PARALLEL PERILS: THE STRATEGIC CAUSES AND
CONSEQUENCES OF MULTIPLE CIVIL CONFLICTS

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Abstract

It is often noted that civil wars have superseded interstate wars as the primary form of conflict in the international system. What is rarely discussed, however, is that states often find themselves embroiled in parallel conflicts, or multiple civil wars that overlap in time and space. Through four empirical essays, this dissertation project explores the causes and implications of such parallel conflicts through the strategic spatiality of civil war. The first essay questions whether the underlying causes of initial and parallel civil wars systematically differ. I show that, in contrast with the extant literature, these separate types of conflict onsets have dissimilar structural causes, and that by lumping them together we risk conflating the structural foundations of initial and subsequent conflicts. Furthermore, I show that by separating the onset of initial and parallel civil wars, we can leverage important conflict characteristics, such as the severity and geography of ongoing conflicts, to significantly improve predictions of parallel conflict onsets, considerations which are largely absent from the major theories of civil war. Building on these broad insights, the second essay explores the puzzle of why some ethnic groups choose to take up arms against the state. Applying existing theories of conflict contagion between states to the contagion of conflict between ethnic groups within the state, I argue that ongoing conflicts in ethnic groups’ geographic proximity provide important resources
and information necessary to fight the state, which lowers barriers to entry into conflict. Similarly, the third essay considers why some politically excluded ethnic groups rebel against the state, arguing that the relationship between ethnopolitical exclusion and civil war is shaped by excluded groups’ broader political and strategic neighborhoods. I first show that neighborhoods of inconsistent ethnopolitical exclusion, by highlighting excluded groups’ disadvantages and exacerbating feelings of resentment, lead groups to take up arms. Paralleling the previous essay, I argue that geographic proximity and relative prevalence of ongoing conflicts in excluded groups’ immediate neighborhoods provide logistical and motivational benefits. Shifting from the study of civil war onset, the last empirical essay examines how the duration of civil war is affected by the spatial distribution of multiple conflicts within the state. Through a theory of scarce resource division and the loss of strength gradient, I argue that, as the distance between parallel conflicts increases, states’ war-fighting capacities are stretched across multiple fronts, limiting their ability to definitively suppress rebel forces. These spatial effects, in conjunction with the characteristics of overlapping conflicts, shape the duration of hostilities for by altering the bargaining framework between governments and rebels, leading to interdependent conflict durations. Taken together, these essays consistently support the notion that accounting not only for the existence of multiple conflicts, but also the spatial distribution of those conflicts throughout the state, yields important insights for the ongoing study of civil war.
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Dedication

For my beautiful wife, Blair
Chapter 1  
Introduction

1.1 The Chinese Fiasco, 1850-1877

China in the late nineteenth century was an unpleasant, and indeed dangerous, place to live. Between 1850 and 1877, the Chinese government fought nine overlapping and interconnected civil wars against peasants, religious fanatics, and ethnic rebels (Sarkees and Wayman, 2010). The largest of these conflicts, the Taiping Rebellion, lasted for sixteen uninterrupted years and, either directly or indirectly, influenced the onset and continuation of every other civil war across the Chinese landscape. By the end of this period, hostilities had claimed the lives of over 25 million people and engulfed eighteen of China’s provinces in bloodshed (Clodfelter, 2002; Yu, 2002).

The Taiping Rebellion began as a religious movement, rooted in Christianity, which condemned existing religions and viewed the Chinese government as subversive and heretical (Sarkees and Wayman, 2010). Declaring war against the Qing dynasty in 1850, the Taiping rebels first captured the Guangxi province of southern China, using it as their base to push conflict northward, ultimately taking control of several provinces in central China. Three years later, and after numerous skirmishes with Qing armies, the Taiping rebels captured Nanking, the capital of southern China,
which was held as their seat of rebel power. From 1853 to 1866, the Qing government in Beijing put considerable time, attention, and resources toward stopping the spread of the Taiping armies and wrestling back control of Nanking from rebel forces.

But the Taiping Rebellion, while notable for its sheer scale of conflict and violence, was only one front in a large and complex environment of civil war facing the Chinese government. The broader impact of the Taiping Rebellion lies in its influence as the spark or impetus for several other insurgencies. Several other rebel uprisings, both large and small, owe their beginnings and lasting continuation to the Taiping rebels in Nanking. The first of these parallel conflicts, the Miao Rebellion, began in 1854 in the southern province of Guizhou. Frustrated with increasing taxation imposed on the ethnic Miao to fund the war against the Taiping armies, Miao political entrepreneurs mobilized support for an armed insurrection against the Chinese government. Meanwhile, most Chinese governmental forces in the Guizhou province were moved toward suppressing the ongoing Taiping Rebellion in neighboring Guangxi, affording the Miao rebels the opportunity to strike and oust the few remaining provincial forces, successfully beginning a prolonged insurgency against the central government that lasted until 1872.

Other rebellions periodically followed suit, including the Nien (1855-1868) and Xinjiang (1864-1877) Rebellions, fueled by popular grievances against rising taxation to fight the Taiping Rebellion and lack of governmental responses to local environmental disasters. Similarly, the Parthay (1856-1872), Tungan (1862-1873), and Yellow Cliff (1866) Rebellions, the former of which were comprised of China’s Muslim minorities, were founded in response to fears about the increasing militarism of ethnic Han Chinese in response to the ongoing Taiping conflict (Atwill, 2003; Sarkees and Wayman, 2010). Additionally, all of these subsequent conflicts
benefitted from the increased opportunity for rebellion brought about by the Chinese military’s logistical concentration on Nanking. These additional fronts in China’s period of civil war quickly escalated the Chinese political and military environment from a dyadic conflict to a complex and interconnected array of civil wars.

These overlapping conflicts created a strategic nightmare for the Chinese government. Given the strength of the Taiping armies and the number of additional insurgencies facing the state, the Chinese military simply did not possess the resources necessary to sufficiently or simultaneously combat the insurgents on all fronts. Strategically, the Chinese military focused its resources and manpower on combatting the Taiping Rebellion, the strongest of the insurgent challengers, while pursuing a policy of simply trying to contain or stop the spread of its parallel conflicts (Elleman, 2001). This strategy benefitted the smaller insurgencies and greatly contributed to their sustained campaigns. Indeed, while individually much weaker than the Chinese military, the various insurgencies operating in the shadow of the Taiping campaign were able to consistently match the local strength of the relatively diminished Chinese military, undoubtedly lasting much longer than they would have in isolation.

The height of this prolonged period of parallel conflicts lasted until 1866 when, through a combination of foreign intervention and successful military campaigns, Nanking was recaptured and the Taiping Rebellion was finally crushed (Yu, 2002). Indeed, the fall of Nanking to Chinese forces was the first of a series of strategic dominoes to fall in China’s civil wars. Having successfully ended their struggle against the Taiping armies, the Chinese military was free to reallocate its manpower toward finally suppressing the other insurgencies lingering around the country (Elleman, 2001). The insurgent forces that were once able to combat provincial military forces now found themselves overwhelmed by soldiers and support from the
central Chinese government. Slowly but surely, each of the insurgencies concluded with Chinese governmental victory, and the prolonged period of conflict finally ended in 1877 with the fall of the Xinjiang Rebellion.

1.2 Motivation

The Chinese Fiasco of 1850-1877 nicely parallels an important, but under-studied, aspect of contemporary civil wars: the incidence and interdependence of multiple, overlapping conflicts. Summarily, if not for the Taiping Rebellion, the numerous insurgencies in southern and western China most likely would not or could not have happened. Likewise, had one or several of the parallel insurgencies occurred, they most likely would have been quickly crushed under the weight of a Chinese military not preoccupied with the Taiping armies. That is, the onset and duration of many conflicts during the Chinese Fiasco of the nineteenth century were directly attributable to the strategic interactions among the various civil conflicts.

These interdependent processes are paralleled across many contemporary conflicts. The Syrian government’s prolonged struggle against various anti-regime forces since 2010, for instance, partly facilitated the opportunistic development of ISIS in western Syria (Warrick, 2015; Weiss and Hassan, 2015). Similarly, civil conflicts waged on multiple fronts in Ethiopia, India, and Myanmar have produced decades-long periods of hostilities between governments and rebel forces.

But periods of parallel conflicts are not limited to a few historical cases. As Figure 1.1 points out, there is significant heterogeneity in the number of conflicts facing states at any given time. Roughly 20% of all states in conflict since 1945 have, at some point, faced multiple, overlapping civil wars. Perhaps more strikingly, years of parallel conflict, in which the state faces two or more domestic belligerents,
account for roughly 40% of all conflict years since 1945.

Furthermore, Figure 1.2 displays the distribution of multiple, simulatenous conflicts among states in the international system. As can be clearly seen, parallel civil wars plague states across the global landscape, ranging from sub-Saharan Africa to East Asia. Said another way, parallel civil wars are a global phenomenon, affecting a significant number of states in the international system. Broadly, this anecdotal and empirical evidence leads to several important questions. Notably, what leads to such parallel conflicts, and what accounts for their persistence?

The extant literature has detailed several robust explanations for the onset of civil conflict, ranging from poverty and economic inequality (Collier and Hoefl,
Figure 1.2. Distribution of Single and Parallel Civil Wars Among States in the International System, 1946-2010

NOTE: Map shows international system membership as of 2010. States that have been involved in at most one conflict since 1946 are shown in light gray. States that have been involved in 2 or more simultaneous civil wars since 1946 are shown in dark gray. International boundaries are shown in black lines.

2004; Cederman, Weidmann and Gleditsch, 2011; Buhaug, Cederman and Gleditsch, 2014) and natural resource wealth (Ross, 2004; Fearon, 2005; Lujala, 2010) in providing mechanisms of grievance and greed, respectively, to the role of ethnicity (Cederman, Wimmer and Min, 2010; Ellingsen, 2000; Montalvo and Reynal-Querol, 2005; Weidmann, 2009; Wimmer, Cederman and Min, 2009) and geography (Buhaug, 2010; Buhaug and Rød, 2006; Fearon and Laitin, 2003; Wucherpfennig et al., 2011) in influencing the mobilization of rebel forces and increasing the opportunity for their success. Likewise, several studies have addressed the prolonged duration of civil wars around the world (Balcells and Kalyvas, 2014; Buhaug, Gates and Lujala, 2009; Cunningham, Gleditsch and Salehyan, 2009; Cunningham, 2006; Fearon, 2004).

