply that external intervention tends to fail to reduce the duration of civil war, and result in a military stalemate. Moreover, the lack of a military victory might make post-war recovery more difficult, which will be

discussed in Chapter 5. If so, is there no way for the international community to

positively contribute to a fast conflict resolution and protect people suffering from

conflict? Should we remain bystanders? This study suggests that the international

community should more prudently make a decision on civil war intervention, even when

it has humanitarian causes. However, if we see civil war and outside intervention with a

bottom-up view and consider the causes of the unintended consequences of intervention,

we can find some possible ways for humanitarian interveners to contribute to a fast

conflict resolution, which will be discussed in Chapter 6.

CHAPTER 5

INTERVENTION AND POST-CIVIL WAR

DEVELOPMENT

Civil war impoverishes citizens' lives. It does not only produce a large number of casualties, wounded, and refugees, but also destroys institutions and infrastructures for the provision of basic public goods, such as public health and elementary education (Ghobarah et al. 2003, 2004; Lai and Thyne 2007; Hoddie and Smith 2009; Carlton-Ford and Boop 2010; Iqbal 2010). Whereas civil war is a process of destruction, "the aftermath of war is a period of recovery (Chen et al. 2008, 82)." Despite devastated conditions, citizens' quality of life tends to gradually improve after the end of war (Chen et al. 2008). However, the degrees of improvement differ with countries. We can see the differences by observing infant mortality rates of post-war states. While infant mortality in Jordan dramatically decreased from 71.6 per 1,000 live births to 45.9 during 10 years after civil war (1971-81), the Democratic Republic of Congo's infant mortality rate slowly decreased from 128 to 117.3 during a post-war decade (1979-89). Zimbabwe's infant mortality rate even increased from 50.2 to 69.6 for a post-war decade (1988-1998).[45]

Why do some countries succeed in improving physical quality of life (QOL) after civil war, but others do not? What explains the differences in post-war social development? Several intrinsic characteristics of civil war or civil war states, such as war costs, population, and ethnic fractionalization, can influence post-war physical well-being (Ghobarah et al. 2003, 2004; Lai and Thyne 2007), but I propose that third-party involvement in civil war can also make differences in post-war well-being. Extant

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[45] Infant mortality rate data is from the World Bank Development Indicators.

literature shows that civil war interveners typically attempt to affect post-war peace and governmental policy as well as the outcome of civil war (e.g., Paris 2004; Pugh 2004; Doyle and Sambanis 2006; Bueno de Mesquita and Downs 2006; Fortna 2008; Howard 2008; Gent 2008), whether they seek their own interests or humanitarian objectives. I extend the literature by investigating how civil war intervention influences the improvement of post-war QOL. To do so, I consider two causal paths linking civil war intervention to post-war QOL: intervention types reflecting interveners' motives and civil war outcomes determined by interveners.

As demonstrated in Chapter 2, civil war intervention can be motivated by self-interest or humanitarian concerns. It is hard to know interveners' sincere motives, but they can be uncovered by the methods of intervention, such as unilateral or multilateral intervention. One can speculate that self-interest-based unilateral intervention may have different effects on post-war development than multilateral intervention through the Unites Nations (UN), which I will discuss and test in the sections following. How civil war ends can also influence post-war development. A military victory by one side tends to make a post-war state more stable than does a negotiated settlement (Wagner 1993; Licklider 1995; Fortna 2004a; Toft 2010). While this existing finding forms an expectation that a decisive victory is likely to promote post-war well-being, that foreign powers often influence war outcomes induces one to explore the differences between the consequences of a military victory supported by third parties and those independent of them.

Surveying post-war development, I focus on the improvement of physical quality of life, instead of economic growth. Prior studies of post-conflict development have

mainly used Gross Domestic Product (GDP) or GDP per capita as an indicator of development (e.g., Collier 1999; Kang and Meernik 2005), but doing so can narrow the concept of development to production or growth (Morris 1979; Emizet 2000). A widely recognized concept of development "consists of growth plus gradual and sustained improvements in the social system (Pourgerami 1992, 365)." This definition implies that development should cover the improvement of institutional arrangement and distribution as well as economic growth, and needs to be understood in terms of citizens' social well-being (Morris 1979; Pourgerami 1992). By examining citizens' quality of life as a broader concept of development, I extend understanding of post-war development.[46]

Investigation of the relationship between external intervention and post-war well-being may have important meaning in terms of the possibility of international state-building in fragile states which a growing number of scholars and practitioners have paid attention to. While some of them argue that foreign authorities including the UN should and can play a positive role in the reconstruction of war-torn states (e.g., Krasner 2004; Doyle and Sambanis 2006), others present skeptical views on the role (e.g., Pugh 2004; Bueno de Mesquita and Downs 2006). When a state cannot provide basic public services related to citizens' QOL, it loses its legitimacy and faces the risk of recurring conflict and state-failure (Walter 2004; Rotberg 2004; Bates 2008). This study can therefore have implications for policy makers who are involved in post-conflict state-building.

In the first section of this chapter, I discuss the intervention literature to link interveners' motives and goals to post-war QOL, and hypothesize the relationships between intervention types revealing interveners' motives and post-war QOL. Second, I

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[46] I use the terms, the improvement of QOL (wellness or well-being) and social development, interchangeably.

review the literature on civil war outcome and its post-war consequences, and suggest hypotheses about the relationships among third-party intervention, civil war outcome, and post-war well-being. In the third section, I empirically test my hypotheses against data for post-war years of states that have experienced civil war since World War II. For the empirical test, I estimate the baseline prospect for post-war QOL, and then the effects of intervention types and civil war outcomes, considering the effects of target selection by interveners. Fourth, I show the test results, and discuss them. Finally, I summarize key findings and conclude with implications of this study.

Motives of Intervention, Methods, and

Post-War Development

The discussion and findings of Chapter 2 show that the types of intervention are closely associated with interveners' motives. When foreign powers intervene in civil war to save lives or reduce human suffering, they are likely to engage in multilateral intervention through the UN. In doing so, they can justify their claims of humanitarian motivation. When strategic interests are at stake, they tend to undertake unilateral intervention to preserve or expand their influence on target states, or make a compromise for multilateral intervention if they can share the interests. These findings demonstrate that while unilateral intervention is a clear indicator for self-seeking interveners, multilateral interveners might either make efforts to reduce human hardship or aim at their own interests. I discuss how each type of intervention is likely to influence post-war well-being. To do so, I focus on two causal mechanisms through which intervention influences post-war QOL: governmental accountability and available resources.

Unilateral Intervention and Post-War Development

From the period of ancient Greece, intervention has been an important foreign policy tool to protect or expand interveners' self-interest, like war and diplomatic pressure (Morgenthau 1967). Through intervening in the internal affairs in other countries, a third-party can exert influence on the target states and manipulate their behavior to expand its own national interests. In other words, the traditional purpose of intervention is the preservation or expansion of influence for self-interest (Singer 1963; Lemke and Regan 2004). To the extent that there is no mutual interests or incentives for compromise with other potential interveners, states undertake unilateral intervention to gain their own interests, instead of multilateral intervention through the UN.

This affirmation about the purpose of unilateral intervention is reinforced by realist theories about state action. Realism presents that international relations are fundamentally competitive and states "behave purposively in the pursuit of power and material well-being (Mastanduno et al. 1989, 459)." A basic goal of states, survival, can be achieved by pursuing more power and wealth. States accumulate them through external extraction besides internal mobilization. To do so, they intend to influence the behavior of other countries and access to their resources (Lake 1988; Mastanduno et al. 1989). Waltz (1979, 106) argues that states have motives to widen the scope of their control beyond their territories toward greater self-sufficiency and security.

States' expansionist foreign policy reflects domestic political and economic needs as well. Levi (1981), extending the predator theory of state, demonstrates that states try to expand their boundaries when they expect to achieve additional wealth and power on the new lands. Gaining additional resources from the new lands, rulers can reduce the

transaction costs of extracting revenue from the disgruntled and impoverished masses in the original territory, provide more services in return for taxes, and offer direct rewards for their supporters (Levi 1981). In this way, external predation benefits rulers, their domestic supporters and the subjects. Political and economic benefits from imperialistic extraction help a ruler unite their citizens including the disgruntled under his or her control (Levi 1981; Mastanduno et al. 1989).

Bueno de Mesquita and colleagues (2003) similarly propose that political leaders motivated to maximize their domestic political survival tend to engage in national building processes in other countries if the benefits are greater than the costs. States attempt to install "puppets" in other countries in order to control the targets' policy so that the puppets do what the intervening state's leaders asks (Bueno de Mesquita et al. 2003, 419). In doing so, the leaders can provide their domestic supporters and significant parts of the population with more public or private goods, such as national security, access to natural resources, and the expansion of markets (Bueno de Mesquita and Downs 2006). Therefore, it can be said that states intend to expand their influence on other countries to gain domestic political and economic benefits as well as survival or security as an international goal. States do so whether they are democracies or autocracies, to the extent that the benefits outweigh the costs (Lake 1992).

Although the norms against conquest that emerged after World War II have changed the means of foreign policy, the fundamental purpose of unilateral intervention remains the same (Fazal 2007). It is the acquisition of power and wealth through the expansion of influence. Civil war is an important intervention opportunity for foreign powers to maintain or expand their influence on target states, as described in Chapter 2.

The expected benefits of civil war intervention depend on the future behavior or post-war policy of target states which is determined by political leadership and political / economic systems that appear in the aftermath of civil war. Therefore, civil war interveners aim at the preservation or change of target state's authority structures so that they can influence the target's post-war policy and gain more power and wealth (Gent 2008, 2010).

Unilateral intervention in the pursuit of the expansion of influence and external extraction can lead to two consequences accounting for its negative effects on QOL in post-war states: a less-respondent government and limitation of available resources. After civil war, interveners should take the price of costly intervention and be able to increase their power and wealth, which is the main purpose of intervention. Viewing a target state's governmental structure as an instrument, interveners try to make it favorable to themselves (Bueno de Mesquita and Downs 2006). For example, as the installation of "puppets" means in Bueno de Mesquita and his colleagues' (2003) study, interveners can change the target state's leader to fulfill their goals, and include proxies in the cabinet or government staff in the target state. By affecting government authority structures, interveners can control target state's policy including a budget, domestic economic policy, trade policy, and natural resource policy. The inherent conflict of interests among countries implies that when a post-conflict government well responds to their populations, the benefits that interveners can obtain reduce (Bueno de Mesquita and Downs 2006). Hence, external intervention seeking self-interest tends to yield a government less respondent to its populations' demands (Bueno de Mesquita and Downs 2006).

A less-respondent government, by definition, means that a government is less likely to consider its own citizens' needs. Citizens on war-torn soil severely suffer from

poverty, disease, and the lack of educational institutions, and thus they have strong

demands for the recovery of basic quality of life. The improvement of QOL needs a

government to adopt policies on institutional arrangement for distribution and

infrastructures for the provision of public services (Lai and Thyne 2007; Iqbal 2010).

However, this welfare policy is unlikely to be a priority for a post-war government that is

more-respondent to foreign interveners than to domestic citizens. Instead, the government

does what interveners want or seeks shared interests between ruling elites and foreign

interveners first (e.g., repression against anti-government movement, the opening of

market, protection of investors, and access to natural resources), anticipating that if it

does not do so, they will punish for disobedience. Enterline and Greig (2008) show that

polities imposed by foreign powers are less likely to be stable because they are less likely

to respond to the populations' demands and less capable of delivering public goods.

Therefore, it can be said that unilateral intervention seeking self-interest is likely to

impede the improvement of post-conflict QOL by making a post-war government less

accountable to its citizens.

A case of Nicaragua show how unilateral intervention has negative impacts on

post-war well-being. Intervening in the civil war (1982-1990), the US imposed economic

sanction against the Sandinista government, and trained and financially supported the

Contra rebels, in order to secure its influence on the country and the region and remove

threat from its rival, the Soviet Union (Gent 2010). The US failed to gain its best outcome,

a decisive victory by the Contras, and promoted a negotiated settlement. After the civil

war, the new government led by conservative elites in favor of the US attempted to

reform economic and political systems accepting the US's demands including the

opening of market, protection of foreign investors, and the extension of private sectors.
(Robinson 1996). The results were the increase of unemployment and poverty and the
reduction of social service (Robinson 1996). An annual per capita government investment
in public health dropped from $57.1 in 1988 to only $16.92 in 1993, and the infant
mortality rate which was under 50 per 1000 live births in 1980s rose to 71 in 1991 and to
83 in 1992 (Andersson 1993; Robinson 1996). The formation of a less-respondent
government following the US unilateral intervention accounts for why post-war
Nicaragua failed to improve citizens' quality of life.

Civil war intervention by foreign predators is likely to decrease resources
available for the improvement of QOL. Tax revenues are a primary resource for a
government to recover its functions and carry out social policy in the aftermath of civil
war. Studies of state-building have emphasized that extraction, that is, taxation is a
central task for state makers (e.g., Tilly 1975, 1985; Levi 1981; North 1981; Thies 2004,
2007). Without taxation, a state cannot perform any other tasks and even exist (Thies
2007). The political capacity to mobilize taxes needs legitimacy of a government which is
explained by the relationship between a ruler and the ruled (Jackman 1993; Thies and
Sobek 2010). However, when a government does not respond to its populations but to
foreign interveners, it loses its legitimacy (Enterline and Greig 2008). Therefore, a less-
respondent government which is a product of civil war intervention is likely to have
difficulty collecting taxes, and in turn less likely to be capable of providing public goods
for well-being (Ghobarah et al. 2003).

Another resource available for post-war well-being is natural resources which can
be managed by state-owned companies. Civil war weakens government's ability to

extract tax (Thies 2006). Thus, non-tax revenue from natural resources becomes a more valuable resource for a post-war state. This revenue makes it possible for a government to reduce burdens of relatively richer taxpayers and increase social spending on poorer citizens (Morrison 2009). Therefore, natural resources can benefit significant parts of the populations of post-war states, and positively contribute to their well-being.[47]

This positive contribution of natural resources, however, is likely to decrease in states targeted by predatory interveners. Recall that an important reason for civil war intervention is to extract natural resources. External interveners are unlikely to allow state-owned companies in target states to monopolize natural resources. Perhaps, the result is division of the profits from natural resources between interveners and target states, and in turn the decrease of non-tax revenue of the target states. As a result, unilateral intervention as a clear indicator of self-seeking intervention is likely to reduce both tax and non-tax revenues of target states. The reduction of revenues makes it hard for a government to allocate financial resources to the amelioration of institutions and infrastructures for social wellness (Ghobarah et al. 2003; Lai and Thyne 2007).