These studies, and many others, have certainly done much to enlighten our understanding of the onset and continuation of violent civil wars. These studies
are also notable, however, for their conceptual treatment of civil wars; with some exception, the extant literature largely considers civil wars as independent events, regardless of their broader environments or interdependencies with other conflicts in the state. But cases like the Chinese Fiasco of the nineteenth century clearly challenge this broad assumption. Undoubtedly, civil wars are frequently caused and/or influenced by surrounding conflicts within the same state, a conceptual and empirical omission from the extant literature.

Figure 1.3 provides a conceptual outline of this distinction. Consider, for instance, a government (colored in black) involved in three civil wars against separate rebel forces (colored in gray) simultaneously. The “Independent Conflict” model, which largely conforms to the extant literature, implicitly assumes that the interaction between each government-rebel dyad is independent of the other conflicts and, furthermore, that the processes of each individual conflict are independent or unaffected by the processes of the other conflicts. In contrast, the “Interdependent Conflict” model relaxes these assumptions. Under the “Interdependent Conflict” model, the actions of the government in any conflict are partly dependent on its considerations of the other conflicts. Similarly, the processes of each conflict are partly dependent on the influence of the other conflicts facing the state. As such, rather than each conflict acting as a self-contained process, each civil war becomes an interconnected piece of a broad and complex array of strategic and military processes that impact both the state and the rebels.

This dissertation seeks to extend the literature on violent civil conflicts by directly addressing the issue of parallel civil wars through the interdependent conflict model of Figure 1.3. Given the general dearth of research into this particular topic,

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1For notable exceptions to this approach, see Akcinaroglu (2012) and Cunningham (2006), among others. For examples of conflicts being influenced by civil wars in neighboring states, see Buhang and Gleditsch (2008), Maves and Braithwaite (2013), and Danneman and Ritter (2014), among others.
there are myriad ways to pursue this agenda. To focus my efforts here, the rest of this dissertation emphasizes the spatiality of parallel conflicts, or the strategic role of space in influencing the processes of parallel conflicts. Focusing on the spatiality of conflict is advantageous in that it provides clear conceptual and empirical mechanisms for assessing the interdependent influence of multiple conflicts. As in the Chinese Fiasco of the nineteenth century, the spread and interdependence of parallel civil wars often follow distinct strategic, political, and social mechanisms that clearly operate over space. Additionally, focusing on the spatiality of parallel conflicts not only yields important insights for the study of civil war, but also for the spatial dimensions of conflict more broadly.
1.3 Conceptualizing and Operationalizing Parallel Civil Wars

The preceding discussion and subsequent chapters partly center on the incidence and implications of parallel civil wars, or multiple, simultaneous civil wars facing incumbent governments. As such, it is important to clearly detail, both conceptually and operationally, the definition of parallel civil wars used in this project. Properly defining parallel civil wars, while important, is also difficult; parallel civil wars are only one piece of an even broader and more complex environment of conflict facing states and societies involving several overlapping and interdependent types of hostilities.

Broadly, parallel conflicts are any set of conflicts that meaningfully overlap politically or strategically, such that the processes of any single conflict are significantly affected by the processes of other ongoing conflicts. The key feature of such parallel conflicts, then, is their interdependence; the onset, processes, and outcome of parallel conflicts partly depend on the characteristics of other ongoing conflicts. Such overlapping conflicts can be broadly conceptualized as parallel conflicts, or the multiple sources of hostility that belligerent actors, whether they be states, rebel groups, third-party observers, or sub-state groups, must simultaneously account for in their strategic calculations. Using a top-down perspective from this broad outline, parallel civil wars, then, are a subset of the multiple, simultaneous, conflicts that belligerent actors, notably states and rebelling groups, must periodically manage.

At any given time, states are faced with violent conflicts both within their borders and with other states in the international system. An extensive literature details the risk facing states that active wars will spread to conflicts with multiple neighboring states, forcing belligerent governments to account for the possibility of
interstate conflicts on multiple fronts (Blainey, 1988; Werner, 2000). Furthermore, governments must often simultaneously manage both interstate and intrastate hostilities. India, for instance, has faced prolonged insurgent campaigns within its borders while also managing a long-standing rivalry with neighboring Pakistan over control of the Kashmir region straddling the two countries. Similarly, the Colombian government has waged a prolonged campaign against FARC rebels while also periodically engaging in conflict with neighboring Venezuela. Such overlapping inter- and intrastate conflicts exacerbate the strategic problems facing incumbent governments, since states must simultaneously account for multiple conflicts at home and abroad.

Setting aside the issue of interstate hostilities, parallel conflicts may arise exclusively within states’ borders. As in the Chinese Fiasco of the late nineteenth century, governments, for instance, must often simultaneously fight completely separate civil wars on disparate fronts within their territory, producing periods of parallel civil war. Such parallel civil wars are notable in India’s military history since World War II. Since 1945, the Indian government has fought in simultaneous civil wars against Kashmiri separatists in the northeast of the country, against multiple ethnic challengers in the northwest “Seven Sister” states of the northeast, and against communist Naxalite forces in the southeast of the country. While the causes, locations, and actors of these parallel conflicts are largely separate, they are still conceptually interdependent, since their continuation and violent processes presents a more complex strategic consideration for the Indian military.

Within individual conflicts, however, states may also face multiple rebel organizations or fractured political movements, leading to a more localized strain of parallel hostility. Continuing the trend of strategic interdependence, such parallel movements can exacerbate or prolong hostilities by making outright victory or
political settlement increasingly difficult (Akcinaroglu, 2012; Cunningham, 2006, 2011; Cunningham, Bakke and Seymour, 2012; Mukherjee, 2014). Said another way, both types of parallel civil conflict, either multiple, simultaneous civil wars or multiple, independent groups within particular conflicts, affect both states’ and rebels’ strategic abilities to wage war since, in both instances, belligerents must account for a more complex environment of conflict. As such, the processes of such parallel conflicts become conceptually interdependent.

But parallel conflicts can also arise in states exclusive of governmental involvement. Conflicts involving multiple rebel groups can lead to violent conflict between various rebel organizations (Fjelde and Nilsson, 2012; Wood and Kathman, 2015). For example, in addition to fighting the incumbent regime of Bashar al-Assad, the Free Syrian army has periodically fought against the forces of Jabhat al-Nusra, the Islamic State, and other smaller Islamist militant groups. In addition, multiple conflicts may occur as various populations within the state, such as ethnic or religious groups, take up arms against each other and engage in violent conflict (Petersen, 2002; Posen, 1993; Sundberg, Eck and Kreutz, 2012). While such conflicts do not directly involve incumbent governments, they undoubtedly affect either active rebel groups or groups within the state that may otherwise rebel. Broadly, such inter-group conflicts impact the broader environment of conflict within the state and potentially affect the onset or characteristics of other ongoing conflicts.²

These various manifestations of parallel conflicts highlight the overlapping nature of such multiple, simultaneous hostilities and the difficulty of conceptualizing parallel conflict. Indeed, states may be simultaneously involved in conflicts with belligerent forces at home and abroad, against belligerents spread across distinct civil wars, 

²Exacerbating many of these processes, belligerent groups and incumbent forces may also be aware of other nascent rebel groups or groups that could rebel as a result of ongoing conflicts, further affecting the strategic calculus of conflict (Walter, 2006, 2009).
and/or against multiple rebel organizations within the same conflict. At the same
time, rebel groups pitted against incumbent governments may also fight against
other rebel groups, and certain segments of a state’s populace may take up arms
and engage in intercommunal conflict against rival groups within the state. Taken
together, these various possibilities create complex and nebulous environments of
conflict encompassing governments, rebel organizations, and sub-state groups.

It is perhaps possible to develop a theoretical and empirical model that accurately
captures all of these possible interdependencies simultaneously. Such a model,
however, risks becoming conceptually unwieldy. Furthermore, a unified model
of interdependent parallel conflicts, if improperly specified, risks conflating the
strategic influences and interdependent mechanisms that affect individual conflicts.

Given the complex nature of parallel conflicts, then, the subsequent chapters
exclusively focus on parallel civil wars, or multiple, simultaneous civil wars facing
states. Operationally, a civil war must occur between an incumbent government
and a belligerent challenger group within its territory (Pettersson and Wallensteen,
2015). As such, I necessarily exclude interstate conflicts, conflicts between rebel
groups, and intercommunal conflicts between sub-state groups.\(^3\)

Given the strategic complexities of parallel conflict in the international system,
I further focus my examination of parallel civil wars through closed polity models of
conflict. That is, while I examine the broader interdependent processes of individual
conflicts, I only consider the characteristics and interdependencies that arise within
states’ borders. As such, I exclude the influence of conflicts in neighboring states

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\(^3\)In addition, I focus only on violent conflict between incumbent governments and opposition
forces and do not consider the influence of non-violent campaigns on the interdependent processes
of conflict. Previous works, however, have shown violent conflict to be one of several options
available to belligerents, so the inclusion of such processes may also offer novel insights into the
strategic interdependencies between violent and non-violent campaigns (Asal and Wilkenfeld,
2013; Cunningham, 2013).
and the strategic influence of outside actors on the processes of conflict. Expanding my arguments to account for such external influence may yield additional insights into the strategic interdependencies of conflict.

1.4 Operationalizing the Contagion of Civil War

Part of this dissertation project concerns the contagion of civil war within states, the process by which ongoing hostilities spread to nearby groups. Through processes of contagion, then, conflicts are spatially dependent; conflicts in one area are affected or partly dependent on other conflicts in another, nearby area. The extant literature of civil war contagion provides several theoretical mechanisms by which such contagion occurs. Ongoing conflicts, for instance, increase flows of weapons, supplies, and combatants in surrounding areas, making conflict more feasible for nearby nascent rebel groups, while the spread of refugees from conflict zones can destabilize struggling political and economic regimes, thus fomenting conflict (Braithwaite, 2010; Buhaug and Gleditsch, 2008; Salehyan and Gleditsch, 2006). Alternatively, ongoing conflicts may incite nascent rebels to take up arms out of feelings of solidarity with active rebels or as strategic information about fighting governments inspires emulation (Maves and Braithwaite, 2013).

Broadly, these theoretical mechanisms are unified by the spread of logistics, ideas, and information. But measuring the causal mechanisms linking ongoing conflicts and the onset of additional hostilities is incredibly difficult. That is, given some active rebel group A and nascent rebel group B, it is difficult to argue, either theoretically or empirically, that rebel group B took up arms exclusively because of the availability of weapons flowing around an active conflict zone or because the memebers of rebel group B felt some sense of solidarity with group
A. Exacerbating this issue is the notion that groups are likely impacted by several different mechanisms simultaneously and the empirical inability to adequately distinguish or rank the mechanisms leading to the diffusion of specific conflicts or between specific groups.

Given these empirical issues, I capture the spatial dependence and contagion of civil war through a series weighted spatial lags. Each spatial lag operates by weighted a given unit of interest’s distance from an ongoing conflict, such that units close to ongoing conflicts are more significantly affected by the processes of that conflict than units farther away. While weighted spatial lags are unable to accurately capture the influence of any particular mechanism of conflict contagion, they are useful in that they follow the First Law of Geography that “Everything is related to everything else, but near things are more related than distant things” (Tobler, 1970). That is, the weighted spatial lags allow me to capture the influence of ongoing conflicts, through some unobservable theoretical mechanism, on proximate units of interest.\footnote{The research design sections of Chapter 3 and Chapter 4, respectively, describe in greater detail the construction and interpretation of the various weighted spatial lags used in the analyses.}

1.5 Chapter Outline

The rest of this dissertation proceeds through four separate, but interconnected, essays. Taken together, these essays consistently support the notion that accounting not only for the existence of multiple conflicts, but also the spatial distribution of those conflicts throughout the state, yields important intellectual and practical insights for the study of civil war.

The first essay, “From Bad to Worse: The Onset of Multiple Civil Wars,” directly challenges the extant approach of treating all civil war onsets homogeneously.
Specifically, I question whether the onset of initial and parallel civil wars, or those civil wars that begin during periods of ongoing conflict, are influenced by the same structural conditions. In answering this question, I examine several state-level characteristics that robustly affect civil war onset and show, broadly, that the correlates of initial civil wars significantly differ from those of parallel civil wars. These broad analyses suggest significant nuance in cross-national studies of civil war onset and provide new opportunities for refining studies of civil war.

One such refinement lies in examining the theoretical mechanisms that exclusively facilitate parallel civil wars. In applying the dichotomy of initial and parallel civil wars, the first essay leverages the ability to examine the characteristics of ongoing conflicts that influence the onset of additional hostilities. Specifically, I argue that ongoing conflicts provide an increased opportunity for additional rebellion, and show that parallel conflicts become more likely as the number and severity of ongoing civil wars, especially those that draw the state’s resources to remote regions of the state, increase. Tying these insights together, I show that directly examining parallel conflicts offers significant improvements in our ability to explain the onset of multiple civil wars.

The first essay offers several theoretical mechanisms that increase the likelihood of parallel civil war occurrence by making additional conflicts more feasible. Building on these broad insights, the second essay, “The Intrastate Contagion of Ethnic Civil War,” explores the puzzle of why some ethnic groups choose to take up arms against the state and examines the spread of conflict within states. To that end, I first contend that ethnic groups are more likely to engage in violence as overall levels of conflict in the state increase, since states’ resources and attention are increasingly divided, thereby increasing opportunities for sustained rebellion. I build on this baseline expectation by applying existing theories of conflict contagion between
states to the contagion of conflict between ethnic groups in the same state. I argue that ongoing conflicts in ethnic groups’ geographic proximity provides important resources and information necessary to fight the state, which lowers the barriers to entry into conflict and increases chances of success. Using an original measure of intrastate conflict contagion, I find robust evidence that ethnic civil wars follow patterns of spatial contagion within the state, helping to explain why certain ethnic groups rebel through the spatiality of civil war.

Similarly, the third essay, “Ready, Willing, and Able: The Spatial Contexts of Ethnopolitical Conflict,” considers why only some politically excluded ethnic groups rebel against the state. Like the Miao, Nien, and Xinjiang Rebellions in China, the spread of civil war within states is often facilitated or exacerbated by the state’s political hierarchy and design, with marginalized groups often the most susceptible to rebellion. Through three distinct spatial effects, I argue that the relationship between ethnopolitical exclusion and civil war is shaped by excluded groups’ broader political and strategic neighborhoods. I first show that neighborhoods of inconsistent ethnopolitical exclusion, by highlighting excluded groups’ disadvantages and exacerbating feelings of resentment, lead groups to take up arms. I further show that the relative prevalence of other excluded groups in conflict increases the chances of civil war by providing a mechanism of external motivation and strategic emulation. Paralleling the findings of the previous essay, I argue that ongoing conflicts in excluded groups’ immediate neighborhoods facilitates the onset of additional hostilities by providing logistical and informational benefits. Together, these mechanisms provide a novel and nuanced perspective on the contextual relationship between ethnopolitical exclusion, the spatiality of conflict, and the onset of ethnic civil war.

Shifting from the study of civil war onset, the fourth essay, “The Strategic
Spatiality of Civil War Duration,” examines how the duration of individual civil wars is affected by the spatial distribution of multiple conflicts within the state. Through a theory of scarce resource division and the loss of strength gradient, I argue that, as the distance between parallel conflicts increases, states’ war-fighting capacities are stretched across multiple fronts, limiting their ability to definitively suppress rebel forces. These spatial effects, in conjunction with the characteristics of overlapping conflicts, shape the duration of hostilities by altering the strategic relationship between governments and rebels, leading to interdependent conflict durations. Using spatial weighting and survival modeling, I show that the duration of conflict is significantly affected by the spatiality of multiple civil wars.

Taken together, these essays provide significant contributions for the literatures concerning civil war and the spatial dimensions of conflict. I close by offering some concluding remarks on the implications of these essays for the study of civil war and provide some insights into possible extensions of this project and this research agenda.
Chapter 2  
From Bad to Worse:  
The Onset of Multiple Civil Wars

2.1 Introduction

On the evening of December 24, 1979, Soviet tanks rolled across the northern border of Afghanistan while transport planes landed thousands of troops and combat supplies on the outskirts of Kabul. The goal of this massive Cold War effort was to prop up the fledgling leftist Afghan regime in its civil conflict against the burgeoning rebel groups collectively known as the Mujahideen. A year earlier, communist Afghan forces took control of the Afghan government in the Saur revolution, subsequently allying the country politically and culturally with the Soviet Union (Coll, 2005; Kaplan, 2001).

This new allegiance to their Soviet neighbors brought about a series of swift changes for the Afghan populace. A series of “anti-Islamification” campaigns were carried out, and land reforms forcibly appropriated agricultural land for central planning purposes. Anyone who reacted against these measures was met with violent repression by the Afghan military (Kaplan, 2001). Feelings of grievance and resentment toward the new communist regime quickly fueled a fledgling insurgent campaign, galvanized by Afghan political entrepreneurs both domestically and in
neighboring countries (Coll, 2005). Eventually, this initial insurgency grew strong enough to warrant intervention by the Soviet Union on behalf of their Afghan puppet regime.

By all accounts, the leftist Afghan government’s victory over the Mujahideen, facilitated by Soviet military support, should have been both quick and relatively bloodless for government forces. The various groups comprising the greater Mujahideen were divided politically and strategically and, although their fighters were resolute, the groups lacked the capabilities, training, and coordination of the Soviet and Afghan militaries. Furthermore, the American experience in Vietnam and the political debacles in Iran and Pakistan only a few months prior seemingly pointed to a dearth of western willingness to provide support for the Mujahideen in the Afghan conflict, allowing the Afghan and Soviet governments the opportunity to quickly crush the Mujahideen under their combined military might (Coll, 2005).

These strategic calculations on the part of the Soviet and Afghan governments, however, proved incorrect. The American government and several Middle Eastern countries, through a combination of political and private investment, funneled massive amounts of monetary support and advanced weaponry to the Mujahideen. The ranks of the Mujahideen forces further swelled as thousands of fanatics from all over the Middle East raced to join the rebels’ cause against what they felt was a greater war on Islam, increasing their fighting and mobilization capacities.

Moreover, as war raged on, new fronts periodically opened in the conflict, until the vast majority of the country, from the Panjshir Valley in the northeast to the city of Herat, the future seat of Taliban power in the southwest, was engulfed in conflict. These parallel conflicts facing the communist Afghan regime spread Soviet forces thin across the country, limiting their aggregate strength. Although the Soviets and their Afghan puppet government believed the conflict could be settled
quickly and rather bloodlessly for their side, the conflict ultimately continued until February 1989 and, after a decade of fighting, claimed the lives of tens of thousands of combatants on both sides, and still thousands more as the fighting between warring factions continued in the years following the Soviet withdrawal (Coll, 2005).

In many ways, the Afghan civil war is a microcosm of conflict in the latter half of the twentieth century. Scholars have long noted that, following the end of World War II and, in particular, since the collapse of the Soviet Union, civil conflicts have supplanted interstate wars as the most common form of conflict in the international system (Gleditsch et al., 2002; Pettersson and Wallensteen, 2015). This trend is especially notable, given the immense humanitarian costs associated with civil wars. Civil wars in China, Vietnam, and Afghanistan have accounted for the three bloodiest conflicts since World War II and, in the aggregate, civil wars have accounted for the vast majority of combat-related deaths (Lacina and Gleditsch, 2005). Furthermore, civil wars often carry distinct strategies of civilian targeting, leading to enormous civilian death tolls, particularly in sectarian contexts (Fjelde and Hultman, 2013; Hultman, 2007, 2012; Wood, 2010, 2014a,b; Wood and Kathman, 2014). Perhaps more strikingly, civil wars produce well-recorded legacies of poverty (Bayer and Rupert, 2004; Murdoch and Sandler, 2002) and poor public health (Ghobarah, Huth and Russett, 2003; Iqbal, 2006), as well as increased chances of state failure and future violence (King and Zeng, 2001; Menkhaus, 2006; Piazza, 2008; Young, 2006), significantly prolonging the instability and suffering caused by civil hostilities.