Unilateral interveners can provide a post-war government with material rewards, another potential source of non-tax revenue, on condition that it complies with their policy demands. While this aid further weakens governmental accountability by strengthening reliance on foreign aid instead of taxes from citizens (Brautigam 1992; Knack 2001; Suhrke 2009), it is likely to rarely make a positive contribution to post-war QOL. Burnside and Dollar (2000, 2004) found that the impact of foreign aid on economic growth is conditional on the same institutions and policies that affect economic growth

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[47] One might argue that affluent natural resources impede political stability and development. In a later section, I discuss the possible effects of natural resources, considering them to be control variables for my empirical analysis. The test results will illuminate the effects of natural resources on post-war well-being.

directly. Collier and Hoeffler (2004) show that the effect of aid on growth is more likely to depend on policy in post-conflict states. The findings of these studies imply that foreign material assistance can help improve post-war QOL only if a government adopts policies to ameliorate citizens' welfare. Unfortunately, such policies are not the main concerns of a less-respondent government that gives priority to foreign powers' interests. Therefore, it is hard to expect that aid following unilateral intervention will function as non-tax revenue to improve post-war QOL. The reasoning about the formation of a less-respondent government and limitation of available resources yields a hypothesis about the relationship between unilateral intervention and post-war QOL:

H_U: *Unilateral intervention is likely to impede the improvement of quality of life in the aftermath of civil war.*

Multilateral Intervention and Post-War Development

Relative to unilateral intervention, the motive of multilateral intervention is less obvious. Chapter 2 clearly shows that UN intervention is encouraged by humanitarian concerns shared among international communities. However, its other finding is that UN intervention is also associated with mutual greed of major powers, although it is unlikely to be a tool for a particular major power to expand its influence on a target country. Overall, it seems that humanitarian motivation outperforms self-interest one to explain UN intervention, but self-interest motivation is also still effective. I first draw a hypothesis from humanitarian motivation school of thought, and then a counterargument from self-interest motivation school.

As reviewed in Chapter 2, a number of studies propose that the primary motive of UN intervention is humanitarian concerns shared among states (e.g., Weiss 2001; Western 2002; Finnemore 2003; Gilligan and Stedman 2003; Fortna 2004a, 2008). The evolution of humanitarian norms and the contribution of the UN as a norm diffuser account for the proposition. Humanitarian disasters caused by civil war stimulate humanitarian concerns in the international community and spur P5 members to reach a consensus for UN intervention, which grants legitimacy to interveners. This line of reasoning is empirically confirmed by Fortna (2004a, 2008) and Gilligan and Stedman (2003) as well as my findings.

Humanitarian motivation, by definition, means that the main purpose of intervention is to relieve human suffering and save lives at risk rather than to seek self-interest. This motivation allows one to expect that UN intervention is likely to increase resources available for the improvement of physical well-being in war-torn states. First, UN intervention can do so by facilitating disarmament and demobilization after civil war. The UN with moral authority and legitimacy can induce belligerent groups to cooperate for disarmament and demobilization by affecting soldiers' morale, focusing international attention on noncooperative groups, and providing direct benefits for cooperation (Fortna 2008, 89-90; Doyle and Sambanis 2006, 56). Disarmament and demobilization enable a post-war state to divert material and human resources allocated to military uses to urgent social programs, such as the improvement of education and public health. Therefore, it can be said that UN intervention contributes to the increase of resources available for post-war welfare by helping resource diversion.

Second, given their humanitarian purposes, UN intervention frequently accompanies humanitarian or development aid, which can directly increase resources available for post-war development. In addition to monitoring disarmament and demobilization, UN peace operations can include comprehensive efforts to assist post-war reconstruction, such as refugee resettlement projects, de-mining program, the rehabilitation of roads, schools, and health facilities, food aid, and fund-raising for development (Doyle and Sambanis 2006; Howard 2008), all of which help promote citizens' well-being. The UN undertakes those activities through its local office or in coordination with its sub-organizations / affiliates like UN High Commissioner for Refugees (UNHCR), World Food Programme (WFP), World Health Organization (WHO), and UN Development Programme (UNDP) (Paris 2004; Doyle and Sambanis 2006; Howard 2008). Such UN-led missions can be effective instruments to reduce human hardship in war-torn states, although they occasionally encounter difficulties because of organizational dysfunctions within the UN and other international agencies and poor coordination among them (Howard 2008).[48]

The UN also often attempts to change political and economic systems of post-war states, as mainly viewed in its post-Cold War peacebuilding operations (e.g., political democratization, economic liberalization, and reforms of police and judicial systems) (Paris 2004; Doyle and Sambanis 2006). This ambitious humanitarian strategy toward sustainable peace is largely based on liberal peace theories (Paris 2004) that liberal market democracy can promote peaceful resolution of political or social conflict in domestic areas (Rummel 1997; Hegre et al. 2001) and boost international cooperation

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[48] See footnote 5.

and peace through expanding economic interdependence (Doyle 1983; Russett and Oneal 2001).

This UN's attempt to influence post-war political and economic systems, along with development aid that reduces government's reliance on tax revenues, may bring about unintended consequences. In other words, UN's ambitious efforts may weaken governmental legitimacy and make the government less accountable to its domestic citizens, and thus negatively affect the improvement of post-war QOL, just as unilateral intervention does so. However, Doyle and Sambanis (2000, 2006) contend that it is necessary for the international community to be involved in institutional building in war-torn states because they usually do not have capabilities to foster democracy and economic growth which are crucial conditions for lasting peace. Paris (2004, 6-7, 187-188) argues that even though UN peace operations have often caused political and social instability by promoting hasty democratization and marketization,[49] "their desire to turn war-torn states into stable market democracies was not the problem," and international peace builders should first concentrate on constructing effective administration which can manage the shock of liberalization.

This ambitious humanitarianism yields a proposition that international assistance is more likely than a target state's accountability to matter for the improvement of post-war QOL. In other words, on behalf of weak governments in war-torn states, foreign authorities can play a significant role in saving lives at risk and building institutional

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[49] Scholars generally agree that UN peace operations were successful in Mozambique and Namibia, and failed in Somalia, Angola and Rwanda (Paris 2004; Howard 2008, Doyle and Sambanis 2006, and Fortna 2008). While Howard (2008) and Doyle and Sambanis (2006) regards UN interventions in El Salvador and Cambodia as successful ones, Paris (2004) argues that it is hard to say that those cases were successful because in El Salvador, UN-led liberalization reduced public services and increased social inequality and conflict, and in Cambodia the UN failed to divert the regime to democracy.

foundations for the provision of public services at least temporarily, offering material and human resources. Also, the risk that UN intervention on humanitarian grounds forms a less-respondent government may be low because at a minimum it is unlikely to intend to do so.

Even if international involvement in transitional administration and development aid somewhat weakens governmental accountability, its direct effects, that is, the impacts of increased resources available for the construction of institutions and infrastructure are likely to be still robust (Economides 2008 et al.). That is to say, the advantages of increased resources may outweigh the disadvantages of weakened governmental legitimacy. Therefore, UN intervention motivated by humanitarian concerns is likely to have positive effects on post-war well-being, which exceed its negative impacts. As a result, the reasoning from the humanitarian motivation school of thought on UN intervention yields a hypothesis about the relationship between multilateral intervention and post-war QOL:

H_{MH}: *Multilateral intervention is likely to promote the improvement of quality of life in the aftermath of civil war.*

Despite its humanitarian commitment, UN intervention is not free from major powers' self-interest. As shown in Chapter 2, oil abundant civil war states are likely to be targets of UN intervention, which means that the needs for access to oil are broadly shared and thus facilitate compromise among P-5 members. More generally, the finding suggests that UN peace operations can reflect realpolitik interests of major powers (de

Jonge Oudraat 1996) and can be guided by their mutual greed (Bennis 1996; Gibbs 1997).

Being involved in UN intervention, major powers can expect to share benefits and reduce

the costs of intervention. This self-interest motivation implies that UN intervention is

likely to have negative impacts on citizens' QOL in post-war states, similar to unilateral

intervention, not only by directly extracting natural resources but also by forming a less-

respondent government.

Bueno de Mesquita and Downs (2006) demonstrate that leaders in both

democratic (US, UK, and France) and nondemocratic (Russia and China) major powers

intend to provide their domestic constituencies with more public or private goods benefits,

respectively, rather than aid poorer or weaker states, when they engage in UN

intervention. As discussed in an earlier section, this goal, that is, interveners' own

political and economic benefits can be well achieved by imposing a less-respondent

government on target states, which means that multilateral intervention may cause a post-

war government to be indifferent to citizens' urgent needs, and in turn weaken its

capacity to mobilize taxes.

From the perspective of critical theory, UN intervention in civil war is driven by

greed of powerful and wealthier states that pursue self-interest by consolidating an

existing regional or world economic system. In particular, critical theorists contend that

while the UN's liberal peacebuilding strategy takes for granted western countries'

benefits by assuming liberalized economy and politics to be a natural solution for post-

conflict states, it ignores local needs and interests (Pugh 2004; Bellamy and Williams

2005; Duffield 2007; Richmond 2008).[50] The top-down solution disregarding local

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[50] There are other criticisms that the problem of UN peacebuiding is not the idea of liberal peace or western
powers' self-seeking behavior, but the implementation process of liberal peace (Paris 2004) as mentioned

demands forms government structures and policies that serve the interest of interveners rather than local populations. Pugh (2004) warns that UN peace operations toward liberal peace, serving dominant western powers' self-interest, is likely to deepen inequality and conflict, and constrain government spending on social benefits in target countries. In sum, critical theory proposes that UN intervention helps sustain rich and powerful states at costs of war-torn states.

Even though those studies reviewed have different theoretical foundations, they carry similar implications about governmental accountability and available resources in post-war states. UN intervention as a product of a compromise among major powers seeking self-interest results in a post-war government that is more obedient to foreign authorities than to domestic citizens. This less-respondent government does not put priority to citizens' well-being in its policy and has limitation to collect tax. Resource extraction by foreign powers further reduces governmental revenues to invest on public services. That is to say, UN intervention driven by predatory major powers is likely to lead to the formation of a less-respondent government and the decrease of available resources which retard social development in the aftermath of civil war.

When UN peace operations result in a less-respondent government, it is difficult to expect that disarmament / demobilization and development aid will make a significant contribution to post-war development. A less-respondent government does not have the strong will to adopt social policy for its citizens. Under this condition, additional resources from disarmament and demobilization are likely to be at best marginally

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earlier or the lack of interveners' capacities to build a good governance (Fearon and Laitin 2004). Krasner (2004) argues that the traditional perception of state sovereignty is problematic, and an alternative prescription for war-torn states can be some form of de facto trusteeship or protectorates. For broader discussion on criticisms of international peacebuilding or state-building, see Chandler (2010, 22-42) and Paris and Sisk (2009, 1-20).

diverted to social programs. The effect of development aid is also not promising. The
main concern of the self-interest-based interveners is the provision of public or private
goods to their own domestic constituencies. This motivation results in selective
investment of development aid. While donors allocate the resources to projects that
benefit their domestic enterprises (tax payers), such as military sectors, they are
indifferent to basic welfare or prosperity of target states (Chesterman 2004, 183-203). For
this reason, Chesterman (2004, 202) states that development aid from the political and
economic consideration of donor states rarely addresses the underlying causes of poverty
and conflict in war-torn states. As a result, the studies of the self-interest motivation
school of thought imply that the negative impacts of UN intervention on post-war QOL
outweigh its positive impacts, and thus I present the following hypothesis:

H_{MS}: *Multilateral intervention is likely to impede the improvement of quality of
life in the aftermath of civil war.*

Other Types of Intervention

Whether external interveners engage in unilateral or multilateral intervention, they
can support only one side, either the government or the opposition, or have a neutral
position.[51] Also, they can use military force, or rely on nonviolent means. Unfortunately,
Chapter 2's findings, along with the literature reviewed, do not clearly show the general
relationships between those intervention types and interveners' motives. The findings

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[51] Unilateral interveners mostly have biased position, but there are a few cases of unilateral intervention
with a neutral position (e.g., France's intervention in Congo, UK's intervention in Cyprus). The UN often
undertakes biased intervention (e.g., the Democratic Republic of Congo, Somalia, Sierra Leon, Yugoslavia,
and Indonesia).

exhibit that outside actors tend to undertake biased intervention, whether they are motivated by humanitarian concerns or self-interest. Besides strategic interests, such as geographic contiguity or alliance with a civil war state, the occurrence of genocide can encourage foreign powers to use military force. Intervention without use of force can also be propelled by interveners' strategic interests as well as humanitarian concerns. Therefore, it is not clear what motive has stronger effects on those methods of intervention.

Given this limitation, I do not present separate hypotheses in this section. Instead, in the following section, I hypothesize that the effects of biased intervention on post-war QOL are likely to be associated with the outcomes of civil war. Also, in a later section, I will empirically test the effects of biased intervention, the use of force, and their counterparts on post-war QOL. The test results will be able to help us understand the underlying motives of those intervention methods and provide implications for policy makers.

The Outcomes of Civil War and Post-War Development

Civil war can end through a military victory by one side; or a negotiation between two sides that have significant military capabilities remaining (Licklider 1995). Previous studies of post-war peace and state-building suggest that the outcomes of civil war can condition post-war stability and government's capability to mobilize resources (e.g., Wagner 1993; Licklider 1995; Tilly 1975, 1985; Cohen et al. 1981), both of which can significantly influence post-war QOL. They thus imply that the degrees of post-war social development may differ with civil war outcomes. However, we need to consider

that external interveners intend to influence post-war policy by affecting the war outcomes. This consideration results in another inference: the effects of war outcomes on post-war QOL may depend on whether third parties are involved in the war. In this section, I first examine the effects of civil war outcomes on post-war QOL, and then how their effects depend on external intervention.

A Military Victory / A Negotiated Settlement, and

Post-War Development

The outcomes of war can lead to monopolization or continuing demonopolization on violent means which makes a post-war state more or less stable. When one side wins a military victory, it can disarm all other factions and destroy their organizational structures. On the other hand, when a civil war ends through a negotiated settlement, no party can disarm its rivals and all warring parties can preserve their organizational structures (Wagner 1993). While a negotiated settlement creates a balance of power situation that makes it possible for dissidents to resume violent conflict, a military victory enables a post-war government to control violent means (Wagner 1993; Porter 1994; Licklider 1995). By facilitating monopoly of violent means, a military victory is more likely than a negotiated settlement to positively contribute to post-war peace (Wagner 1993). This hypothesis has been empirically confirmed by a number of studies (e.g., Licklider 1995; Fortna 2004; DeRouen and Bercovitch 2008; Toft 2010) that use different datasets and research methods. In fact, Fortna (2004a, 273) states, "that peace is more stable after decisive military victories than after wars that end in a tie is perhaps the most consistent finding of the literature on the durability of peace after both civil and interstate conflicts."

Monopoly of violent means and ensuing peace that are likely products of a military victory can make resource diversion easier and help access to public services. Peace and monopolization of violent instruments require disarmament and demobilization of warring parties. Therefore, after a military victory, a winner that controls post-war government can have an opportunity to divert more material and human resources to development policy. For example, the victorious group in Uganda's civil war (1981-1986), the National Resistance Movement (NRM), absorbed soldiers from adversary factions so that they could take on social tasks, such as growing food for citizens during post-war reconstruction (Toft 2010, 107-108). Peace after a victory does not only reduce the threat of violent conflict but also facilitate access to basic requirements of food, nutrition, clean water, and housing (Mori et al. 2004), and thus can significantly improve human welfare.