Given these dire and lasting implications, scholars of international conflict have devoted considerable attention toward understanding the causes of civil wars. This research, in turn, has led to several robust conceptual mechanisms and empirical indicators of civil war risk and propensity, highlighting the broad roles of
greed, grievance, and feasibility in facilitating violent conflict (Collier and Hoeffler, 2004; Collier, Hoeffler and Rohner, 2009; Fearon and Laitin, 2003). Furthermore, extant studies have routinely justified these conceptual mechanisms, as well as their empirical proxies, as robust structural predictors of civil conflict onset in the international system (Bleaney and Dimico, 2011; Hegre and Sambanis, 2006; Muchlinski et al., 2016).

But the Afghan civil war is also notable for its multiple, overlapping conflicts. That is, rather than facing a single, unified, and strategically unitary foe, the Afghan and Soviet militaries faced a series of parallel and fractionalized rebel groups, each vying for control of the Afghan government (Coll, 2005; Christia, 2013). These various groups similarly fractured governmental military forces, requiring them to fight separate, parallel campaigns on multiple disparate fronts.

Much like the Afghan government, states frequently become involved in multiple, overlapping civil wars, a point that, until recently, has largely escaped scholarly attention.¹ For instance, the governments of Ethiopia, India, and Myanmar have faced domestic belligerents on multiple fronts, leading to decades of continuing hostilities (Gleditsch et al., 2002; Pettersson and Wallensteen, 2015). Furthermore, as Figure 2.1 points out, there is significant variation in the number of civil wars that have faced states since World War II.

As Figure 2.1 shows, roughly 20% of states in conflict have, at some point, faced two or more civil wars simultaneously. Furthermore, roughly one-third of all civil wars begin during periods of ongoing conflict, lending significant heterogeneity to

¹For prominent exceptions, see Akcinaroglu (2012) and Cunningham (2006) for examples of how parallel conflicts affect the duration and outcomes of civil wars. Similarly, the propensity or risk of parallel conflicts features prominently in reputation arguments of civil war. As Walter (2006, 2009) argues, states are more likely to fight very hard against ethnic separatists when other ethnic groups in the state could potentially use acquiescence to motivate their own rebellion, leading to long and bloody conflicts.
the broader conditions surrounding, and perhaps influencing, the onset of civil wars in the international system (Gleditsch et al., 2002; Pettersson and Wallensteen, 2015). The quantitative literature about civil conflict, however, largely treats the onset of all civil wars as homogeneous, regardless of whether they are the first or eighth conflict to begin in the state. This assumption of homogeneity is potentially problematic, since it assumes that the change from zero to one civil war is the same as that from one to two civil wars, etc. or, worse yet, that the change from zero to one civil war is the same as that from zero to three or zero to four civil wars.

In this essay, I provide a further robustness test of the mechanisms and indicators of civil war onset by explicitly questioning whether initial and parallel civil wars
are driven by the same structural conditions. Using a new typology of civil war onset type, I define parallel civil wars quite simply as conflicts that begin during periods of ongoing civil war in the state. As such, while I define initial civil wars as being the first conflict to begin in a state, transitioning from a period of peace to a period of conflict, parallel civil wars explicitly start during periods of conflict, leading to conflict on multiple fronts. This distinction adds a novel wrinkle to the empirical conceptualization of civil war, as well as to how the occurrence of conflict is studied.

Given the breadth of states embroiled in parallel civil wars, understanding whether the causes of initial and parallel conflicts are similar holds not only academic, but also pragmatic, importance. To be sure, the structural characteristics influencing civil war have thus been shown to be empirically robust, and it may, in fact, be the case that all civil wars, regardless of whether they are initial or parallel conflicts, are affected by the same underlying conditions. But this assumption, if faulty, may yield improper inferences about the onset of civil war and extant approaches may only capture and explain a fraction of the mechanisms driving violent conflict, limiting their applicability. Similarly, if initial and parallel civil wars are indeed driven by disparate environments and structural conditions, parallel civil wars may be influenced instead by characteristics of ongoing conflict environments. That is, rather than being motivated by characteristics of the state, parallel civil wars may instead arise due to characteristics of ongoing conflicts in the state.

I proceed as follows. The next section surveys the broad literature on civil war onset, focusing on structural conditions that favor the incidence of civil war. Following this section I briefly discuss the conceptual difference between initial and parallel civil wars, and the implications this distinction has for the study of civil war onset. I argue that the occurrence of an initial civil war changes the environment
of the state from a period of peace to a period of conflict. Subsequently, if parallel conflicts only arise because of this conflict environment, then the underlying correlates of initial and parallel civil wars should differ. Furthermore, I argue that, instead of structural characteristics of the state, characteristics of ongoing conflicts, specifically those that increase the opportunity or feasibility of rebellion, significantly influence the onset of additional hostilities.

I test this argument empirically in four ways. First, using a new typology of civil war onsets to distinguish between initial and parallel civil wars, I derive a baseline empirical model that examines the utility of structural state characteristics as indicators of initial and parallel civil war onset. As a robustness test of this baseline model, I apply these structural indicators and my civil war typology to several empirical definitions of civil war onset. As a further robustness test, I also apply my civil war typology toward replicating several canonical studies of civil war onset. These three approaches all show that the mechanisms driving the onset of initial civil wars consistently differ from the structural mechanisms driving parallel civil wars. To further support my argument, I then show that several conflict characteristics that increase the feasibility of conflict explain the onset of parallel civil wars, and that distinguishing parallel civil wars allows scholars to leverage characteristics of existing conflicts to better explain the onset of additional hostilities. Following these results, I conclude by discussing the substantive implications of distinguishing between initial and parallel conflicts and how the application of conflict characteristics can significantly improve our understanding of civil war.
2.2 Structural Theories of Civil War Onset

Quantitative studies of civil war have relied on myriad theoretical and empirical approaches to examine the onset of hostilities. Theoretically, many of these advances have coalesced around overlapping arguments of greed, grievance, and opportunity (Collier and Hoeffler, 2004; Collier, Hoeffler and Rohner, 2009; Fearon and Laitin, 2003). Both greed and grievance provide the motivation necessary to undertake hostilities. While greed provides a positive inducement for conflict through expected material gains and political spoils of conflict, grievances provide motivation as segments of the populace seek to forcibly change the detrimental status quo in their favor. Alternatively, the opportunity for conflict captures the feasibility of rebellion; nascent rebels will only mobilize against the state if they possess decent prospects for sustained or successful rebellion. Accordingly, the extant literature has largely focused on characteristics of the state that affect these mechanisms, similarly centering on the overlapping economic, ethnic, and geographic foundations of civil war.

Grievance-based arguments of civil war rely on individual and mass resentment against the state, galvanizing groups to take up arms to change the status quo in their favor (Gurr, 1970, 1993). Economic depravity, for instance, fosters feelings of resentment, driven by destitution and lack of economic opportunity, against incumbent political regimes (Muller, 1985). As such, poorer states are particularly susceptible to civil wars, with low levels of per capita income and state wealth being among the strongest indicators of conflict (Collier and Hoeffler, 2004; Fearon and Laitin, 2003; Hegre and Sambanis, 2006). There is a corollary argument that poor states foster an increased opportunity for conflict, since poorer states are less well-equipped to combat or quickly crush rebellion.

Similarly, Cederman, Weidmann and Gleditsch (2011) and Buhaug, Cederman and Gleditsch (2014) provide a distinct
relationship between economic inequality and civil conflict; disadvantaged groups in the state are more likely to mobilize to change economic circumstances in their favor. As such, highly unequal states face an increased risk of civil war.

The economic foundations of conflict are often exacerbated by ethnopolitics. Ethnically heterogeneous or polarized states often face a higher likelihood of civil war (Blimes, 2006; Brancati, 2006; Cederman and Girardin, 2007; Ellingsen, 2000; Forsberg, 2008; Montalvo and Reynal-Querol, 2005; Sambanis, 2001). When ethnic divisions and public goods provisions lead to unequal distributions of state wealth through ethnic nepotism, increasing levels of ethnic heterogeneity increases the likelihood of civil conflict between governments and excluded ethnic groups (Cederman, Weidmann and Gleditsch, 2011; Easterly and Levine, 1997; Elbadawi and Sambanis, 2000; Vanhanen, 1999; Woodward, 1995).

Paralleling the unequal distribution of wealth, ethnopolitics influences the onset of civil war through the unequal distribution of political power (Tilly, 1978). Incumbent regimes routinely exclude ethnic minorities from access to the political apparatus in an effort to consolidate power and favor coethnics (Rothchild, 1981; Wimmer, 2002). Such ethnopolitical exclusion fosters resentment among marginalized groups which, without access to state political structures, leaves few avenues of redress aside from conflict (Horowitz, 1985).

Building from these insights, Cederman, Wimmer and Min (2010) show that excluded ethnic groups are more likely to rebel while Wimmer, Cederman and Min (2009) argue that, in the aggregate, large politically excluded populations increase the state’s likelihood of experiencing civil war, a finding mirrored by several studies (Buhaug, Cederman and Rød, 2008; Cederman, Buhaug and Rød, 2009). Such

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3 Though Ellingsen (2000) finds support for differing effects, with linear and parabolic relationships with fractionalization and polarization, respectively.
political exclusion often leads marginalized groups, who are often concentrated on the geographic periphery of the state, to seek secession or self-determination (Buhaug and Gates, 2002; Marshall and Gurr, 2003; Walter, 2006).  

The structural foundations of civil war are similarly affected by access to and dependence on natural resource wealth, which influence both the motivation and opportunity for rebellion (Lujala, 2010; Ross, 2004). Per capita incomes in resource-rich countries typically grow more slowly than in resource-poor states, while rents from natural resource endowments sustain corrupt regimes and political nepotism, indirectly contributing to the economic and political grievances that fuel rebellion (Auty, 2001; Sachs and Warner, 2001). Furthermore, such economic corruption may directly induce grievances against states if the exploitation of natural resources does not immediately benefit proximate groups. Le Billon (2005), for instance, shows that the Bougainville separatist movement in Papua New Guinea began following lack of compensation from gold and copper extraction on the island. Similarly, the Niger delta conflict was fought by the ethnic Ijaw partly over the perceived exploitation of the region’s oil reserves by the state at the expense of local wealth. Natural resource wealth may also motivate “greedy” rebels. Control of oil revenues, for instance, provide a significant prize if rebels manage to take control of the state (Fearon and Laitin, 2003; Fearon, 2005; Lujala, 2010).

Alternatively, natural resource endowments may increase the feasibility of rebellion. Oil-exporting states, for instance, often suffer from weak state bureaucratic

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4In addition, several studies point out the role of ethnicity in affecting the opportunity for particular ethnic groups to rebel. The geographic concentration and well-defined social structures of ethnic groups, for instance, significantly lowers coordination and mobilization costs for ethnic rebel groups (Elbadawi and Sambanis, 2000; Ellingsen, 2000; Kaufmann, 1996; Sambanis, 2001; Weidmann, 2009). In addition, many concentrated ethnic groups occupy remote regions of the state far from political centers, which makes the military suppression of rebellion more difficult (Buhaug and Rød, 2006; Buhaug, Cederman and Rød, 2008; Buhaug, 2010; Wucherpfennig et al., 2011).
systems and militaries (Fearon and Laitin, 2003; Fearon, 2005). Such weak political apparatuses favor conflict, since the ability of the state to fight against insurgent campaigns is diminished. Similarly, natural resource endowments, such as drug cultivation and gemstone deposits, provide rebel financing for sustained hostilities (Lujala, Gleditsch and Gilmore, 2005; Lujala, 2009, 2010). The ongoing Kachin and Shan insurgencies in Myanmar, for instance, have been financed through a combination of diamond and drug cultivation, providing sustained access to arms, logistics, and supplies for rebel forces (Lujala, 2010).

The feasibility of rebellion is also significantly influenced by the geography of the state and the international system. Rough and mountainous terrain, for instance, favors rebellion by limiting the ability of states to apply conventional military force and by facilitating guerrilla and indirect warfare waged by relatively weak rebel groups (Fearon and Laitin, 2003; Kalyvas and Balcells, 2010). The Afghan campaigns against the Soviet Union in the 1980s, for instance, were largely aided by the dense mountains of the Afghan countryside, which allowed Afghan rebels to avoid direct conflict with Soviet forces and limited the ability of the Soviets to apply overwhelming military force (Coll, 2005).

The onset of civil war is also affected by the broader geography of the international system. Recently, scholars have shown the propensity for civil wars to cluster and spread through the international system, creating localized neighborhoods of conflict (Buhaug and Gleditsch, 2008; Gleditsch, 2007; Maves and Braithwaite, 2013). Conflicts in neighboring states increase flows of weapons, refugees, and conflict ideologies, providing nascent rebels across borders with increased opportunities to take up arms (Salehyan and Gleditsch, 2006). Alternatively, conflicts abroad may inspire nascent rebel groups to emulate existing groups in neighboring states, thus taking up arms themselves (Forsberg, 2008; Hill, Rothchild and Cameron, 2008).
Combined with weak state capacity, states in conflict-prone neighborhoods are particularly susceptible to new or renewed conflicts (Braithwaite, 2010; Hegre and Sambanis, 2006; Sambanis, 2001).

Taken together, these structural theories of conflict have greatly informed the broader civil war literature. Even as the literature turns toward disaggregated studies of civil war onset (Cederman and Gleditsch, 2009), state-level mechanisms and indicators of civil war remain important. States, for instance, remain the standard and best unit for determining the risk of conflict and predicting the onset of civil war (Goldstone et al., 2010; Hegre et al., 2013; Muchlinski et al., 2016; Ward, Greenhill and Bakke, 2010). In addition, structural state characteristics associated with the mechanisms of greed, grievance, and feasibility have been shown to be rather robust to both empirical and conceptual approach, with indicators of poverty, political instability, natural resources, rough terrain, ethnicity, and neighborhoods of conflict being among the most robust indicators of civil war (Bleaney and Dimico, 2011; Hegre and Sambanis, 2006; Muchlinski et al., 2016).

2.3 From Bad to Worse: Examining Initial and Parallel Conflicts

This brief survey of the civil war literature highlights the broad structural mechanisms associated with the onset of hostilities. Indeed, the structural mechanisms associated with greed, grievance, and feasibility have received considerable theoretical and empirical attention in the extant literature. Empirically, state-level characteristics associated with these mechanisms remain among the strongest cross-national predictors of civil war occurrence.

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5 For examples of some disaggregated studies of civil war onset, see Buhaug, Cederman and Rød (2008), Cederman, Wimmer and Min (2010), and Wucherpfennig et al. (2011), among others.
An additional feature of the civil war literature is the conceptual approach that all civil wars are similarly driven by these same state-level characteristics. A significant number of civil wars, however, begin during periods of ongoing conflicts, entailing a distinct difference in the broader context under which conflicts begin. That is, rather than beginning during periods of peace, these parallel conflicts begin during the course of, or perhaps because of, ongoing conflicts. Yet given the knowledge that states routinely face multiple civil conflicts, the civil war literature has yet to question whether initial and parallel conflicts, or those that arise during the course of ongoing hostilities, are systematically driven by the same, or different, characteristics.

It may certainly be the case that all civil wars are, at least in part, driven by the same underlying structural characteristics, in which case the assumption of homogeneity among civil war onsets is appropriate. This assumption is potentially problematic, however, if the underlying causes of initial and parallel civil wars are systematically different. In that case, the sequence of civil war onsets matters, since parallel conflicts are perhaps driven by characteristics exclusive to the broader environments of ongoing conflict in which they begin. As such, if this assumption of homogeneity among civil wars is faulty, such that initial and parallel civil wars are systematically driven by different characteristics, then the extant literature of civil war is limited in its explanatory power. This leads to Meta-Hypothesis 1 concerning the nature of conflict studies and the underlying mechanisms of initial and parallel civil wars:6

Meta-Hypothesis 1. The correlates of initial civil wars differ from the correlates of parallel civil wars.

6By Meta-Hypothesis I mean an empirical expectation that arises from my general perspective, rather than a novel hypothesis generated by the internal logic of a causal theory.
2.4 When Conflict Begets Conflict

Meta-Hypothesis 1 suggests that the underlying correlates of parallel civil wars are systematically different from those of initial civil wars. This necessarily entails that parallel civil wars only systematically occur following the presence of an ongoing conflict. That is, if Meta-Hypothesis 1 is correct, then, rather than being driven by characteristics of the state, the onset of parallel civil wars should be influenced by the context of ongoing conflict in the state. More specifically, parallel civil wars should be influenced by the characteristics of ongoing conflicts facing the state.

Several existing studies detail the significant relationship between ongoing conflicts and the onset of additional civil wars. Reputation arguments of civil war, for instance, highlight the influence of multiple active and potential rebels in affecting states’ strategic decisions concerning civil conflict. As Walter (2006, 2009) points out, states are more likely to fight hard against separatist demands when there are other potential separatist groups in the state, since acquiescence may motivate additional rebellion. Thus, the need for states to appear strong against potential separatists leads not only to civil war, but also to very long and bloody conflicts. Similarly, Ayres and Saideman (2000) and Saideman and Ayres (2000) show that separatist and irredentist conflicts are more likely to occur in states with ongoing separatist conflicts.

Much like the structural characteristics of the state, ongoing conflicts may motivate additional rebellion through a variety of mechanisms. Ongoing conflicts signal broad dissatisfaction with the state and underscore increasingly popular views of government illegitimacy (Wimmer, Cederman and Min, 2009). Such views of illegitimacy may be further strengthened if governments, in fighting ongoing civil wars, resort to or allow strategies of civilian targeting (Fjelde and Hultman,
2013; Hultman, 2007, 2012; Valentino, Huth and Balch-Lindsay, 2004; Wood, 2010, 2014a,b). Such broadening dissatisfaction may buttress the grievances of nascent challenger groups, strengthening their resolve and willingness to fight (Wucherpfennig et al., 2012). Furthermore, observing other groups in conflict against the state may lead moderate groups to fight (Tarrow, 1998). That is, ongoing conflicts provide a mechanism of emulation within the state and fuel the mobilization of new combatants based on grievances against an increasingly illegitimate state.

Aside from motivating aggrieved groups to take up arms, ongoing civil wars may also provide nascent rebels with new means or opportunities to fight. Similar to conflicts in neighboring states, ongoing conflicts within the state may increase local flows of weapons and combatants, allowing potential rebels to take up arms comparatively easier (Buhaug and Gleditsch, 2008; Salehyan and Gleditsch, 2006). The Tigrayan People’s Liberation Front in Ethiopia, for example, was able to begin their insurgency because of access to the weapons and supplies flowing to the nearby conflict with the Eritrean People’s Liberation Front. As such, in addition to providing an opportunity for aggrieved groups to mobilize, ongoing civil wars make undertaking rebellion logistically easier, increasing the chances for parallel conflict.

But perhaps the greatest benefit of ongoing conflicts to potential rebels is the opportunity facilitated by dividing and distracting the state. Fighting civil wars requires incumbent regimes to devote military and political resources toward combating ongoing insurgencies in specific parts of the country. Given that states face finite resource constraints, governments are thus faced with distinct opportunity costs; the resources devoted to combating ongoing conflicts diminish the availability of resources for fighting conflicts in other parts of the state. The diminishing availability of state military resources, by limiting the state’s ability to put down
new rebellions, increases the opportunity for new rebel groups to sustain militarized campaigns against the state. The various forces comprising the Mujahideen in Afghanistan, for example, were able to sustain their campaigns against the Afghan government partly through the divided nature of the Afghan and Soviet militaries across the countryside. Similarly, the Abu Sayyaf rebel group in the Philippines survived by operating in the shadow of the much stronger MILF/MNLF rebel campaigns which attracted the bulk of the government’s resources and attention.