Another advantage of monopoly on violent means through a military victory may be the increase of government's ability to extract taxes, which can expedite post-war reconstruction. Tilly (1985, 181) states that state makers' main activities including taxation[52] depend on whether they "monopolize the concentrated means of coercion," and thus "a state that successfully eradicates its internal rivals strengthens its ability to extract resources." In the absence of a monopoly of violent means implied by a negotiated settlement, a post-war government cannot effectively control tax resistance from potential internal rivals or local authorities. At the time, the state may compromise with the dissidents, instead of coercive actions, in order to maintain its rule, and the result is the

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[52] Tilly (1985) presents four activities that state makers do: 1) war making: eliminating or neutralizing rivals outside territories that they try to control; 2) state making: eliminating or neutralizing rivals within the territories; 3) protection: safeguarding clients that support their rule; 4) extraction (or taxation): acquiring the means to fulfill the first three activities: war making, state making, and extraction.

reduction of extracted taxes (Thies 2007). Also, the lack of a decisive victory can allow

both combatants remaining to spend resources on preparing for future war rather than on

reconstructing war-torn economy and society (Luttwak 1999). Therefore, a military

victory is more likely than a negotiated settlement to help a post-war government

mobilize taxes which are important resources available for social development programs.

Based on the literature on post-war peace and state-building, I propose the following

hypothesis about the relationships between the outcomes of civil war and post-civil war

QOL:

H_O: *A military victory is more likely than a negotiated settlement to promote the*
improvement of quality of life in the aftermath of civil war.

Biased Intervention, A Military Victory, and
Post-War Development

The effects of a military victory, however, can vary with whether a winner was

supported by outside interveners. In the course of civil war, biased interveners aid their

protégé win a war so that they can influence post-war policy (Gent 2008). After a victory,

while a post-war government has a chance to mobilize more resources and improve

citizens' QOL, foreign powers that contributed to the victory can also have a great

opportunity to influence the post-war state's policy and achieve their ultimate goals,

whether they seek their own interests or humanitarian objectives. They can do so by

influencing government accountability, accessing to natural resources, helping

institutional reform, or offering development aid, which increase or decrease resources

available for post-war social development of target states. Therefore, biased interveners can expand or shrink the positive impacts of a military victory on post-war QOL. Their effect is likely to depend on their motives, self-interest or humanitarian concerns, but unfortunately it is hard to detect them (see Chapter 2). Hence, I present two scenarios for the interaction effects.

First, suppose that predatory interveners supported one of the two groups in civil conflict, and the supported group won a military victory. After war, claiming the price of a costly intervention, they can easily exert influence on the post-war government in order to gain political and economic benefits. The intervention is likely to result in the formation of a less-respondent government and the reduction of resources available for social policy, as explained in an earlier section. At the time, it can reduce or even remove the positive effects of a military victory on post-war social development. This consequence means that a military victory backed by predatory interveners is likely to delay the improvement of post-war QOL, compared to a military victory that was won without support from foreign powers.

Second, humanitarian interveners, being involved in a civil war, can distinguish perpetrators from victims and undertake biased intervention to punish the war criminals and protect people at risk (Weiss 1999; Barnett and Weiss 2008). A military victory by one side supported by those interveners forms a favorable condition under which the winner and the interveners can cooperate to meet urgent social demands, without serious threat from adversary factions. In the meantime, the benevolent interveners can offer a post-war government development aid to relieve human hardship and assist institutional reforms for sustainable peace and development rather than to force the government to

serve their own interests. Therefore, a military victory backed up by humanitarian interveners is likely to further promote the improvement of post-war QOL, compared with a victory that was secured without support from external interveners.

I do not decide between these two scenarios that result from two possible motives of biased intervention. Instead, I propose a hypothesis that there are interaction effects between biased intervention and a military victory on post-war social development.

H_{BO}: *The effects of a military victory on post-war QOL are likely to depend on whether a winner was supported by biased interveners during civil war.*

Research Design

My hypotheses specify how third-party intervention influences post-civil war QOL through two causal paths: intervention methods and war outcomes. However, post-war social development can also be associated with political, economic, and social conditions of a state (e.g., the level of democracy, GDP per capita, and ethnic fractionalization) and characteristics of civil war (e.g., ideological dispute and the number of casualties). These alternative factors can make QOL improvement easier or harder, and might influence foreign powers' decision making on intervention in civil war. Without considering them, one can reach over- or underestimation of the relationship between intervention and post-war QOL.

Therefore, empirical tests require controlling for alternative variables that may influence post-war QOL, for a valid estimation. To do so, I evaluate the baseline prospects for the improvement of post-war QOL, which account for the possible effects

of variables other than external intervention at the first place, and then estimate the effects of external intervention controlling for the variables that affect the baseline prospects.[53] In doing so, I address the potential problem of non-random target selection by interveners and provide more comprehensive explanations about the determinants of post-war social development. After introducing my dataset, I operationalize dependent variables, key independent variables, and other variables for baseline models.

Post-Civil War Dataset

To test my hypotheses, I construct a post-civil war dataset in which post-war year is a unit of analysis of this study. The list of civil wars is acquired from Regan's (2002) data reporting civil wars that occurred between 1944 and 1999. Within the data, some countries experiences only one civil war, but others undergo multiple wars. For the former, all years from the end of civil war to 1999 are included in my post-civil war dataset. For the latter, only if peace lasts for at least 2 years after the end of prior civil war, I include the peace years in the dataset so that they can have information about the improvement of post-war QOL. For example, Rwanda experienced two civil wars (1963-1964, 1990-1994) (Regan 2002). Thus, I record two post-war periods, 1964-1989 and 1994-1999. The first Zimbabwe civil war (1972-1979) was followed by the second war (1980-1988) (Regan 2002). In this case, I only incorporate years from 1988 to 1999 in my dataset. Also, in order for post-war years to be included in my dataset, civil war must

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[53] Fortna (2004b) employs this estimation process to study the relationship between cease-fire agreements and the duration of peace. Considering that strong cease-fire agreements might occur when cooperation for peace is relatively easy, she controls for other variables that can influence the baseline prospects for peace, for a valid estimation of the effects of cease-fire agreements.

end before 1999. As a result, my dataset covers post-civil war years of 50 states in which civil wars started and ended between 1944 and 1999.

Dependent Variable

My dependent variable is annual percent changes in post-war QOL. To measure this variable, I employ Morris's (1979) QOL index which is widely used as an alternative indicator of development (e.g. Moon and Dixon 1992; Pourgerami 1992; Emizet 2000; Pickering and Kisangani 2006). The QOL index, as a composite measure of three individual indicators: life expectancy at birth, infant mortality rate per 1,000 live births, and adult literacy rate, focuses on how well a state or society satisfies basic human needs. Therefore, QOL can summarize the various effects of policies that influence the three individual components (Morris 1979, 5). In doing so, this measure can reflect how effectively a state's resources are used to promote societal well-being. Hence, QOL can be a good indicator to measure whether citizens suffer from the lack of basic public services on war-torn soil.

To construct QOL index, I collect data for life expectancy and infant mortality rate from the World Bank Development Indicators, UN Demographic Yearbooks (1951, 1957, 1961, and 1966), and *World Population Ageing, 1950-2050* (by the UN). Literacy rate data are taken from the United Nations, Educational, Scientific and Cultural Organization (UNESCO) Statistical Yearbooks (1963, 1965, 1973, 1976, 1981, 1986, and 1999). The collected data show that life expectancy (LE) ranges between 27.936 for Rwanda in 1994 and 78.137 for Greece in 1997, infant mortality rate (IM) is distributed between 5.9 for Cyprus in 1999 and 227.34 for Bolivia in 1946, and literacy rate (LR)

between 10.4 for Algeria in 1962 and 99.587 for Georgia in 1999. Following the method

devised by Morris (1979), I compute QOL as follows:

Physical Quality of Life (QOL) =

$$[LR + \{(227.34 - IM) / 2.214\} + \{(LE - 27.936) / 0.502\}] / 3,$$

where 2.214 = (the highest IM – the lowest IM) / 100, and 0.502 = (the highest LE – the

lowest LE) / 100. This computing method allows QOL to be scaled on an index of 0 to

100. In my dataset, QOL ranges between 16.961 for Bolivia in 1946 and 98.727 for

Greece 1999. The mean of QOL is 66.281, and standard deviation is 20.743. Being

interested in the changes in QOL rather than its level, I take annual percent changes in

QOL: $\{(QOL_t - QOL_{t-1}) / QOL_{t-1}\} \times 100$.

Figure 5.1 depicts the distribution of annual percent changes in QOL during post-

civil war years in 50 states covered in my dataset. It displays that citizens' quality of life

tends to improve in the aftermath of war (% Δ in QOL is mostly larger than 0). The

improvement rates are remarkable in the early post-war period, and decreases over time.

On average, QOL annually improves by 1.38% (see Table 5.1).

Figure 5.1 Scatter Plot of Annual Percent Changes in Post-War QOL
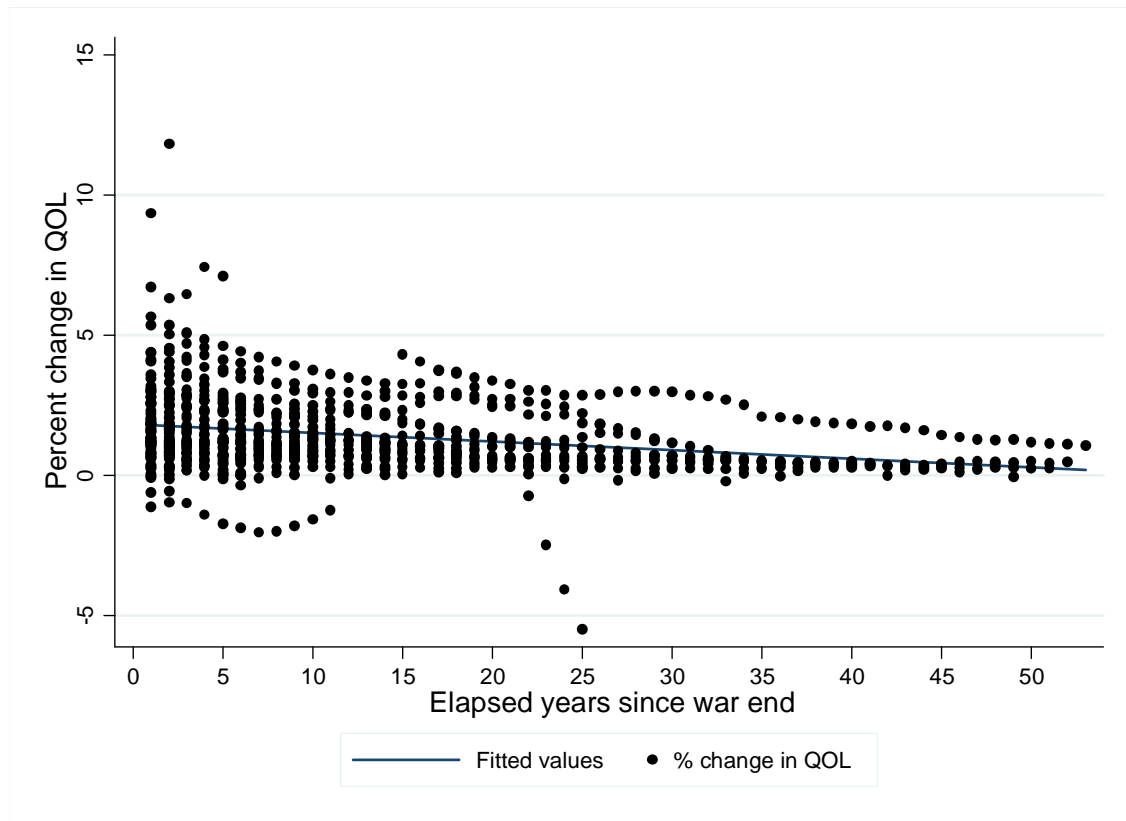
Independent Variables

Hypotheses - H_U, H_{MH}, and H_{MS} - state the relationships between intervention

methods and post-war QOL. I measure intervention types using Regan's (2002) data

which identify whether an intervention was unilateral or multilateral. While Regan (2002)

follows his definition of third-party intervention: "convention-breaking military or

economic activities" in a foreign country with the aim of "changing or preserving

authority structures" (2000, 9-10), his dataset does not cover several UN peace operations.

Therefore, for robust hypothesis testing, I also employ UN peace operations data

provided by Doyle and Samabnis (D&S) (2006) as another measure for multilateral

intervention.[54] In other words, I use two separate proxies that come from Regan (2002) and D&S (2006), to estimate the effects of multilateral intervention, and rely on Regan's (2002) data to test the effects of unilateral one. A civil war can experience unilateral intervention and multilateral intervention simultaneously. That is to say, those methods are not mutually exclusive. Thus, they are coded dichotomously in separate variables. If a civil war underwent *unilateral intervention*, all years after war termination are coded 1, otherwise 0. If a civil war experienced *multilateral intervention*, all post-war years are coded 1, otherwise 0.

Figure 5.2 shows average percent changes in QOL over 15 years for states that did not experience any intervention and those that experienced unilateral or multilateral intervention. All states have almost equal percent changes in QOL in the next year after the end of war. However, they show different levels of QOL improvement over time. When no foreign power intervened in civil war, states show relatively greater improvement of QOL. States that experienced unilateral intervention display lower QOL improvement rates than do those states experiencing no intervention, and the improvement rate somewhat consistently drops over time. States that underwent multilateral intervention show overall the lowest improvement rates, although they exhibit the highest rate in the two years after war termination.

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[54] All those UN peace operations started before the end date of civil war which is recorded by Regan (2002) (see Lowe et al. 2008).

Figure 5.2 Unilateral / Multilateral Intervention and Percent Changes in Post-War QOL
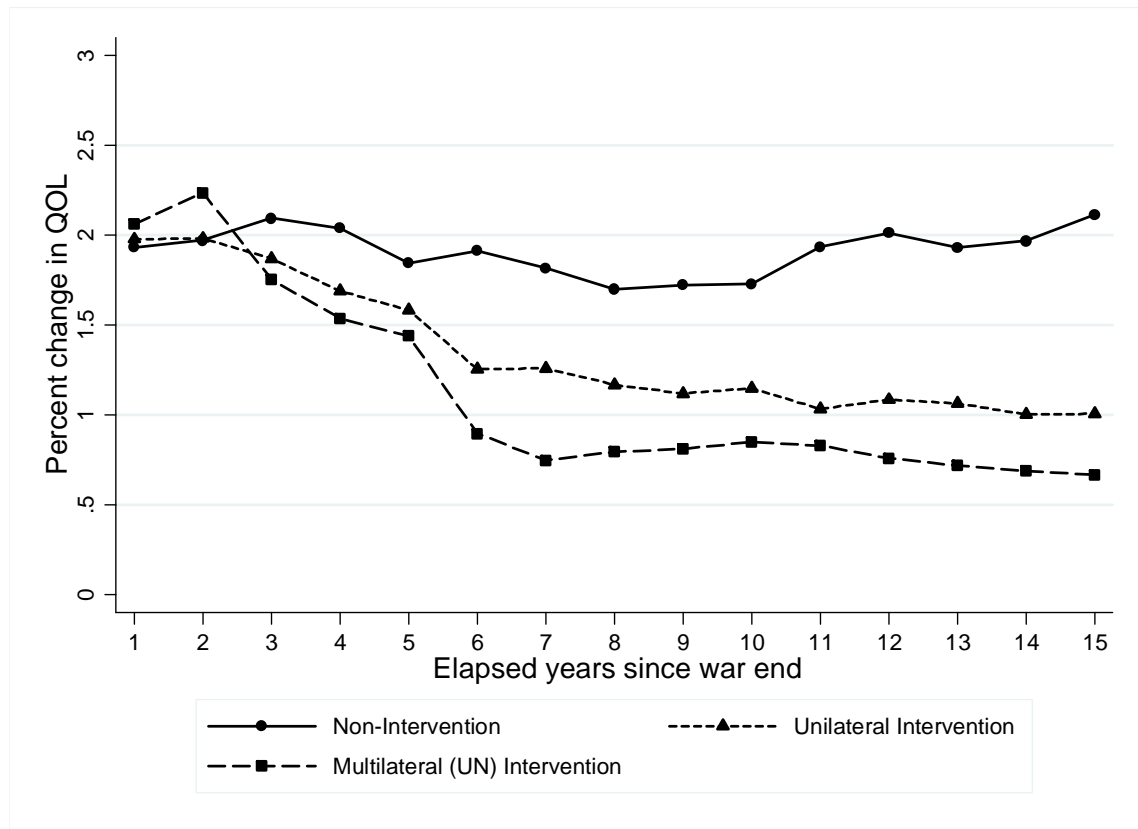
Note: For multilateral intervention, I use Doyle and Sambanis's (2006) UN peace operations data because Regan (2002) reports relatively fewer cases of multilateral intervention.