These mechanisms highlight several important characteristics of periods of ongoing conflict that favor the onset of parallel civil wars. First, the simple presence of an ongoing civil war in the state increases the chances for an additional civil war, either through mechanisms of grievance or opportunity, to begin. Perhaps more importantly, these mechanisms should be exacerbated by the presence of multiple ongoing conflicts. Increasing numbers of ongoing civil wars should provide nascent rebels with an increasingly strong signal of popular dissatisfaction with the incumbent political regime. Similarly, increasing numbers of ongoing civil wars should both provide potential rebels with multiple avenues of resources for additional conflicts and increasingly divide the state’s military and political resources, providing further opportunity to sustain an insurgency.

Taken together, these mechanisms entail the potential for states to become involved in ongoing conflict traps, in which active civil wars serve as the foundation for additional hostilities, such that conflict in the state begets conflict. Put succinctly, while the presence of an ongoing conflict in the state should increase the likelihood of an additional conflict, increasing numbers of ongoing conflicts should further increase the chance of a parallel civil war. This leads to my first hypothesis,

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[7] It is important to note that the conflict traps I refer to here are conceptually different from extant notions of conflict traps in which states suffer recurring periods of civil war over time (Collier et al., 2003; Walter, 2004).
which tests for a relationship between ongoing conflicts and the onset of parallel civil wars:

**Hypothesis 1.** Parallel civil war onsets are more likely in states as the number of ongoing civil wars in the state increases.

But not all civil wars exert equal strategic influence on the state. Conflicts over territory, for instance, often occur in geographically remote regions of the state far from centers of political power. As such, territorial conflicts often require large amounts of state resources and force governments to travel vast distances to project military power and combat territorial insurgencies (Buhaug and Rød, 2006; Buhaug, Cederman and Rød, 2008; Buhaug, 2010). Furthermore, territorial civil wars, which often overlap with ethnic conflicts, are often particularly prolonged and prone to violence against civilians, which should exacerbate perceptions of government illegitimacy and increase chances for the spread of conflict (Buhaug, Gates and Lujala, 2009; Fjelde and Hultman, 2013; Wucherpfennig et al., 2012). Taken together, then, territorial conflicts should increase the chances of parallel conflict by dividing state resources for prolonged periods and increase chances of additional groups, motivated by grievances from ongoing conflicts, taking up arms.

Conflicts over the control of government, in contrast, are often comparatively short and, rather than utilizing civilian targeting, rely on military confrontations between government and rebel forces (Balcells and Kalyvas, 2014; Butcher, 2015). As such, relatively short governmental conflicts limit chances of conflict spreading within the state, since periods of conflict are similarly short. These diverging mechanisms lead to a refinement of Hypothesis 1 by developing contrasting expectations based on the typology of ongoing conflicts:

**Hypothesis 1a.** Parallel civil war onsets are more likely in states as the number of ongoing territorial civil wars in the state increases.
Hypothesis 1b. *Parallel civil war onsets are unaffected as the number of ongoing governmental civil wars in the state increases.*

Alternatively, civil wars vary significantly in their severity (Lacina and Gleditsch, 2005). Some conflicts result in thousands of battle-related deaths, while others barely muster a few dozen fatalities over the course of fighting. One of the primary indicators of conflict severity is the resources and manpower devoted to fighting (Balcells and Kalyvas, 2014). That is, strong rebel challengers require the government to expend vast resources to combating rebellion, while weak rebels, who routinely utilize guerrilla and indirect warfare, require fewer resources to fight (Kalyvas and Balcells, 2010).

As such, increasingly severe conflicts in the state signal that the government is already committing significant resources to fighting ongoing rebellion, increasing their opportunity costs of suppressing additional civil wars. In addition, increasingly severe conflicts mean that the governments’ resources are increasingly divided or concentrated against particularly strong opponents, limiting its ability to fight additional civil wars and, subsequently, increasing the prospects for nascent rebels to sustain parallel campaigns. This leads to my final hypothesis regarding the relationship between ongoing conflicts and parallel civil wars:

**Hypothesis 2.** *Parallel civil war onsets are more likely in states as the severity of ongoing civil wars in the state increases.*

These hypotheses suggest that the characteristics of ongoing conflicts significantly affect the onset of parallel civil wars. In conjunction with Meta-Hypothesis 1, these hypotheses also suggest that a unique set of indicators are the motivating forces underlying parallel conflicts. Taken together, this implies that the onset of parallel civil wars is best explained by leveraging the characteristics of ongoing conflicts, rather than by simply applying structural characteristics of the state.
This implication leads to my second Meta-Hypothesis about the nature of parallel civil war:

**Meta-Hypothesis 2.** *Empirical models of parallel civil war that incorporate characteristics of ongoing conflicts in the state perform better than empirical models that only incorporate structural state characteristics.*

### 2.5 Baseline Model Data and Research Design

The arguments derived above assert that the correlates of initial and parallel civil wars should differ in cross-national analyses. To test my baseline argument about the nature of civil war onset, I rely on three complimentary empirical approaches. First, I estimate a baseline logit model of civil war onset that captures both the distinction between initial and parallel civil wars and the major structural characteristics that influence conflict onset. Second, I apply my baseline model specification and conflict typology to alternative civil war onset measures taken from existing studies. This serves as a robustness test for the construction of the main dependent variables. Third, I fully replicate three canonical studies of civil war onset, Fearon and Laitin (2003), Sambanis (2004), and Wimmer, Cederman and Min (2009), using the new distinction between initial and parallel civil wars to assess the robustness of the baseline findings to alternative indicator and model specifications. The data for the baseline analyses utilize country-year observations of civil war onset from 1946 to 2010, providing a full universe of 7,908 country-years for the analyses.\(^8\)

The two main dependent variables capture the distinction between initial and

\(^8\)The replication analyses, however, are restricted to the original years of the replication studies. As such, replication of the Fearon and Laitin (2003) analyses are limited to the years 1946-1999, replication of the Sambanis (2004) analyses are limited to the years 1946-1999, while the replication of the Wimmer, Cederman and Min (2009) analyses are limited to the years 1946-2005.
parallel civil war onsets. Both dependent variables are dichotomous indicators of whether a state becomes involved in a civil war in a given year, taken from the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al., 2002; Pettersson and Wallensteen, 2015).\textsuperscript{9} Specifically, the first dependent variable, “Initial Civil War Onset,” captures whether the state becomes involved in a civil war, provided that the state is not already involved in a period of ongoing conflict. The second dependent variable, “Parallel Civil War Onset,” captures whether a new civil war begins in a given year, conditional on the state already being involved in a period of ongoing conflict.\textsuperscript{10} Thus, this new conflict taxonomy simply categorizes each civil war onset in the Armed Conflict Dataset into a mutually-exclusive classification as an initial or parallel conflict.\textsuperscript{11}

To examine Meta-Hypothesis 1, I utilize a model specification that broadly captures the most conceptually and empirically robust correlates of civil war onset (Bleaney and Dimico, 2011; Hegre and Sambanis, 2006). First, I utilize the country’s population size, which is robustly associated with higher levels of civil war. To capture relative economic depravation, I utilize GDP per capita, taken from the Penn World Tables and World Development Indicators. Conceptually, low GDP per capita is associated with increased economic grievances against the state, with lower levels of individual wealth associated with higher probabilities of civil war onset. Similarly, to model ethnopolitical grievances, I rely on the size of the state’s ethnic

\textsuperscript{9}The ACD codes the state year of a civil war as the year in which a conflict reaches 25 battle-related deaths during calendar year. Episodes of conflict are defined by continuous conflict activity; once beginning, a conflict continues as long as the death toll exceeds 25 battle-related deaths per year. As such, a new conflict episode is coded as beginning after a period of at least one year of inactivity.

\textsuperscript{10}For empirical consistency, analyses using the “Initial Civil War Onset” measure drop ongoing conflict years since, by construction, ongoing conflict years would be automatically coded as zero, biasing the results. In contrast, analyses using the “Parallel Civil War Onset” measure include all ongoing conflict years, since any conflict year could potentially yield a parallel conflict onset.

\textsuperscript{11}Of the 274 civil war onsets in the Armed Conflict Dataset, 195 are classified as initial civil war onsets, while 79, or roughly 28%, are classified as parallel civil war onsets.
population that is excluded from the state political process (Wimmer, Cederman and Min, 2009).

I use two different measures to represent the state’s natural resource wealth. First, I use per capita oil production in the state, taken from Wimmer, Cederman and Min (2009). Additionally, I use the Lujala (2010) measure of whether secondary diamonds are cultivated in the state. Both of these measures empirically measure potential spoils for greedy rebels and/or important sources of financing for rebel groups, increasing the opportunity for rebellion.

Similarly, I use two separate geographic measures of conflict feasibility. First, I utilize the percentage of the state covered in rough or mountainous terrain, which should favor guerrilla warfare and insurgent tactics (Fearon and Laitin, 2003). To capture the potential for conflict contagion and neighborhoods of civil war in the international community, I use a weighted average spatial lag of conflict in surrounding countries (Buhaug and Gleditsch, 2008). Increasing values of the spatial lag indicate that states are located in regions in which ongoing civil wars are increasingly prevalent in proximate states, increasing chances for conflict spillover and the emulation of rebel groups abroad.

I also model two political characteristics of the state that may influence the feasibility of civil war. First, I utilize a dichotomous indicator of whether the state is a democracy on the Polity IV scale. The democratic civil peace argues that democratic states are better equipped at peacefully resolving internal political conflict, so democracy should correlate with lower chances for civil war onset. Alternatively, the insurgency model of conflict argues that civil war is more likely when central governments are internally weak and fractured, since they are less able to mount effective counters to rebellion (Fearon and Laitin, 2003). As such, I model regime instability through a dicotomous measure of whether there has been a
regime change in the previous three years. Finally, I model possible time trends in the data through a count of years since the previous conflict onset, as well as cubic splines of time since the previous conflict onset (Beck, Katz and Tucker, 1998).

2.6 Baseline Empirical Model Results

The results of the baseline empirical analyses are detailed in Table 2.1. To reiterate, Meta-Hypothesis 1 argues that the underlying mechanisms of initial and parallel civil war onsets should be different, such that the empirical correlates of initial and parallel civil wars similarly differ. Said another way, the correlates that significantly affect initial civil wars should largely differ from those that significantly affect parallel civil wars. To that end, Model 1 details a standard civil war model for all country-years using a simple dichotomous indicator of whether a civil war began in the state in a given year. Model 2 and Model 3 utilize the same model specification, but trade the general civil war onset dependent variable for my new initial and parallel civil war onset classification.

Broadly, the results of these baseline analyses strongly support Meta-Hypothesis 1. If the underlying mechanisms influencing the onset of initial and parallel civil wars are the same, then the empirical indicators that significantly affect both types of civil war onset should be similar. Of the nine covariates of interest, however, only two indicators, the size of the state’s excluded ethnic population and neighborhood levels of civil war, significantly influence the onset of both initial and parallel civil wars in the same direction. This is an interesting finding, especially concerning

---

12 For modeling consistency, Model 2 drops 1,101 ongoing conflict years from the analyses, since, by definition, these year cannot experience an initial conflict onset. Model 3, however, retains the 178 years of initial conflict onsets analyzed in Model 2, leading to 1,232 conflict-years in Model 3. As such, the number of observations in Model 1 is given by the number of observations in Model 2 plus the number of dropped ongoing conflict years, rather than the joint number of observations in Model 2 and Model 3.

13 In addition, two covariates, mountainous terrain and democracy, are jointly insignificant for
### Table 2.1. Baseline Model of Initial and Parallel Civil War Onset, 1946-2010

<table>
<thead>
<tr>
<th></th>
<th>(1) All Civil War Onset</th>
<th>(2) Initial Civil War Onset</th>
<th>(3) Parallel Civil War Onset</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td>0.206***</td>
<td>0.110</td>
<td>0.407***</td>
</tr>
<tr>
<td></td>
<td>(0.073)</td>
<td>(0.060)</td>
<td>(0.127)</td>
</tr>
<tr>
<td><strong>GDP per capita</strong></td>
<td>-0.218***</td>
<td>-0.271***</td>
<td>-0.066</td>
</tr>
<tr>
<td></td>
<td>(0.081)</td>
<td>(0.096)</td>
<td>(0.162)</td>
</tr>
<tr>
<td><strong>Excl. Pop</strong></td>
<td>0.143***</td>
<td>0.177***</td>
<td>0.212**</td>
</tr>
<tr>
<td></td>
<td>(0.052)</td>
<td>(0.054)</td>
<td>(0.106)</td>
</tr>
<tr>
<td><strong>Oil Production</strong></td>
<td>0.010</td>
<td>0.009</td>
<td>0.106**</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.007)</td>
<td>(0.047)</td>
</tr>
<tr>
<td><strong>Sec. Diamonds</strong></td>
<td>0.624***</td>
<td>0.267</td>
<td>1.031**</td>
</tr>
<tr>
<td></td>
<td>(0.193)</td>
<td>(0.191)</td>
<td>(0.425)</td>
</tr>
<tr>
<td><strong>Mtn. Terrain</strong></td>
<td>0.122</td>
<td>0.077</td>
<td>0.314</td>
</tr>
<tr>
<td></td>
<td>(0.072)</td>
<td>(0.052)</td>
<td>(0.219)</td>
</tr>
<tr>
<td><strong>Neigh. Civil War</strong></td>
<td>0.717***</td>
<td>0.677**</td>
<td>0.980**</td>
</tr>
<tr>
<td></td>
<td>(0.267)</td>
<td>(0.279)</td>
<td>(0.410)</td>
</tr>
<tr>
<td><strong>Democracy</strong></td>
<td>-0.007</td>
<td>-0.187</td>
<td>0.209</td>
</tr>
<tr>
<td></td>
<td>(0.212)</td>
<td>(0.255)</td>
<td>(0.297)</td>
</tr>
<tr>
<td><strong>Regime Instability</strong></td>
<td>0.266</td>
<td>0.420**</td>
<td>0.119</td>
</tr>
<tr>
<td></td>
<td>(0.177)</td>
<td>(0.195)</td>
<td>(0.433)</td>
</tr>
<tr>
<td><strong>Time Since Onset</strong></td>
<td>0.013</td>
<td>0.157**</td>
<td>-0.125</td>
</tr>
<tr>
<td></td>
<td>(0.055)</td>
<td>(0.073)</td>
<td>(0.077)</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>-5.740***</td>
<td>-5.237***</td>
<td>-8.791***</td>
</tr>
<tr>
<td></td>
<td>(0.660)</td>
<td>(0.589)</td>
<td>(1.487)</td>
</tr>
</tbody>
</table>

**Observations**: 7,628, 6,574, 1,232

**NOTE**: Robust standard errors in parentheses. Models include cubic spline functions of time since previous onset (n.s.). Significance Levels (two-tailed): *** p<0.01, ** p<0.05

The differing effects in five other empirical indicators of civil war onset imply that there is significant variation in what influences initial versus parallel civil wars. These indicators also provide significant nuance to the underlying conceptualization of civil war.
mechanisms influencing the onset of conflict and in how mechanisms of greed, grievance, and feasibility affect the onset of civil war. First, consider GDP per capita, which is routinely used to model economic grievances against the state (Collier and Hoeffler, 2004; Fearon and Laitin, 2003). Examining the new typology of civil war onset, GDP per capita only significantly affects the onset of initial civil wars, but not the onset of multiple or subsequent conflicts. That is, GDP per capita and, conceptually, economic grievances against the state, are good at explaining the shift from periods of peace to periods of civil war. In contrast, economic grievances against the state may not be good at explaining the onset of multiple conflicts once the state becomes embroiled in a first civil war.

Similarly, regime instability is a robust predictor of civil war onset in extant studies (Hegre and Sambanis, 2006). But regime instability also only significantly explains the onset of initial civil wars. Extant approaches argue that regime changes signal governmental weakness, providing an increased opportunity for nascent rebel challengers. However, distinguishing between initial and parallel civil wars indicates that such opportunism may be short-lived or rather narrow in its benefit. Based on Table 2.1, regime instability may provide an opportunity for conflict for groups already motivated to fight, but once a first conflict occurs, nascent rebels find opportunity for conflict in alternative mechanisms. That is, regime instability may influence the timing of civil conflict, especially first civil wars, more than the reasoning behind why groups at large take up arms against the state.

Perhaps most interestingly, Table 2.1 provides significant nuance to the relationship between natural resources and civil war onset. While several existing studies find an empirical relationship between natural resources and civil war onset (Collier and Hoeffler, 2004; Fearon and Laitin, 2003; Lujala, 2010), others detail that these relationships are either exceptionally weak or empirically non-existent (Elbadawi
and Sambanis, 2002; Regan and Norton, 2005; Smith, 2004), leading to a distinct lack of empirical robustness across the literature (Ross, 2006). Table 2.1 shows, however, that natural resources significantly affect the onset of some civil wars, with oil and diamond production each influencing the onset of parallel, but not initial, civil wars.

Thus, Table 2.1 implies broad differences between the correlates of initial and parallel civil wars. Overall, these results entail the distinct need for increasingly nuanced conceptual and empirical examinations of the mechanisms underlying civil war onset, especially in the context of parallel conflicts. That natural resources only affect parallel conflict onsets, for instance, highlights a distinct strategic interaction between natural resource availability and the opportunity for conflict brought about by ongoing hostilities. If could be, for instance, that the potential for wealth brought about by natural resource extraction only entices rebel groups under the cover of ongoing conflicts that deter the attention of the regime toward other parts of the state. Alternatively, the exclusive link between economic grievances and initial civil wars perhaps implies that, whereas initial conflicts are motivated by grievances, parallel conflicts become increasingly opportunistic, operating solely under the cover of ongoing fighting.

2.7 Alternative Baseline Model Robustness Analyses

To further examine the robustness of these baseline findings, I conduct two empirical robustness analyses. First, I apply my baseline empirical model and civil war onset typology to three alternative empirical definitions of civil war onset. Second, I apply my civil war onset typology toward explicitly replicating three canonical civil war onset studies.
The three alternative civil war onset measures are taken from the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al., 2002; Pettersson and Wallensteen, 2015), the dataset used in the Fearon and Laitin (2003) civil war onset study, and the dataset used in the Sambanis (2004) civil war onset study. The first alternative empirical definition, drawn from the Armed conflict dataset, requires the highest fatality estimate for a civil war to be coded; a conflict must reach 1,000 battle-related deaths to be coded as starting.\footnote{However, once a conflict reaches this high intensity threshold and is coded as beginning, the conflict continues as long as it produces 25 battle-related deaths per calendar year.}

Similarly, the Sambanis (2004) civil war onset definition requires that a conflict reach 1,000 cumulative battle-related deaths and 100 annual battle-related deaths. In addition, the Sambanis (2004) definition requires that a conflict period not fall below 500 battle-related deaths for a three-year period. The Fearon and Laitin (2003) civil war definition uses the same coding rules, but without the minimum of 500 battle-related deaths per three-year period.

Applying my initial versus parallel civil war onset typology, the Armed Conflict Dataset yields 74 initial high intensity civil wars and 22 parallel high intensity civil war onsets. The Sambanis (2004) civil war definition produces 108 initial civil wars and 28 parallel civil wars. Finally, the Fearon and Laitin (2003) civil war definition yields 94 initial civil wars and 14 parallel civil war onsets. Figure 2.2 provides the relative frequency of initial and parallel civil war onsets across these empirical definitions. Each alternative civil war measure uses a significantly higher threshold of violence, and each alternative measure is more biased toward initial civil war onsets than the baseline measure, with the maximum relative frequency of parallel civil war onsets among these alternatives, using the Armed Conflict Dataset high intensity threshold, approaching only 23%.
To that end, Table 2.2 replicates the baseline empirical analyses in Table 2.1 using each of these alternative civil war onset measures. The results of these robustness checks largely conform to the implications of Meta-Hypothesis 1. Only GDP per capita and oil production are consistent across the conflict typology when using the high-intensity conflict threshold in the Armed Conflict Dataset. Similarly, while only population is consistent across the typology using the Fearon and Laitin (2003) civil war definition, only oil production is consistent when using the Sambanis (2004) civil war definition.