According to Figure 5.2, one may conclude that third-party intervention impedes the improvement of post-civil war QOL, and multilateral intervention has worse effects than unilateral intervention. However, this preliminary conclusion might not be the case because external interveners can select harder cases in which QOL is more difficult to ameliorate and because changing conditions of target states can influence the QOL improvement. Therefore, in the next section I will perform multivariate analyses to examine the effects of external intervention on post-war QOL.

Figure 5.3 The Outcomes of Civil War and Percent Changes in Post-War QOL
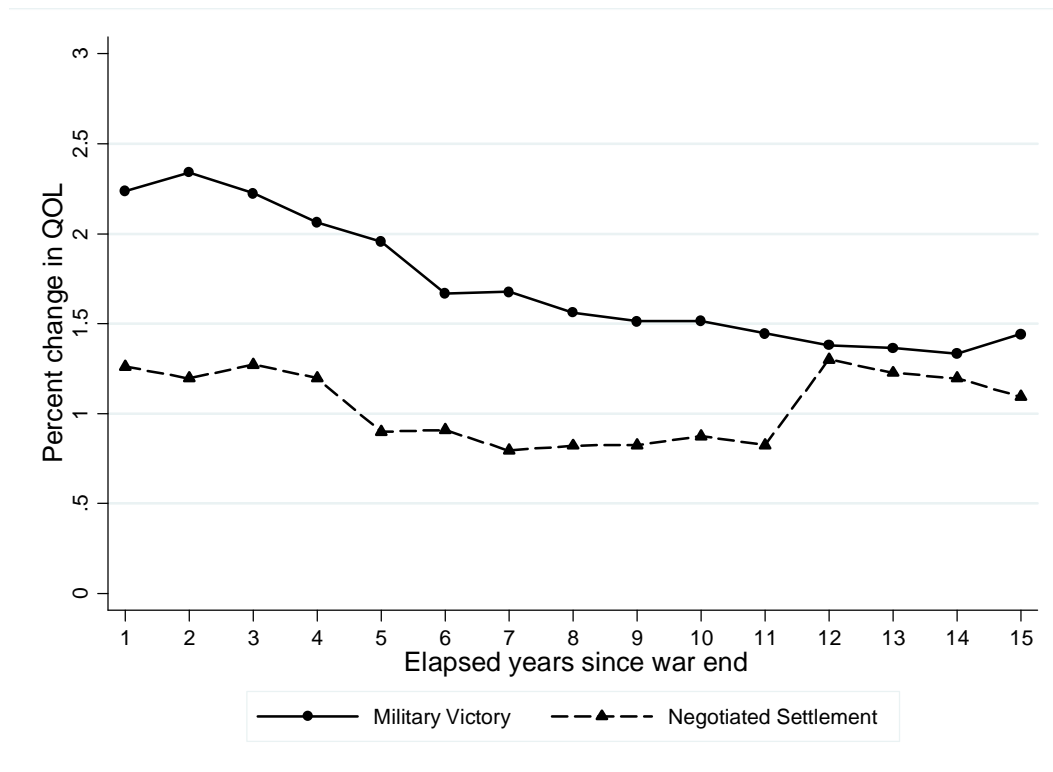
H_O specifies that the outcomes of civil war make differences in post-war QOL.

Data for civil war outcomes are taken from Gent (2008) that identifies whether a civil

war ended through *a military victory*, or a negotiated settlement, which are the same as

used in Chapter 4. They are mutually exclusive and exhaustive outcomes. All years after

a military victory are coded 1, otherwise 0. A bivariate analysis (Figure 5.3) shows that

when a civil war ends by a military victory, citizens' QOL is more likely to improve than

when it ends by a negotiated settlement. This result, however, is not enough to confirm

H_O. Through a multivariate analysis controlling for other variables, I will test the

hypothesis.

Figure 5.4 Biased Intervention, Military Victory, and Percent Changes in Post-War QOL
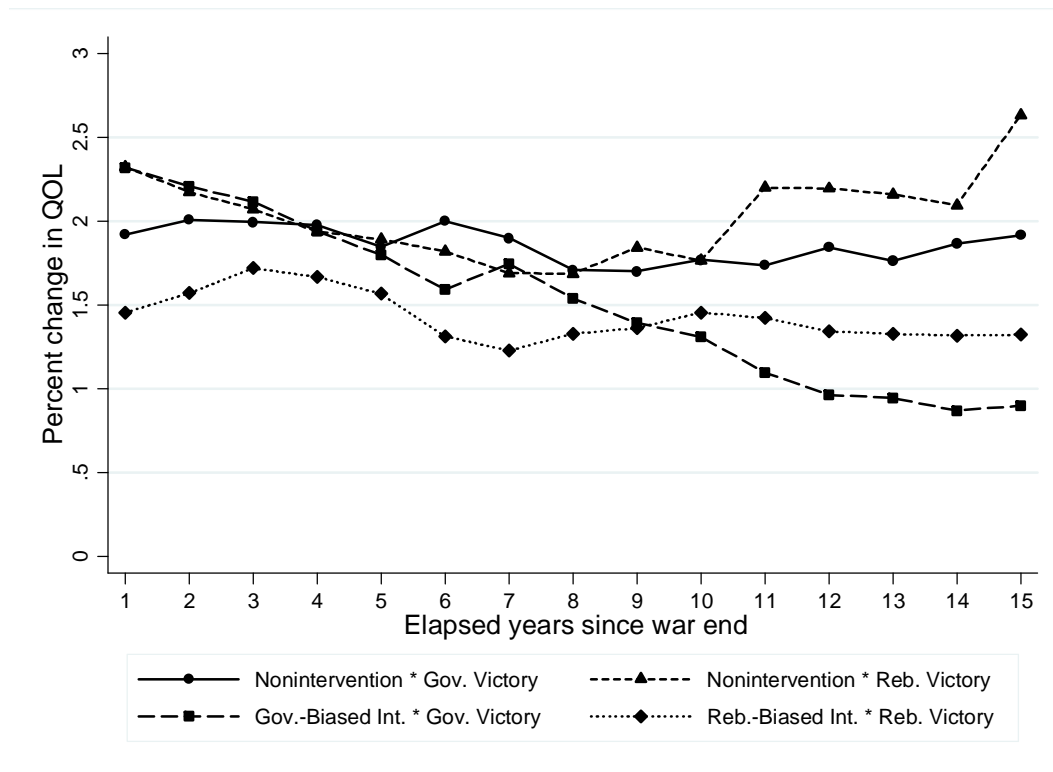
H_{BO} states the interaction effects between biased intervention and a military

victory. Based on Regan (2002) and Gent (2008)'s data, I split each one into two

variables: 1) *government-biased intervention* which means that interveners support a

government, and *rebel-biased intervention* referring to interveners' support for a rebel

group; 2) *a government victory and a rebel victory.* These four variables are dichotomous.

If an event denoted by each variable occurred, post-war years are coded 1, otherwise 0.

To measure interactions between the variables, I form two multiplicative terms,

government-biased intervention × a government victory and *rebel-biased intervention ×*

a rebel victory. Figure 5.4 exhibits that the effects of a military victory may vary with

whether a winner was supported by outside interveners. A multivariate analysis will

clarify whether there are significant interaction effects between biased intervention and a military victory. While estimating the effects of biased intervention, I also test the effects of *neutral intervention*. This dichotomous variable is measured using Regan's (2002) data.

In addition to the independent variables which are used for testing hypotheses, I also consider *the use of force* and *intervention without use of force* as independent variables. By empirically testing the effects of these additional variables, I provide more implications regarding how post-war social development differs with intervention methods. The information about the two dichotomous variables is taken from Regan (2002).

Variables for Baseline Models

One of the reasons I analyze baseline models is that third-party intervention might occur in easy or hard cases in which citizens' well-being is more or less likely to be improved in the aftermath of civil war. Interveners can select such cases by observing conditions of a civil war or civil war state before they decide to intervene in the civil war. This means that baseline models should cover variables that might influence post-war QOL at the time of civil war onset. Baseline models should also include variables related to post-war conditions of a state, which might promote or delay the improvement of QOL. As a result, I operationalize variables for two baseline models.

For the baseline models, I use conventional factors that are likely to promote or impede the improvement of post-war QOL, which are found by the literature on social development and post-war stability. Building the first baseline model, I employ six variables, democracy score, GDP per capita, primary resource export rate, population,

ethnic fractionalization, and ideological war, which interveners can observe at the time of

civil war onset. It is widely believed that governments elected democratically are more

likely than autocrats to provide public services including education and public health (e.g.,

Stasavage 2005; Klomp and Haan 2009; Iqbal 2010). However, the positive impacts of

democracy might not exist in my study in which a dependent variable is annual percent

changes in QOL. Lai and Thyne (2007) found that there is no significant and positive

relationship between annual percent changes in educational spending and democracy

because democracies may already have higher level of educational spending than

autocracies. Including *democracy score at war onset* in my baseline model, I examine its

relationship with annual percent changes in post-war QOL. Data for democracy score are

based on the Polity IV project (Marshall et al. 2010).

Economic development can also be closely related to social welfare. Wealthier

states have more resources which can be spent on social policy, and thus they are more

likely to be able to improve citizens' QOL (Emizet 2000; Pickering and Kisangani 2006;

Iqbal 2010). However, similar to the effects of democracy, there may be a contrary

expectation: richer states, because they have already higher level of welfare, are likely to

show slower improvement of social wellness relative to poor countries (Lai and Thyne

2007). My baseline model tests the relationship between economic development and

social development by incorporating *GDP per capita at war onset*. The data are acquired

from Gleditsch (2002), and I take their logged values.

I investigate how natural resources influence post-war QOL. There is debate

about the effects of natural resources on political stability or social development. Some

scholars find that nontax revenues including natural resources tend to positively

contribute to political stability and redistributive policy increasing revenues of a government (e.g., Smith 2004; Morrison 2009). On the other hand, others propose that natural resources tend to be a cause of political instability providing incentives for rebellion, so-called a resource curse theory (e.g., Collier and Hoeffler 2004), and resource-rich states are less likely to represent citizens and can be disconnected from their societies because they do not have to rely on tax revenues (e.g., Skocpol 1982; Vandewalle 2001). While the former implies the positive relationship between natural resources and post-war social development, the latter suggests the negative relationship between them. I attempt to adjudicate across these competing explanations by testing baseline models. As a proxy of states' natural resources, I use *primary resource exports at war onset* which is measured as a percentage of GDP. The data are acquired from Fearon (2005).

Larger *population* may make it easier or harder for a post-war government to improve citizens' QOL. Previous studies exhibit mixed findings about the effects of population on social welfare. While Iqbal (2010) shows that a larger population is positively associated with the reduction of infant mortality rate and the increase of life expectancy, Lake and Baum (2001) find that the larger population, the more likely infant mortality rate is to increase. Including populations in my baseline model, I examine how they influence post-war QOL. I take logged values of populations which are taken from Gleditsch (2002).

Ethnic fractionalization is likely to be negatively associated with the improvement of post-war QOL. This prediction is because ethnic diversity can increase social polarization and make it difficult for a society to form a consensus for policy

related to the provision of public goods, such as infrastructures and education (Easterly

and Levine 1997). Ethnic division can also increase the likelihood of another conflict

(Collier and Hoeffler 2004; Sambanis 2008), thereby impeding the diversion of military

resources to social policy. Thus, my baseline model includes ethnic fractionalization

which is taken from Fearon and Laitin (2003).

Table 5.1 Summary Statistics of Variables

Variable	Mean	Std. Dev.	Minimum	Maximum
Percent Δ in QOL	1.381	1.313	-5.493	11.837
QOL at war end	56.253	20.657	16.961	93.739
Unilateral Intervention	0.637	0.481	0	1
Multilateral Intervention (Regan)	0.023	0.150	0	1
Multilateral Intervention (D&S)	0.191	0.393	0	1
Government-Biased Intervention	0.545	0.498	0	1
Rebel-Biased Intervention	0.388	0.488	0	1
Neutral Intervention	0.022	0.147	0	1
Use of Force	0.299	0.458	0	1
Intervention without Use of Force	0.543	0.498	0	1
Military Victory	0.767	0.423	0	1
Gov. Military Victory	0.521	0.500	0	1
Reb. Military Victory	0.246	0.431	0	1
Democracy Score at war onset	-1.912	6.578	-10	10
Democracy Score after war end	-0.801	7.186	-10	10
GDP PC at war onset (logged)	7.676	0.690	6.203	9.199
Percent Δ in GDP PC after war end	2.153	7.689	-68.938	77.645
Primary Resource Exp. at war onset	0.136	0.128	0.007	0.794
Primary Resource Exp. after war end	0.134	0.102	0.006	0.685
Ethnic Fractionalization	0.447	0.254	0.059	0.933
Ideological War	0.634	0.482	0	1
Population at war onset (logged)	8.622	1.436	5.928	12.910
Population after war end (logged)	8.964	1.399	5.998	13.502
War Deaths (logged)	8.779	1.806	5.298	13.122
War Duration (logged)	5.952	1.799	2.708	9.458
Elapsed Years since war end	13.061	12.657	0	53

War type, which reflects the cause or goal of war, can also influence post-war social development. If a civil war is an *ideological war*, the goals of combatants are closely associated with the preservation or change of political and economic systems of their states, which can significantly affect post-war policy. Ideological war is a dichotomous variable that is based on Regan (2002). The reference war type is ethno-religious war.

The next baseline model should incorporate post-war conditions of states. First, it is necessary to include the level of *QOL at war end*. The literature on post-civil war economic development (e.g., Collier 1999; Kang and Meernik 2005) presents that poor countries initially tend to grow faster than rich countries, which is called "convergence effects." Thus, one can expect that states having lower levels of QOL at the time of war termination are more likely to be able to improve QOL during the post-war period.

Second, I include *a military victory* in the baseline model. By doing so, I test H_O which argues that a military victory by one side is more likely than a negotiated settlement to make a positive contribution to post-war QOL. The effects of a military victory, once again, will be estimated by considering interactions with government- or rebel biased intervention.

Third, I consider the costs of civil war which are likely to have negative effects on post-war QOL. A main reason why civil war harms citizens' well-being is that it destroys resources available for public services (Ghobarah et al. 2004; Lai and Thyne 2007; Iqbal 2010). This implies that the more civil war costs, the harder citizens' welfare is to be ameliorated. I use two proxies, *war deaths* and *war duration*, which are conventional measures of war costs. The number of deaths is logged to produce the variable. War

duration is measured in month and logged to be included in the model.[55] Both data are taken from Regan (2002).

Fourth, I control for elapsed years since the end of war because the effects of independent variables including foreign intervention on post-war QOL might be only temporary or decline over time (Lai and Thyne 2007).

Political, economic, social conditions that are included in the first baseline model (a model at war onset) can change through civil war and during post-war periods. The post-war baseline model therefore covers *democracy score after war end*, *primary resource export after war end*, and *population after war end* which are measured in a given year after the end of civil war.

Finally, I include *annual percent change in GDP per capita after war end* in the post-war baseline model, instead of GDP per capita after war end, for two reasons: 1) the logged GDP per capita after war termination has a fairly strong correlation with another variable, QOL at war end, at 0.59; 2) the inclusion of GDP per capita growth rates allows to test how economic growth has an influence on the improvement of citizens' QOL.

My data structure is time-series cross-sectional. While I estimate the models through Ordinary Least Squares (OLS), heteroskedasticity and autocorrelation among observations can bias estimation. Using annual percent changes in QOL as a dependent variable, I am less concerned about autocorrelation. However, heteroskedasticity is still problematic. I address the problems by employing Panel Corrected Standard Errors (PCSE) proposed by Beck and Katz (1995).

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[55] There is no strong correlation (0.358) between war deaths and duration.

Empirical Findings and Discussion

Baseline Prospects for Post-War QOL Improvement

Table 5.2 shows the baseline prospects for the change in post-war QOL. Each OLS coefficient, along with PCSE, indicates whether a variable has statistically significant effects on the change in citizens' quality of life and how much it positively or negatively influences post-war social development. Models 1 and 2 estimate how the conditions at the time of war onset and those after war termination make differences in post-war well-being, respectively.

The level of democracy of a country which is observed at the time of civil war onset is likely to be negatively associated with post-war social development. GDP per capita at war onset also has a significant and negative impact on post-war QOL. In other words, the more democratic or wealthier, the less likely a state is to improve citizens' well-being. These findings support Lai and Thyne's (2007) argument that because democratic or rich states tend to already have higher level of social welfare, their governments' investment in social policy is likely to slowly increase, relative to autocratic or poor countries.

This reasoning becomes clearer by a finding in model 2. When QOL at war end is controlled, the level of post-war democracy is significantly and positively associated with social development.[56] In other words, democracy is likely to positively contribute to the improvement of QOL, if all other conditions including initial level of social welfare are equal. Annual percent change in GDP per capita for post-war periods also has positive

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[56] In an additional test, I found that when the variable, QOL at war end, is removed from the model 2, post-war democracy is negatively associated with post-war well-being.

impacts on the betterment of QOL. This upholds existing findings showing the positive

relationships between economic growth and social development (e.g., Emizet 2000;

Pickering and Kisangani 2006; Iqbal 2010).

Table 5.2 Baseline Prospects for the Improvement of Post-War QOL

Variable	Model 1: At war onset Coefficient	PCSE	Model 2: After war end Coefficient	PCSE
Democracy at war onset	-0.027***	0.006		
Democracy after war end			0.010***	0.004
GDP PC at war onset	-0.277***	0.092		
Δ in GDP PC after war end			0.018**	0.008
Resource Exp. at war onset	1.621***	0.404		
Resource Exp. after war end			1.588***	0.364
Population at war onset	0.044**	0.021		
Population after war end			-0.015	0.014
Ethnic Fractionalization	1.527***	0.323	-0.183	0.294
Ideological War	0.164	0.132	0.325**	0.129
QOL at war end			-0.043***	0.003
Military Victory			0.123*	0.067
War Deaths			0.114***	0.020
War Duration			-0.015	0.022
Elapsed Years since war end			-0.034***	0.002
Constant	2.091**	1.020	3.061***	0.462
N	880		880	
R^2	0.184		0.528	

Note: *significant at 10%; **significant at 5%; ***significant at 1%.

Primary resource export rate has statistically significant and positive impact on the percent change in post-war QOL in both models, which means that resource-abundant countries are more likely than resource-poor ones to be able to ameliorate citizens' well-being in the aftermath of civil war. On war-torn soil, governments may have difficulty collecting taxes, and thus non-tax revenues may be more valuable resources for post-war social policy. Scholars have debated about the effects of nontax revenues including natural resources on political stability and development, as discussed earlier. My finding implies that natural resources can be important sources of a government's nontax revenues which positively contribute to post-war social development rather than cause a government to be disconnected from its society.

Whereas a population and ethnic fractionalization have significant and positive impacts on post-war QOL in model 1, they do not have significant effects in model 2 that controls for post-war conditions. These results mean that post-war conditions cancel out the effects of a population and ethnic diversity. The logic applied to the relationship between democracy or GDP per capita and social development can also account for why ethnic diversity unexpectedly has a positive effect on post-war social development in model 1. Ethnically heterogeneous states may already have lower level of governmental investment in public policy (Easterly and Levine 1997), and thus they may exhibit faster improvement of social welfare relative to homogeneous states.

Ideological war does not have statistically significant impacts on post-war social development in model 1, but it has significantly positive effects on that in model 2. Controlling for several post-war conditions, model 2 displays that if a civil war is ideological conflict, a post-war government is more likely to promote citizens' welfare by

about 0.33% each year, compared to when it is ethnic or religious conflict. This finding
implies that a post-war government formed through ideological competition show better
achievements in social policy.

As expected, the level of QOL at war end is likely to be negatively associated
with the improvement of citizens' welfare during post-war periods. In other words, the
lower level of initial social wellness, the more likely a post-war government is to be able
to improve citizens' QOL. This finding confirms the convergence effects which have
been found in the literature on post-war economic development (Collier 1999; Kang and
Meernik 2005).

A military victory has a positive impact on post-war social development, which
supports H_O. When one side wins a decisive military victory in civil war, a post-war
government is more likely to improve citizens' QOL by about 0.12% each year,
compared with a government formed by a negotiated settlement. A military victory
facilitates monopolization of violent means and makes a post-war state more stable.
Those conditions do not only make it easier for a post-war government to reallocate
military resources to social programs but also help the government mobilize taxes that is
a crucial resource for post-war development. More stable peace can also provide citizens
with more chances to access to institutions and infrastructures associated with public
health and education. While many studies examine the relationships between civil war
outcomes and post-war peace, relatively little attention has been paid to their
relationships with post-war development. By finding the positive impacts of a military
victory on post-war physical well-being, my study contributes to the literature on post-

war development. I will re-estimate the effects of military victory controlling for third-party intervention, in the next section.

Regarding the effects of war costs, the death toll from civil war has a positive effect on post-war QOL, which is contrary to my expectation, although war duration has no significant impact. The more casualties, the more citizens' welfare is likely to be improved. The literature on post-(civil or interstate) war peace helps interpret this finding. Some scholars show that more deadly wars indicating more hostility among combatants increase the likelihood of another war (Doyle and Sambanis 2000; Fortna 2004a). On the other hand, others propose that they are likely to rather make post-war peace more durable because higher costs of war make combatants more hesitant to resume fighting and motivate them to cooperate for lasting peace (Werner 1999; Morey 2011). Luttwak (1999, 36) similarly contends that "war brings peace (by resolving political conflicts) only after passing a culminating phase of violence." The latter line of reasoning can be expanded to explain the positive relationship between higher death toll and post-war development. A fatal civil war can resolve political conflicts which are barriers to development and prompt belligerents to cooperate with each other for the reconstruction of their country. Histories of states display that despite mass killing and hatred against one another during civil war, people have succeeded in living and working together for a better future after war (e.g., civil wars in the US, the UK, and France) (Licklider 1995).

The baseline models identify variables that are likely to significantly influence the improvement of post-war QOL at both time frames: at the time of civil war onset and after war termination. Those variables observed at each time frame can be indicators that make it easier or harder for a post-war state to foster social development. Foreign powers

can presume the prospect for post-war development by looking at the circumstances of targets before they decide to intervene, or more generally by observing conditions at the time of war onset. In doing so, they might intentionally select easier or harder cases. However, the conditions of targets change over time, and the costs and outcomes of civil war also influence post-war QOL. In other words, there are circumstances that are difficult to be observed at the time of war onset but significantly affect post-wars social development. Therefore, I analyze the effects of external intervention on post-war QOL controlling for the variables that significantly influence baseline prospects at both time frames. Even though the conditions at the time of war onset are not identical to the post-war counterparts, they are highly correlated with each other. Thus, the variables measured at war onset are not included in the post-war model.[57]

Intervention Methods and the Prospects for

Post-War QOL Improvement

Models 3-6 in Table 5.3 test the hypotheses - H_U, H_{MH}, and H_{MS} - that specify the effects of unilateral or multilateral intervention on changes in post-war QOL. While Models 3 and 4 control for the conditions at the time of civil war onset, Models 5 and 6 control for the circumstances after the end of war. In all the models, unilateral intervention has statistically significant and negative impacts on annual percent changes in post-war QOL. In other words, the models show that unilateral intervention is likely to impede the improvement of post-war QOL, controlling for all other conditions that make post-war social development easier or harder in both time frames. This finding strongly

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[57] The correlation between democracy at war onset and that after war end is 0.659. Primary resource export rate is also highly correlated (0.865) between both time frames.

supports H_U. The coefficients estimated in Models 5-6 range between -0.183 and -0.259,

which means that when a civil war experiences unilateral intervention, citizens' quality of

life is likely to drop by about 0.18-0.26% each year in the aftermath of civil war,

compared to when it does not experience unilateral intervention.

Table 5.3 Unilateral / Multilateral Intervention and Post-War QOL

Variable	Under War Onset Conditions		Under Post-War Conditions	
	Model 3	Model 4	Model 5	Model 6
	Coefficient	Coefficient	Coefficient	Coefficient
Unilateral Intervention	-0.320 (0.071)***	-0.344 (0.068)***	-0.183 (0.051)***	-0.259 (0.053)***
Multilateral Int. (Regan)	2.171 (0.871)**		1.935 (0.586)***	
Multilateral Int. (D&S)		0.370 (0.119)***		0.650 (0.115)***
Democracy at war onset	-0.021 (0.006)***	-0.028 (0.008)***		
Democracy after war end			0.010 (0.003)***	0.008 (0.003)***
GDP PC at war onset	-0.248 (0.098)**	-0.296 (0.120)**		
Δ in GDP PC after war end			0.015 (0.006)**	0.015 (0.008)*
Resource Exp. at war onset	1.747 (0.334)***	1.757 (0.329)***		
Resource Exp. after war end			1.831 (0.340)***	1.807 (0.391)***
Population at war onset	0.044 (0.025)*	0.032 (0.023)		
Ethnic Fractionalization	1.516 (0.220)***	1.552 (0.248)***		
Ideological War			0.401 (0.099)***	0.293 (0.110)***
QOL at war end			-0.042 (0.002)***	-0.043 (0.002)***
Military Victory			0.175 (0.058)***	0.399 (0.109)***
War Deaths			0.114 (0.012)***	0.093 (0.013)***
Elapsed Years since war			-0.032 (0.002)***	-0.035 (0.002)***
Constant	2.130 (0.906)**	2.564 (1.066)**	2.595 (0.171)***	2.756 (0.199)***
N	880	880	880	880
R^2	0.241	0.199	0.568	0.552

Note: *significant at 10%; **significant at 5%; ***significant at 1%. Panel Corrected Standard Errors are in parentheses.

While the effects of multilateral intervention support H_{MH}: a humanitarianism-motivation hypothesis, they do not uphold H_{MS}: a self-interest-motivation hypothesis. Whether data for multilateral intervention are taken from Regan (2002) or D&S (2006), it has significant and positive impacts on the improvement of post-war QOL in all the models. Coefficients in Model 6 using D&S UN peace operations data indicate that when the UN intervenes in a civil war, citizens' QOL is likely to rise by about 0.65% each year during a post-war period, relative to when the UN is not involved in the civil war.

Compared to Figure 5.2, this finding implies that the UN is unlikely to randomly select targets to intervene. Recall a preliminary conclusion from Figure 5.2, that is, the consequences of UN intervention may be worse than even unilateral intervention. This initial conclusion is refuted by the findings from the models 3-6 that control for variables making post-war social development easier or harder. A corrected interpretation of Figure 5.2 is that the UN is likely to go to harder cases which have lower baseline prospects for post-war social development.[58]

In sum, I find that whereas unilateral intervention is likely to impede post-war social development, multilateral intervention through the UN tends to promote the improvement of post-war QOL. The negative impacts of unilateral intervention can be explained by the formation of a less-respondent government and limitation of resources available for post-war social policy, which are likely products of the intervention seeking self-interest. On the other hand, the positive effects of UN intervention are associated with the increase of resources available for post-war reconstruction. That is, UN intervention helps a post-war government recover public infrastructures and institutions

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[58] Similarly, Fortna (2008) finds that UN peacekeepers are likely to go to relatively difficult cases where peace is harder to keep.

related to basic needs of citizens by facilitating resource diversion to social policy and by

providing direct development aid. My finding implies that UN intervention is more likely

to be motivated by humanitarian concerns than by interveners' self-interest, which

reinforces previous studies' arguments (e.g., Gilligan and Stedman 2003; Fortna 2004a,

2008).

The differences in post-war developments in Chad and Mozambique, which were

briefly described in Chapter 1, may be associated with the effects of outside intervention.

Chad experienced unilateral intervention by France and showed relatively poor

performance in terms of social development.[59] During the five years after war termination

(1995-1999), Chad's average annual percent change in QOL was 0.58%. My dataset

shows that for all post-war states, the average percent change in QOL for five years after

war is 1.89%. Thus it can be said that Chad had relative difficulty improving social

wellness in the aftermath of civil war. On the other hand, Mozambique underwent UN

intervention, and during the five years after war end (1993-1998), it exhibited a great

performance in social development: the average annual percent change in QOL was

2.83%.[60]

UN missions in Mozambique have been evaluated as one of the most successful

peace operations (Paris 2004; Howard 2008; Fortna 2008). The UN deployed over 6,000

peacekeepers and spent about $1 billion on the reconstruction of Mozambique (Howard

2008). The UN did not only help terminate a long-lasting conflict between a ruling group

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[59] The Chad war started in September 1991 and terminated in December 1995 through a negotiated settlement (Regan 2002; Gent 2008). France began to undertake unilateral intervention in 1991, supporting a government side (Regan 2002).

[60] The Mozambique war started in February 1979 and ended through a negotiated settlement in April 1993 (Regan 2002; Gent 2008). International intervention in the war was transformed from unilateral intervention (up to 1987) to multilateral intervention through the UN (in 1992). UN peace operation in Mozambique continued until 1994.

(FRELIMO) and a rebel group (RENAMO) but also played an important role in recovering public infrastructures and institutions, such as health facilities, schools, and food production mechanisms, through cooperation with UNHCR (Howard 2008; Fortna 2008).

Table 5.4 Intervention with / without Use of Force and Post-War QOL

Variable	Under War Onset Conditions Model 7		Under Post-War Conditions Model 8	
	Coefficient	PCSE	Coefficient	PCSE
Use of Force	-0.508***	0.075	-0.398***	0.051
Int. without Use of Force	0.141	0.121	0.040	0.060
Democracy at war onset	-0.027***	0.007		
Democracy after war end			0.007***	0.003
GDP PC at war onset	-0.233**	0.100		
Δ in GDP PC after war end			0.019**	0.008
Resource Exp. at war onset	1.938***	0.362		
Resource Exp. after war end			2.073***	0.351
Population at war onset	0.096***	0.028		
Ethnic Fractionalization	1.178***	0.299		
Ideological War			0.346***	0.106
QOL at war end			-0.040***	0.002
Military Victory			0.191***	0.070
War Deaths			0.140***	0.019
Elapsed Years since war end			-0.033***	0.002
Constant	1.601*	0.926	2.265***	0.211
N	880		880	
R^2	0.208		0.542	

Note: *significant at 10%; **significant at 5%; ***significant at 1%.

Table 5.4 presents how intervention with or without use of force influences post-war well-being. While the use of military force has negative effects on the percent change in post-war quality of life, intervention without the use of force does not have statistically significant impacts. The use of force is likely to decrease QOL by about 0.4% each year when the post-war conditions are equal.

This result leads us to reconsider the motives of the use of force by third parties in civil war. In Chapter 2, I found that humanitarian disasters generally motivate third parties to use nonviolent methods, but extreme disasters, such as genocide, can encourage them to use military force. I also found that third parties are likely to use military force when their critical strategic interests, such as alliances and contiguity, are at stake. Although the findings suggest that a more general method for humanitarians is likely to be nonviolent intervention, it is not clear which motive (self-interest or humanitarian concerns) is stronger to use armed force. Based on the negative impacts of the use of force, two inferences are possible: one is that self-interest is a stronger motive for the use of force; the other is that the use of force is motivated by humanitarian concerns but has unintended consequences.

Regarding the second inference, one may argue that more human and material costs in target states, which the use of force can bring about, can explain the unintended consequences. However, one of my empirical findings in this chapter is that war costs are likely to be positively associated with post-war QOL improvement. Therefore, I speculate that the first inference—self-interest-based explanation—may be more valid than the second one—unintended consequences of humanitarian intervention. As described earlier, self-serving intervention tends to produce a less-respondent government and limit

resources available for post-war reconstruction, thereby impeding post-war social development. As a result, along with Chapter 2's implication that nonviolent intervention is likely to be a more general method for humanitarians, this chapter's finding suggests that the use of force is more likely to be motivated by interveners' self-interest than by humanitarian concerns.

Biased Intervention, Civil War Outcomes, and the Prospects for Post-War QOL Improvement

Table 5.5 shows how a military victory influences post-war QOL improvement rate and how biased intervention affects the effects of a military victory. When the interaction terms between biased intervention and a military victory are not included (Models 9 and 11), a military victory has significant and positive impacts on QOL improvement, whether a winner is a government or a rebel group. This finding reinforces H_O: a military victory is more likely to positively contribute to post-war social development than does a negotiated settlement.

Table 5.5 Biased Intervention, Military Victory, and Post-War QOL

| | *Under War Onset Conditions* | | *Under Post-War Conditions* | |
| | Model 9 | Model 10 | Model 11 | Model 12 |
Variable	Coefficient	Coefficient	Coefficient	Coefficient
Gov.-Biased Intervention	-0.045 (0.083)	0.290 (0.172)*	-0.240 (0.081)***	-0.305 (0.198)
Gov. Victory	0.551 (0.066)***	0.844 (0.127)***	0.161 (0.068)**	0.030 (0.181)
Gov.-Biased Int.*Gov.Vic.		-0.447 (0.157)***		0.232 (0.185)
Reb.-Biased Intervention	-0.399 (0.060)***	-0.311 (0.050)***	-0.150 (0.098)	-0.039 (0.086)
Reb. Victory	0.839 (0.094)***	1.207 (0.178)***	0.275 (0.124)**	0.447 (0.242)*
Reb.-Biased Int.*Reb.Vic.		-0.644 (0.271)**		-0.427 (0.240)*
Neutral Intervention	2.037 (0.711)***	1.909 (0.671)***	1.852 (0.520)***	1.826 (0.517)***
Democracy at war onset	-0.007 (0.006)	0.0003 (0.005)		
Democracy after war end			0.011 (0.003)***	0.012 (0.004)***
GDP PC at war onset	-0.168 (0.096)*	-0.176 (0.104)*		
Δ in GDP PC after war end			0.017 (0.007)**	0.016 (0.007)**
Resource Exp. at war onset	1.635 (0.430)***	1.781 (0.392)***		
Resource Exp. after war end			1.967 (0.496)***	1.899 (0.496)***
Population at war onset	0.063 (0.026)**	0.065 (0.028)**		
Ethnic Fractionalization	1.704 (0.237)***	1.728 (0.236)***		
Ideological War			0.411 (0.133)***	0.418 (0.146)***
QOL at war end			-0.041 (0.002)***	-0.042 (0.002)***
War Deaths			0.132 (0.014)***	0.125 (0.016)***
Elapsed Years since war			-0.033 (0.002)***	-0.034 (0.002)***
Constant	0.794 (0.967)	0.554 (1.056)	2.465 (0.176)***	2.574 (0.160)***
N	880	880	880	880
R^2	0.273	0.280	0.575	0.584

Note: *significant at 10%; **significant at 5%; ***significant at 1%. Panel Corrected Standard Errors are in parentheses.

The test results, however, show that even though a military victory is more likely than a negotiated settlement to be favorable to post-war social development, its effects are conditional on whether a winner received biased support from third-party interveners during civil war, which supports H_{BO} that specifies interaction effects between military victory and biased intervention. Models 10 and 12 show that an interaction term between government-biased intervention and government victory has significant and negative impacts on QOL improvement rates, or does not have significant effects. This result means that when a government supported by foreign powers won a civil war, post-war QOL is likely to drop or unlikely to significantly change. Therefore, it can be said that government-biased intervention is likely to cancel out the positive impacts of government victory (Model 12) or lead government victory to have even negative impacts on post-war QOL (Model 10).

The interaction term between rebel-biased intervention and rebel victory has statistically significant and negative effects in both models, which provides consistent and strong conclusions. When a rebel group won a civil war under the auspices from biased interveners, post-war QOL is likely to annually fall by more than 0.4%. Rebel victory has positive impacts on post-war QOL in both models 10 and 12, meaning that when a rebel group defeats a government without outside support, citizens' QOL is likely to significantly improve. Therefore, it can be concluded that if a rebel group wins a military victory on their own, a post-war government is more likely to succeed in improving QOL and reconstructing the state. For example, Liberian civil war (1989-1996) ended through a military victory by a rebel group which was not supported by foreign powers (Regan 2002; Gent 2008). During the four years after war, Liberia's average

annual change in QOL was 4.53%. This improvement rate is a remarkable record, compared to 1.93% which is an average annual change during four years after war end for all post-war states.

Table 5.5 also presents that the effects of biased intervention on post-war social development are different from those of neutral intervention. Model 11 controlling for post-war conditions shows that the outside support for a government is likely to impede social development after civil war, and the support for a rebel group is unlikely to have significant impacts. On the other hand, surprisingly, in all the models, neutral intervention has significant and positive effects on the improvement of post-war QOL. When foreign powers undertake neutral intervention in civil war, post-war QOL is likely to improve by more than 1.8% each year, compared to when they do not engage in neutral intervention (Models 11 and 12). This finding implies that neutral interveners play a positive role in relieving urgent human hardship and constructing institutions and infrastructures related to public services in the aftermath of civil war, regardless of which party won the civil war. Neutral interveners, which rely on the consent of both combatants, have moral authority and legitimacy, whereas biased interveners do not (Fortna 2008). Therefore, they can more easily induce a target state's domestic groups to cooperate with each other for post-war reconstruction projects, mobilize more development aid from international communities, and ensure that the aid goes toward improving citizens' well-being.

The results of both government- or rebel-biased intervention on post-war social development is pessimistic. Biased interveners that contribute to military victory are likely to remove a chance that a winner restores war-torn society and meets citizens'

basic needs. In particular, when we controls for post-war conditions (Models 11 and 12), rebel-biased intervention has significantly negative impacts on the improvement of post-war QOL only when their protégé wins a military victory. One interpretation of this finding is associated with interveners' self-serving behavior. When biased interveners' protégé win a civil war and controls a post-war government, the interveners can have an incomparable opportunity to exert influence on post-war policy in order to expand their own wealth and power. In the meanwhile, the post-war state is likely to have the hardest time to meet citizens' urgent needs.

Another interpretation is that biased intervention motivated by humanitarian concerns may result in unintentional consequences. As I described earlier, humanitarian interveners' efforts to reform post-war governmental systems and their development aid can unintentionally weaken the government's legitimacy and accountability to citizens. My empirical findings thus imply that if humanitarian interveners undertake biased intervention and their protégé wins a victory, the disadvantages (the weakening of governmental accountability) of humanitarian intervention can outweigh its advantages (the contribution of development aid to post-war reconstruction).

There has been debate about whether humanitarian interveners should have a neutral or biased position. While Rieff (2002) argues that neutrality and impartiality are still important norms that the international community should keep to help people suffering from civil conflict, Weiss (1999) contends that those norms are not effective to save lives at risk and humanitarian interveners should side with victims. My findings support Rieff's (2002) argument, showing that neutral intervention is likely to significantly promote the improvement of post-war QOL, and biased intervention may

have adverse effects. Unbiased intervention can increase resources available for post-war development, and it is less likely to weaken governmental accountability.

Conclusion

In this chapter, I have sought to answer why some states succeed in improving social wellness in the aftermath of civil war and others fail to do so. Although many other factors can influence post-war QOL, I have proposed that intervention methods and civil war outcomes are likely to make differences in post-war social development. The types of intervention are reflections of interveners' motives, self-interest or humanitarian concerns. Different motives result in different consequences. I find that unilateral intervention is likely to have negative impacts on the improvement of post-war QOL. The negative effects are associated with the formation of a less-respondent government and limitation of available resources, which are likely products of unilateral intervention seeking self-interest. On the other hand, multilateral intervention on humanitarian grounds tends to promote post-war social development because it can increase resources available for post-war social policy. Also, I find that the use of force is likely to impede the improvement of post-war quality of life. This finding, along with Chapter 2's implication, suggests that the use of force is more likely to be motivated by self-interest than by humanitarian concerns.

Another causal path to post-war development is associated with war outcomes. I found that a military victory is more likely to improve post-war QOL than is a negotiated settlement. However, the effects of a military victory depend on whether a victor was supported by foreign interveners. Biased intervention tends to cancel out the positive

impacts of military victory on post-war QOL improvement. In particular, when a rebel group supported by foreign powers wins a victory, post-war QOL is likely to significantly decrease. On the other hand, neutral intervention is likely to significantly improve post-war social wellness. As a result, the empirical findings imply that multilateral intervention using nonviolent methods and holding an unbiased position is the best way for the international community to promote the improvement of quality of life in war-torn states.

CHAPTER 6

CONCLUSION

This thesis raised the following questions: why, when, and how do third parties intervene in civil wars?; how do they influence the duration and outcome of civil war?; how do they affect post-war development? Addressing these questions, I have argued that the motive, method, and consequences of intervention are closely associated with each other. The empirical findings show that the motive of intervention guides the methods of intervention, and the methods make differences in the consequences of intervention. While the effect of intervention on civil war duration and outcome tends to be inconsistent with the intervener's intention, its effect on post-war development is likely to be somewhat consistent with its intention.

Understanding the relationships among the motive, method, and consequence of intervention helps us solve the puzzle of intervention effects, which was introduced in Chapter 1. Concluding this thesis, I first summarize my findings concerning the puzzle. Next, I describe the contributions to the literature, provide implications for policy makers, and present my plans for the future research.

Summary of Findings

For the study of civil war intervention, I began by illuminating why and how foreign powers intervene in civil wars. By adding intervention timing into my analytical framework, I sought to provide more implications about decisions on civil war intervention. I found that two contrasting motives, self-interest and humanitarian

concerns, make differences in intervention methods and timing. When strategic interests are at stake, third parties tend to more quickly undertake unilateral and biased interventions. Mutual interests of major powers can facilitate a compromise among them for multilateral intervention. Interveners are likely to use violent methods when a civil war is related to their critical security interests (e.g., an alliance or geographical contiguity with a civil war state).

On the other hand, when interveners are motivated by humanitarian concerns, they tend to more swiftly opt for multilateral and biased interventions. Although traditional norms of humanitarian intervention emphasize neutrality and impartiality, intensification of violent conflict can induce interveners to distinguish perpetrators from victims and engage in biased intervention. I also found that nonviolent intervention is likely to be a more general method of humanitarian intervention, but extreme humanitarian disasters, such as genocide, tend to prompt interveners to use military force against the perpetrators.

Motivated by self-interest or humanitarian concerns, third parties attempt to affect the duration and outcome of civil war. To do so, biased interveners try to favorably change the balance of power to produce a fast victory for their protégé, while neutral interveners make efforts to preserve the current power balance to help combatants reach an agreement. My empirical findings, however, show that the consequences of intervention are likely to be inconsistent with the interveners' intention. Both biased and neutral interventions are likely to reduce, rather than augment, the capability gap between a government and a rebel group. Either government- or rebel-biased interveners tend to fail to contribute to their protégé's fast victory, but succeed in delaying the opposing

group's victory. Neutral intervention is likely to retard a victory for a government, and have no significant effect on other types of war termination. I found no empirical evidence that intervention generally makes civil war shorter.

Why do third parties tend to fail to accomplish their best outcome: a faster military victory or negotiated settlement? While biased interveners considering the efficiency of intervention support one side that does not have enough capability to win a decisive victory on its own, they can provoke backlash from the other group and its domestic supporters, thereby unintentionally helping the opposing group augment its strength. My dynamic model captures the selective assistance by interveners and the backfire effect. The equilibria and simulation results of the dynamic model imply that while the absence of intervention enables one group to be a superior power and win a decisive victory, its presence makes it difficult for either of the two groups to be a dominant power, thereby producing military stalemate and prolonging a civil war. The dynamic model considering the backfire effect helps explain why biased interveners failed to achieve their goals in Afghanistan and Somalia and why those wars persisted (or persists) for so long.

The dynamic model also can explain why neutral intervention tends to be unsuccessful in helping combatants reach a fast peace agreement. The model shows that while a neutral intervener tries to equally stunt the growth of both combatants, the group holding a competitive advantage increases its relative capability. That is, the presence of neutral interveners may become a growth opportunity for the side that receives more political support from citizens or has higher resolve, regardless of the neutral intervener's

intention. Therefore, neutral interveners are likely to fail to preserve the current balance of power, making a negotiated settlement more difficult.

Unlike the effects of intervention on the duration and outcome of civil war, its impacts on post-war development are likely to somewhat match with interveners' intentions. I found that multilateral intervention which is more likely to be motivated by humanitarian concerns than by self-interest tends to promote social development in war-torn states. It does so by enabling resource diversion and by providing development aid. On the other hand, unilateral intervention, as an indicator of self-serving intervention, is likely to impede the improvement of post-war quality of life (QOL). The reasons are associated with the formation of a less-respondent government and limitation of resources available for rebuilding post-war society. The difference in intervention methods that reflect interveners' motives can account for why Mozambique was successful in improving citizens' quality of life in the aftermath of civil war and why Chad was relatively unsuccessful, a contrast which was underscored in Chapter 1.

My empirical findings in Chapter 5 also suggest that when third parties use military force in civil war, the post-war state is likely to have more difficulty improving QOL. I speculate that the reason may be associated with interveners' motives rather than destruction by the use of force. Chapter 2's findings imply that nonviolent intervention is likely to be a more general method for humanitarian interveners, as long as a civil war does not produce extreme humanitarian disasters, such as genocide. Along with that implication, Chapter 5's findings suggest that in general self-interest may be a stronger motive for the use of force.

I also found that the outcome of civil war can influence post-war social development. Generally, a military victory by one side is more likely than a negotiated settlement to improve post-war QOL. However, the effects of military victory are likely to depend on whether a victor received biased external support during civil war. Biased intervention may cancel out the positive impacts of military victory or lead the victory to have negative impacts on post-war social development. While biased intervention tends to delay post-war social development, neutral intervention is likely to have positive effects on post-war QOL improvement. This finding suggests that unbiased intervention can ensure that development aid goes toward improving citizens' well-being and it is less likely to weaken governmental accountability.

In Chapter 1, I speculated about the future of Libya. My findings imply that the future of Libya may not be optimistic. International intervention in Libya in 2011 was multilateral, biased, and resorted to violent methods. While multilateral intervention is more likely to be motivated by humanitarian concerns than by self-interest, the use of force may be closer to self-seeking interveners' strategies, as described earlier. My findings also show that although multilateral intervention positively contribute to post-war social development, the use of force is likely to impede the improvement of post-war QOL. Furthermore, I found that when foreign powers undertake rebel-biased intervention and the rebel group wins a victory, which is the case in Libya, the post-war state is likely to have difficulty improving citizens' quality of life. Therefore, unfortunately, my findings make it hard for us to expect that Libya will succeed in quickly rebuilding post-war society and improving citizens' quality of life. Even though multilateral intervention

in Libya was fairly successful in quickly terminating the war, Libya's future may not be promising.

Contributions to the Literature

This thesis presented a conceptual framework in which the motive and method of intervention explain the divergent consequences of civil war intervention. Overall, my findings show that intervention methods reflecting interveners' motives and goals are likely to make differences in the short- and long-term outcome of third-party intervention. The illumination of the relationship among the motive, method, and consequence of intervention is the central contribution of this research project to the literature on civil war intervention. Additionally, each chapter of this thesis extends understanding of the cause and consequences of civil war intervention by finding new empirical relationships, examining diverse viewpoints, and demonstrating the usefulness of alternative research tools.

In Chapter 2, I augment the understanding of civil war intervention by simultaneously examining the determinants of both the timing and methods of intervention. The existing literature has mainly focused on why foreign powers intervene in civil wars, and found that self-interest and humanitarian concerns can be significant incentives of intervention. I extend the literature by investigating how those two motives influence the methods and timing of intervention which, in turn, influence the costs of civil war and intervention. Also, Chapter 2 makes another contribution in terms of research design. While previous works examining the relationships between international norms and civil war intervention have mainly relied on qualitative research methods or

case studies, I test humanitarian norms-based hypotheses using a large-N statistical analysis. I show that a quantitative method can be an effective tool to examine the relationships between international norms and states' behavior.

Chapter 3 makes a unique contribution to the literature by developing a dynamic formal model of third-party intervention in civil war. I borrowed a competitive hunters model from biology, and applied it to the study of civil war processes. A dynamic model of intervention which is built on a competitive hunters model effectively captures the interactions among internal combatants and an external intervener over time. Comparing an intervention model with the baseline model provides insight into the process and outcome of civil war. While many previous studies of civil war processes have used a predator-prey model, a competitive hunters model has rarely been used for studying civil war processes. I show that a dynamic model based on a competitive hunters model can greatly extend understanding of the evolutionary process of civil war, and thus it offers an alternative tool for researchers studying the process and outcome of civil war.

In Chapters 3 and 4, I provide an alternative explanation for the consequences of intervention with a bottom-up approach. Similar to my study, several prior studies show that interveners often produce unintended consequences: a longer war or a failure in achieving fast victory for their protégé (e.g., Gent 2008; Cunningham 2010). Scholars reason that the undesirable consequences may result because interveners have greater interest in the war outcome than in its duration, and because interventions tend to occur in civil wars in which the capability gap between combatants is narrow. While prior studies mainly have top-down standpoints, I view intervention with a bottom-up approach that considers the perspective of combatants, their domestic patrons and citizens, while still

keeping in mind the lessons from the top-down approaches. By doing so, I learn that backlash against international intervention can be another important reason for the unintended consequences of civil war intervention. Considering internal reactions to external intervention, we are better able to understand interventions' effects.

Chapter 5 extends the literature on post-civil war development. The existing literature has presented important findings concerning post-war peace, post-war democratization, and post-war economic development. I extend the literature by identifying factors that influence the improvement of post-war quality of life which is related to urgent human needs in war-torn states. The governmental ability to provide basic public goods and improve citizens' quality of life is an important condition of state-building. My research on post-war social development therefore can make a meaningful contribution to the study of post-war state-building. Also, by examining the motives and consequences of UN intervention in Chapters 2 and 5, this thesis provides important implications for the literature on international organizations.

Implications

Tragedies caused by civil conflicts have aroused humanitarian concerns of the public and policy makers in the international community. Those concerns have been reflected in the emerging "Responsibility to Protect" norm, which was accepted in the 2005 UN World Summit. This norm obligates the international community to protect a population when a state fails to protect its people from violent conflicts or war crimes. The new norm has been used as justification for the UN's biased interventions in Libya

and the Ivory Coast in 2011, both of which resulted in military clashes against the government.

Even though recently the international community, via IOs or state mechanisms, has engaged in more purposive and decisive intervention, this thesis suggests that the international community should more prudently make decisions on intervention. First, when IOs or states attempt to influence the outcome of civil war, they should consider that the intervention may have unintended consequences. My findings imply that external military or economic intervention, even when it has humanitarian motives, may fail to contribute to a fast military victory or negotiated settlement in general. It tends to prolong civil war. Longer war not only increases human suffering in civil war states, but also raises the costs for interveners. Therefore, the international community should take into account that a "good motive" does not necessarily produce a "good result."

Second, the general implication that the effect of outside intervention on war duration and outcome tends to be inconsistent with its intention does not mean that we should remain bystanders at the tragic scenes of civil wars. My dynamic model suggests that if intervention meets specific conditions, it can contribute to a fast conflict resolution. If we suppose that the UN was successful in terminating the Libyan civil war in 2011, the dynamic model provides two possible reasons: 1) multilateral forces supported a group having competitive advantages (e.g., larger political support from citizens implied by higher natural growth rate); 2) they produced little backlash, in other words, resistance against international intervention did not translate into an increased fighting capability of Gaddafi's regime (i.e., a smaller value of f in the equation 6 in Chapter 3). Using the dynamic model, this reasoning can help understand how humanitarian interveners can

produce intended consequences. I suggest that if urgent intervention is necessary to save lives, the international community should take into account how it can reduce backlash and whether a group that it intends to assist has larger political support from citizens. It should also consider that the intervention might negatively affect post-war development.

Third, this thesis provides a policy implication that post-war activities for humanitarian relief and institutional rebuilding can substantively improve citizens' quality of life as long as they do not erode governmental accountability. In order to prevent the weakening of governmental accountability, the assistance needs to be via multilateral channels, such as the UN and its sub-organizations and affiliates. Such a multilateral intervention can reduce the possibility that individual states seeking their own interests attempt to expand their influence on post-war states and form a less-respondent government. If interveners do not focus on gaining their own strategic interests, their development aid can greatly contribute to social development in war-torn states.

Future Extensions

For future research, I mainly focus on the study of post-war development and state-building. First, I will investigate how UN peacekeeping missions influence the improvement of post-war quality of life. Although this thesis found that UN intervention has generally positive impacts on post-war well-being, it did not consider different mechanisms of various UN peacekeeping missions. Scholars have classified those missions into two categories: consent-based missions and enforcement missions (e.g., Fortna 2008). The consent-based missions again have three types: observation missions;

traditional peacekeeping missions; and multidimensional missions. These methods of intervention may have different effects on post-war social development. One expectation is that consent-based missions can outperform enforcement missions because they can promote more cooperation with target states for post-war reconstruction. Also, we can expect that of the three types of consent-based missions, multidimensional missions may be the most effective to improve post-war social wellness because they can include the most comprehensive efforts to aid post-war reconstruction.

Second, I will study the relationship between civil war outcome and post-war state-building. One of the findings of this thesis is that post-war social development is likely to depend on the outcome of civil war. This finding suggests that there may be similar relationships between civil war outcomes and post-war state-building. We can speculate that a military victory is more likely than a negotiated settlement to increase the prospect for post-war state-building because it can facilitate a monopoly of violence by the post-war government, which is an important feature of modern states (Weber 1946). The prospect for state-building can be measured by observing the government's capability to extract taxes (Thies 2004). This future study can extend understanding of the relationship between civil war and state-building.

Third, I will further explore the relationship between international intervention and state-building. In this thesis, I found that external intervention significantly affects post-civil war social development, and the effects may differ with intervention methods reflecting interveners' motives. Similar reasoning can be applied to the study of international state-building. Through this future research, we can learn how foreign powers can promote or impede state-building, particularly in developing countries.

APPENDIX

ADDITIONAL INFORMATION FOR CHAPTER 3

Table A.1 Equilibria and Eigenvalues for a Baseline Model

Equilibrium (G^*, R^*)	Eigenvalue
1. $(0,0)$	$\{a, c\}$
2. $(k_g, 0)$	$\{-a, c - ek_g\}$
3. $(0, k_r)$	$\{-c, a - bk_r\}$
4. $\left(-\frac{ack_g - bck_g k_r}{-ac + bek_g k_r}, -\frac{-ack_r + aek_g k_r}{ac - bek_g k_r}\right)$	$\{\frac{1}{2(ac - bek_g k_r)}(-a^2 c - ac^2 + acek_g + abck_r$ $-\sqrt{\left(a^2 c + ac^2 - acek_g - abck_r\right)^2 - 4(ac - bek_g k_r)\left(a^2 c^2 - a^2 cek_g - abc^2 k_r + abcek_g k_r\right)}),$ $\frac{1}{2(ac - bek_g k_r)}(-a^2 c - ac^2 + acek_g + abck_r$ $+\sqrt{(a^2 c + ac^2 - acek_g - abck_r)^2 - 4(ac - bek_g k_r)(a^2 c^2 - a^2 cek_g - abc^2 k_r + abcek_g k_r)})\}$

Table A.2 Equilibria and Eigenvalues for a Government-Biased Intervention Model

Equilibrium (G^*, R^*, I_g^*)	Eigenvalue
1. $(k_g, 0, 0)$	$\{-a, -j, c - ek_g\}$
2. $\left(\frac{ck_g(a-bk_r)}{ac-bek_gk_r}, \frac{ak_r(c-ek_g)}{ac-bek_gk_r}, 0\right)$	$\{-j, \frac{1}{2(ac - bek_gk_r)}(-a^2c - ac^2 + acek_g + abck_r$ $- \sqrt{(a^2c + ac^2 - acek_g - abck_r)^2 - 4(ac - bek_gk_r)(a^2c^2 - a^2cek_g - abc^2k_r + abcek_gk_r)}),$ $\frac{1}{2(ac - bek_gk_r)}(-a^2c - ac^2 + acek_g + abck_r$ $+ \sqrt{(a^2c + ac^2 - acek_g - abck_r)^2 - 4(ac - bek_gk_r)(a^2c^2 - a^2cek_g - abc^2k_r + abcek_gk_r)})\}$

Table A.2 Continued

Equilibrium (G^*, R^*, I_g^*)

3.

$$\left(\frac{cfjk_g + efmk_gk_r + ahmk_gk_r + \sqrt{-4cfmk_gk_r(ahmk_r + bhjk_gk_r) + (-cfjk_g - efmk_gk_r - ahmk_gk_r)^2}}{2(ahmk_r + bhjk_gk_r)}, \frac{1}{m}\left(\frac{cfj^2k_g}{2(ahmk_r + bhjk_gk_r)} + \frac{efjmk_gk_r}{2(ahmk_r + bhjk_gk_r)} + \frac{ahjmk_gk_r}{2(ahmk_r + bhjk_gk_r)} + \right.\right.$$

$$\left.\frac{j\sqrt{-4cfmk_gk_r(ahmk_r + bhjk_gk_r) + (-cfjk_g - efmk_gk_r - ahmk_gk_r)^2}}{2(ahmk_r + bhjk_gk_r)}\right), \frac{1}{h}\left(-c + \frac{cefjk_g}{ahmk_r + bhjk_gk_r} + \frac{achjk_g}{2(ahmk_r + bhjk_gk_r)} + \frac{c^2fj^2k_g}{2mk_r(ahmk_r + bhjk_gk_r)} + \frac{e^2fmk_gk_r}{2(ahmk_r + bhjk_gk_r)} + \right.$$

$$\left.\left.\frac{aehmk_gk_r}{2(ahmk_r + bhjk_gk_r)} + \frac{e\sqrt{-4cfmk_gk_r(ahmk_r + bhjk_gk_r) + (-cfjk_g - efmk_gk_r - ahmk_gk_r)^2}}{2(ahmk_r + bhjk_gk_r)} + \frac{cj\sqrt{-4cfmk_gk_r(ahmk_r + bhjk_gk_r) + (-cfjk_g - efmk_gk_r - ahmk_gk_r)^2}}{2mk_r(ahmk_r + bhjk_gk_r)}\right)\right)$$

4.

$$\left((cfjk_g + efmk_gk_r + ahmk_gk_r - \sqrt{-4cfmk_gk_r(ahmk_r + bhjk_gk_r) + (-cfjk_g - efmk_gk_r - ahmk_gk_r)^2})/(2(ahmk_r + bhjk_gk_r)), \frac{1}{m}\left(\frac{cfj^2k_g}{2(ahmk_r + bhjk_gk_r)} + \right.\right.$$

$$\left.\frac{efjmk_gk_r}{2(ahmk_r + bhjk_gk_r)} + \frac{ahjmk_gk_r}{2(ahmk_r + bhjk_gk_r)} - (j\sqrt{(-4cfmk_gk_r(ahmk_r + bhjk_gk_r) + (-cfjk_g - efmk_gk_r - ahmk_gk_r)^2)})/(2(ahmk_r + bhjk_gk_r))\right), \frac{1}{h}\left(-c + \right.$$

$$\left.\frac{cefjk_g}{ahmk_r + bhjk_gk_r} + \frac{achjk_g}{2(ahmk_r + bhjk_gk_r)} + \frac{c^2fj^2k_g}{2mk_r(ahmk_r + bhjk_gk_r)} + \frac{e^2fmk_gk_r}{2(ahmk_r + bhjk_gk_r)} + \frac{aehmk_gk_r}{2(ahmk_r + bhjk_gk_r)} - \frac{e\sqrt{-4cfmk_gk_r(ahmk_r + bhjk_gk_r) + (-cfjk_g - efmk_gk_r - ahmk_gk_r)^2}}{2(ahmk_r + bhjk_gk_r)} - \right.$$

$$\left.\left.\frac{cj\sqrt{-4cfmk_gk_r(ahmk_r + bhjk_gk_r) + (-cfjk_g - efmk_gk_r - ahmk_gk_r)^2}}{2mk_r(ahmk_r + bhjk_gk_r)}\right)\right)$$

Note: Eigenvalues for these equilibria are too cumbersome to be shown here. They run several pages.

Table A.3 Equilibria and Eigenvalues for a Rebel-Biased Intervention Model

Equilibrium (G^*, R^*, I_r^*)	Eigenvalue
1. $(0, k_r, 0)$	$\{-c, -j, a - bk_r\}$
2. $\left(\frac{ck_g(a-bk_r)}{ac-bek_gk_r}, \frac{ak_r(c-ek_g)}{ac-bek_gk_r}, 0\right)$	$\{-j, \frac{1}{2(ac-bek_gk_r)}(-a^2c - ac^2 + acek_g + abck_r$ $-\sqrt{(a^2c + ac^2 - acek_g - abck_r)^2 - 4(ac - bek_gk_r)(a^2c^2 - a^2cek_g - abc^2k_r + abcek_gk_r)}),$ $\frac{1}{2(ac-bek_gk_r)}(-a^2c - ac^2 + acek_g + abck_r$ $+\sqrt{(a^2c + ac^2 - acek_g - abck_r)^2 - 4(ac - bek_gk_r)(a^2c^2 - a^2cek_g - abc^2k_r + abcek_gk_r)})\}$

Table A.3 Continued

Equilibrium (G^*, R^*, I_r^*)
3.

$$\left(\frac{\frac{ahj^2k_r}{2(cfmk_g + efjk_gk_r)} + \frac{cfjmk_gk_r}{2(cfmk_g + efjk_gk_r)} + \frac{bhjmk_gk_r}{2(cfmk_g + efjk_gk_r)} + \frac{j\sqrt{-4ahmk_gk_r(cfmk_g + efjk_gk_r) + (-ahjk_r - cfmk_gk_r - bhmk_gk_r)^2}}{2(cfmk_g + efjk_gk_r)}}{m}, \right.$$

$$\frac{ahjk_r + cfmk_gk_r + bhmk_gk_r + \sqrt{-4ahmk_gk_r(cfmk_g + efjk_gk_r) + (-ahjk_r - cfmk_gk_r - bhmk_gk_r)^2}}{2(cfmk_g + efjk_gk_r)},$$

$$\frac{1}{h}\left(-\frac{ac^2fhm^2k_g^2}{(cfmk_g + efjk_gk_r)^2} + \frac{a^2ch^2j^2k_r}{2(cfmk_g + efjk_gk_r)^2} + \frac{ac^2fhjmk_gk_r}{(cfmk_g + efjk_gk_r)^2} + \frac{abch^2jmk_gk_r}{(cfmk_g + efjk_gk_r)^2} - \frac{2acefhjmk_g^2k_r}{(cfmk_g + efjk_gk_r)^2} + \frac{c^3f^2m^2k_g^2k_r}{2(cfmk_g + efjk_gk_r)^2} + \frac{bc^2fhm^2k_g^2k_r}{(cfmk_g + efjk_gk_r)^2} \right.$$

$$+ \frac{b^2ch^2m^2k_g^2k_r}{2(cfmk_g + efjk_gk_r)^2} + \frac{a^2eh^2j^3k_r^2}{2m(cfmk_g + efjk_gk_r)^2} + \frac{acefhj^2k_gk_r^2}{(cfmk_g + efjk_gk_r)^2} + \frac{abeh^2j^2k_gk_r^2}{(cfmk_g + efjk_gk_r)^2} - \frac{ae^2fhj^2k_g^2k_r^2}{(cfmk_g + efjk_gk_r)^2} + \frac{c^2ef^2jmk_g^2k_r^2}{2(cfmk_g + efjk_gk_r)^2} + \frac{bcefhjmk_g^2k_r^2}{(cfmk_g + efjk_gk_r)^2}$$

$$+ \frac{b^2eh^2jmk_g^2k_r^2}{2(cfmk_g + efjk_gk_r)^2} - \frac{achjk_r}{2(cfmk_g + efjk_gk_r)} - \frac{c^2fmk_gk_r}{2(cfmk_g + efjk_gk_r)} - \frac{bchmk_gk_r}{2(cfmk_g + efjk_gk_r)}$$

$$+ \frac{achj\sqrt{-4ahmk_gk_r(cfmk_g + efjk_gk_r) + (-ahjk_r - cfmk_gk_r - bhmk_gk_r)^2}}{2(cfmk_g + efjk_gk_r)^2} + \frac{c^2fmk_g\sqrt{-4ahmk_gk_r(cfmk_g + efjk_gk_r) + (-ahjk_r - cfmk_gk_r - bhmk_gk_r)^2}}{2(cfmk_g + efjk_gk_r)^2}$$

$$+ \frac{bchmk_g\sqrt{-4ahmk_gk_r(cfmk_g + efjk_gk_r) + (-ahjk_r - cfmk_gk_r - bhmk_gk_r)^2}}{2(cfmk_g + efjk_gk_r)^2} + \frac{aehj^2k_r\sqrt{-4ahmk_gk_r(cfmk_g + efjk_gk_r) + (-ahjk_r - cfmk_gk_r - bhmk_gk_r)^2}}{2m(cfmk_g + efjk_gk_r)^2}$$

$$+ \frac{cefjk_gk_r\sqrt{-4ahmk_gk_r(cfmk_g + efjk_gk_r) + (-ahjk_r - cfmk_gk_r - bhmk_gk_r)^2}}{2(cfmk_g + efjk_gk_r)^2} + \frac{behjk_gk_r\sqrt{-4ahmk_gk_r(cfmk_g + efjk_gk_r) + (-ahjk_r - cfmk_gk_r - bhmk_gk_r)^2}}{2(cfmk_g + efjk_gk_r)^2}$$

$$\left. \left. - \frac{c\sqrt{-4ahmk_gk_r(cfmk_g + efjk_gk_r) + (-ahjk_r - cfmk_gk_r - bhmk_gk_r)^2}}{2(cfmk_g + efjk_gk_r)} \right) \right)$$

Note: Eigenvalues for this equilibrium are too cumbersome to be shown here. They run several pages.

Table A.3 Continued

Equilibrium (G^*, R^*, I_r^*)
4.

$$\left(\frac{\frac{ahj^2k_r}{2(cfmk_g+efjk_gk_r)}+\frac{cfjmk_gk_r}{2(cfmk_g+efjk_gk_r)}+\frac{bhjmk_gk_r}{2(cfmk_g+efjk_gk_r)}-\frac{j\sqrt{-4ahmk_gk_r(cfmk_g+efjk_gk_r)+(-ahjk_r-cfmk_gk_r-bhmk_gk_r)^2}}{2(cfmk_g+efjk_gk_r)}}{m},\right.$$

$$\frac{ahjk_r+cfmk_gk_r+bhmk_gk_r-\sqrt{-4ahmk_gk_r(cfmk_g+efjk_gk_r)+(-ahjk_r-cfmk_gk_r-bhmk_gk_r)^2}}{2(cfmk_g+efjk_gk_r)},$$

$$\frac{1}{h}\left(-\frac{ac^2fhm^2k_g^2}{(cfmk_g+efjk_gk_r)^2}+\frac{a^2ch^2j^2k_r}{2(cfmk_g+efjk_gk_r)^2}+\frac{ac^2fhjmk_gk_r}{(cfmk_g+efjk_gk_r)^2}+\frac{abch^2jmk_gk_r}{(cfmk_g+efjk_gk_r)^2}-\frac{2acefhjmk_g^2k_r}{(cfmk_g+efjk_gk_r)^2}+\frac{c^3f^2m^2k_g^2k_r}{2(cfmk_g+efjk_gk_r)^2}+\frac{bc^2fhm^2k_g^2k_r}{(cfmk_g+efjk_gk_r)^2}\right.$$

$$+\frac{b^2ch^2m^2k_g^2k_r}{2(cfmk_g+efjk_gk_r)^2}+\frac{a^2eh^2j^3k_r^2}{2m(cfmk_g+efjk_gk_r)^2}+\frac{acefhj^2k_gk_r^2}{(cfmk_g+efjk_gk_r)^2}+\frac{abeh^2j^2k_gk_r^2}{(cfmk_g+efjk_gk_r)^2}-\frac{ae^2fhj^2k_g^2k_r^2}{(cfmk_g+efjk_gk_r)^2}+\frac{c^2ef^2jmk_g^2k_r^2}{2(cfmk_g+efjk_gk_r)^2}+\frac{bcefhjmk_g^2k_r^2}{(cfmk_g+efjk_gk_r)^2}$$

$$+\frac{b^2eh^2jmk_g^2k_r^2}{2(cfmk_g+efjk_gk_r)^2}-\frac{achjk_r}{2(cfmk_g+efjk_gk_r)}-\frac{c^2fmk_gk_r}{2(cfmk_g+efjk_gk_r)}-\frac{bchmk_gk_r}{2(cfmk_g+efjk_gk_r)}$$

$$-\frac{achj\sqrt{-4ahmk_gk_r(cfmk_g+efjk_gk_r)+(-ahjk_r-cfmk_gk_r-bhmk_gk_r)^2}}{2(cfmk_g+efjk_gk_r)^2}-\frac{c^2fmk_g\sqrt{-4ahmk_gk_r(cfmk_g+efjk_gk_r)+(-ahjk_r-cfmk_gk_r-bhmk_gk_r)^2}}{2(cfmk_g+efjk_gk_r)^2}$$

$$-\frac{bchmk_g\sqrt{-4ahmk_gk_r(cfmk_g+efjk_gk_r)+(-ahjk_r-cfmk_gk_r-bhmk_gk_r)^2}}{2(cfmk_g+efjk_gk_r)^2}-\frac{aeh^2j^2k_r\sqrt{-4ahmk_gk_r(cfmk_g+efjk_gk_r)+(-ahjk_r-cfmk_gk_r-bhmk_gk_r)^2}}{2m(cfmk_g+efjk_gk_r)^2}$$

$$-\frac{cefjk_gk_r\sqrt{-4ahmk_gk_r(cfmk_g+efjk_gk_r)+(-ahjk_r-cfmk_gk_r-bhmk_gk_r)^2}}{2(cfmk_g+efjk_gk_r)^2}-\frac{behjk_gk_r\sqrt{-4ahmk_gk_r(cfmk_g+efjk_gk_r)+(-ahjk_r-cfmk_gk_r-bhmk_gk_r)^2}}{2(cfmk_g+efjk_gk_r)^2}$$

$$\left.\left.+\frac{c\sqrt{-4ahmk_gk_r(cfmk_g+efjk_gk_r)+(-ahjk_r-cfmk_gk_r-bhmk_gk_r)^2}}{2(cfmk_g+efjk_gk_r)}\right)\right)$$

Note: Eigenvalues for this equilibrium are too cumbersome to be shown here. They run several pages.

Table A.4 Equilibria and Eigenvalues for a Neutral Intervention Model

Equilibrium (G^*, R^*, I_n^*)	Eigenvalue
1. $(0,0,0)$	$\{a, c, -j\}$
2. $(k_g, 0, 0)$	$\{-a, \frac{1}{2}(c - j - \mathrm{ek}_1 - \sqrt{(-c + j + \mathrm{ek}_1)^2 - 4(-cj + j\mathrm{ek}_1 + h\mathrm{mk}_1)}), \frac{1}{2}(c - j - \mathrm{ek}_1$ $+ \sqrt{(-c + j + \mathrm{ek}_1)^2 - 4(-cj + j\mathrm{ek}_1 + h\mathrm{mk}_1)})\}$
3. $(0, k_r, 0)$	$\{-c, \frac{1}{2}(a - j - bk_2 - \sqrt{(-a + j + bk_2)^2 - 4(-aj + bjk_2 + fmk_2)}), \frac{1}{2}(a - j - bk_2$ $+ \sqrt{(-a + j + bk_2)^2 - 4(-aj + bjk_2 + fmk_2)})\}$

Table A.4 Continued

Equilibrium (G^*, R^*, I_n^*)

4.

$$\left(\frac{acj^2k_g - bcj^2k_gk_r - cfjmk_gk_r}{acj^2 - bej^2k_gk_r - efjmk_gk_r - bhjmk_gk_r - fhm^2k_gk_r},\right.$$

$$(aj(acj^2k_g - bcj^2k_gk_r - cfjmk_gk_r)(1 - (acj^2k_g - bcj^2k_gk_r - cfjmk_gk_r)/(k_g(acj^2 - bej^2k_gk_r - efjmk_gk_r - bhjmk_gk_r - fhm^2k_gk_r))))/$$

$$((acj^2 - bej^2k_gk_r - efjmk_gk_r - bhjmk_gk_r - fhm^2k_gk_r)$$

$$\left(\frac{bj(acj^2k_g - bcj^2k_gk_r - cfjmk_gk_r)}{acj^2 - bej^2k_gk_r - efjmk_gk_r - bhjmk_gk_r - fhm^2k_gk_r} + \frac{fm(acj^2k_g - bcj^2k_gk_r - cfjmk_gk_r)}{acj^2 - bej^2k_gk_r - efjmk_gk_r - bhjmk_gk_r - fhm^2k_gk_r}\right)),$$

$$(am(acj^2k_g - bcj^2k_gk_r - cfjmk_gk_r)^2(1 - (acj^2k_g - bcj^2k_gk_r - cfjmk_gk_r)/(k_g(acj^2 - bej^2k_gk_r - efjmk_gk_r - bhjmk_gk_r - fhm^2k_gk_r))))/$$

$$((acj^2 - bej^2k_gk_r - efjmk_gk_r - bhjmk_gk_r - fhm^2k_gk_r)^2$$

$$\left.\left(\frac{bj(acj^2k_g - bcj^2k_gk_r - cfjmk_gk_r)}{acj^2 - bej^2k_gk_r - efjmk_gk_r - bhjmk_gk_r - fhm^2k_gk_r} + \frac{fm(acj^2k_g - bcj^2k_gk_r - cfjmk_gk_r)}{acj^2 - bej^2k_gk_r - efjmk_gk_r - bhjmk_gk_r - fhm^2k_gk_r}\right)\right)\right)$$

Note: Eigenvalues for this equilibrium are too cumbersome to be shown here. They run several pages.

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