The empirical influence of each structural indicator is not consistent across these alternative civil war measures. GDP per capita, for instance, jointly affects
Table 2.2. Alternative Model Specification of Initial and Parallel Civil War Onset

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Initial Civil War Onset</td>
<td>Parallel Civil War Onset</td>
<td>Initial Civil War Onset</td>
</tr>
<tr>
<td>Population</td>
<td>0.048</td>
<td>0.426**</td>
<td>0.195**</td>
</tr>
<tr>
<td></td>
<td>(0.101)</td>
<td>(0.189)</td>
<td>(0.079)</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-0.417***</td>
<td>-0.871***</td>
<td>-0.406***</td>
</tr>
<tr>
<td></td>
<td>(0.150)</td>
<td>(0.224)</td>
<td>(0.139)</td>
</tr>
<tr>
<td>Excl. Population</td>
<td>0.273***</td>
<td>0.053</td>
<td>0.232***</td>
</tr>
<tr>
<td></td>
<td>(0.087)</td>
<td>(0.172)</td>
<td>(0.072)</td>
</tr>
<tr>
<td>Oil Production</td>
<td>0.057**</td>
<td>0.242**</td>
<td>0.031</td>
</tr>
<tr>
<td></td>
<td>(0.022)</td>
<td>(0.116)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>Sec. Diamonds</td>
<td>-0.093</td>
<td>-0.604</td>
<td>-0.015</td>
</tr>
<tr>
<td></td>
<td>(0.368)</td>
<td>(0.561)</td>
<td>(0.297)</td>
</tr>
<tr>
<td>Mtn. Terrain</td>
<td>0.178**</td>
<td>-0.022</td>
<td>0.117</td>
</tr>
<tr>
<td></td>
<td>(0.090)</td>
<td>(0.274)</td>
<td>(0.100)</td>
</tr>
<tr>
<td>Neigh. Civil War</td>
<td>0.100</td>
<td>2.217***</td>
<td>0.137</td>
</tr>
<tr>
<td></td>
<td>(0.477)</td>
<td>(0.790)</td>
<td>(0.483)</td>
</tr>
<tr>
<td>Democracy</td>
<td>-0.334</td>
<td>0.130</td>
<td>-0.490</td>
</tr>
<tr>
<td></td>
<td>(0.428)</td>
<td>(0.879)</td>
<td>(0.425)</td>
</tr>
<tr>
<td>Regime Instability</td>
<td>0.637**</td>
<td>0.407</td>
<td>0.506*</td>
</tr>
<tr>
<td></td>
<td>(0.282)</td>
<td>(0.581)</td>
<td>(0.261)</td>
</tr>
<tr>
<td>Time Since Onset</td>
<td>-0.214**</td>
<td>-0.091</td>
<td>-0.203**</td>
</tr>
<tr>
<td></td>
<td>(0.085)</td>
<td>(0.105)</td>
<td>(0.096)</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.483***</td>
<td>-8.061***</td>
<td>-5.403***</td>
</tr>
<tr>
<td></td>
<td>(0.897)</td>
<td>(2.280)</td>
<td>(0.733)</td>
</tr>
<tr>
<td>Observations</td>
<td>6,842</td>
<td>851</td>
<td>5,270</td>
</tr>
</tbody>
</table>

NOTE: Robust standard errors in parentheses. Models include cubic spline functions of time since previous onset (n.s.). Significance Levels (two-tailed): *** p<0.01, ** p<0.05, * p<0.10

the onset of initial and parallel high intensity civil wars, but only affect initial civil war onsets under the Fearon and Laitin (2003) and Sambanis (2004) civil war definitions. Similarly, oil production per capita significantly affects the onset of initial and parallel civil wars using the ACD high intensity definition and the Sambanis (2004) civil war definition, but only significantly influences the onset of parallel civil wars under the Fearon and Laitin (2003) civil war definition. However, the overall results of these alternative model specifications are largely consistent.
with Meta-Hypothesis 1. That is, Meta-Hypothesis 1 explicitly asserts that the correlates of initial and parallel civil wars differ, but not explicitly how they differ. Said another way, Meta-Hypothesis 1 expects the empirical inconsistency found in Table 2.2, further supporting the notion that the correlates of civil war onset are not robust across a typology of initial and parallel civil wars.

Table 2.3 extends this robustness analysis by applying the initial versus parallel civil war typology toward explicitly replicating three canonical studies of civil war onset, using both the empirical definition of civil war and original covariates of those studies. Again, only population and oil production are consistent in the Fearon and Laitin (2003) replication, while only population is consistent across the Sambanis (2004) replication. In contrast, no empirical measures are consistent across the parallel civil war typology when replicating Wimmer, Cederman and Min (2009).

Taken together, these three approaches highlight the marginal robustness of several common indicators of civil war onset. That is, while several empirical indicators have been shown to be empirically robust predictors of civil war onsets, few covariates appear robust to a reclassification of civil war into an initial versus parallel conflict dichotomy. This is problematic; if the correlates of initial and parallel civil wars are systematically different, then, as Meta-Hypothesis 1 asserts, lumping these indicators together into homogenous analyses risks conflating the underlying mechanisms of initial and parallel conflicts and limiting the scope of insight into the foundations of civil war.

15In replicating the Fearon and Laitin (2003) analyses, the “new state” covariate was excluded from parallel civil war analyses, since no new state experienced a parallel civil war onset.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(10)</td>
<td>(11)</td>
<td>(12)</td>
</tr>
<tr>
<td></td>
<td>(13)</td>
<td>(14)</td>
<td>(15)</td>
</tr>
<tr>
<td>Initial Civil War Onset</td>
<td>0.237***</td>
<td>0.390**</td>
<td>0.223***</td>
</tr>
<tr>
<td></td>
<td>(0.062)</td>
<td>(0.159)</td>
<td>(0.063)</td>
</tr>
<tr>
<td></td>
<td>0.494***</td>
<td>(0.153)</td>
<td>(0.065)</td>
</tr>
<tr>
<td></td>
<td>0.089</td>
<td>0.279***</td>
<td>(0.091)</td>
</tr>
<tr>
<td>Parallel Civil War Onset</td>
<td>-0.318***</td>
<td>-0.039</td>
<td>-0.223***</td>
</tr>
<tr>
<td></td>
<td>(0.073)</td>
<td>(0.206)</td>
<td>(0.063)</td>
</tr>
<tr>
<td></td>
<td>-0.336</td>
<td>(0.248)</td>
<td>(0.023)</td>
</tr>
<tr>
<td></td>
<td>-0.109***</td>
<td>-0.064</td>
<td>(0.058)</td>
</tr>
<tr>
<td>Population</td>
<td>0.058</td>
<td>0.015</td>
<td>0.690</td>
</tr>
<tr>
<td></td>
<td>(0.359)</td>
<td>(0.954)</td>
<td>(0.477)</td>
</tr>
<tr>
<td></td>
<td>0.932</td>
<td>(0.801)</td>
<td>(0.391)</td>
</tr>
<tr>
<td></td>
<td>0.463</td>
<td>0.522</td>
<td>(0.578)</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>0.465</td>
<td>0.654</td>
<td>0.586</td>
</tr>
<tr>
<td></td>
<td>(0.578)</td>
<td>(1.338)</td>
<td>(0.035)</td>
</tr>
<tr>
<td>GDP Growth</td>
<td>-0.911</td>
<td>-6.257***</td>
<td>-0.223***</td>
</tr>
<tr>
<td></td>
<td>(1.011)</td>
<td>(1.779)</td>
<td>(0.477)</td>
</tr>
<tr>
<td>Ethnic Frac.</td>
<td>0.058</td>
<td>0.015</td>
<td>0.690</td>
</tr>
<tr>
<td></td>
<td>(0.359)</td>
<td>(0.954)</td>
<td>(0.477)</td>
</tr>
<tr>
<td></td>
<td>0.932</td>
<td>(0.801)</td>
<td>(0.391)</td>
</tr>
<tr>
<td></td>
<td>0.463</td>
<td>0.522</td>
<td>(0.578)</td>
</tr>
<tr>
<td>Religious Frac.</td>
<td>0.465</td>
<td>0.654</td>
<td>0.586</td>
</tr>
<tr>
<td></td>
<td>(0.578)</td>
<td>(1.338)</td>
<td>(0.035)</td>
</tr>
<tr>
<td>Excl. Population</td>
<td>0.103</td>
<td>0.324**</td>
<td>(0.391)</td>
</tr>
<tr>
<td></td>
<td>(0.391)</td>
<td>(0.578)</td>
<td>(0.035)</td>
</tr>
<tr>
<td># Incl Grps</td>
<td>0.292</td>
<td>0.586</td>
<td>(0.310)</td>
</tr>
<tr>
<td></td>
<td>(0.557)</td>
<td>(0.035)</td>
<td>(0.035)</td>
</tr>
<tr>
<td>Imperial Past</td>
<td>0.292</td>
<td>0.586</td>
<td>(0.310)</td>
</tr>
<tr>
<td></td>
<td>(0.557)</td>
<td>(0.035)</td>
<td>(0.035)</td>
</tr>
<tr>
<td>Oil Production</td>
<td>0.752***</td>
<td>1.030***</td>
<td>0.473</td>
</tr>
<tr>
<td></td>
<td>(0.288)</td>
<td>(0.385)</td>
<td>(0.293)</td>
</tr>
<tr>
<td></td>
<td>1.038***</td>
<td>(0.483)</td>
<td>(0.014)</td>
</tr>
<tr>
<td></td>
<td>0.045***</td>
<td>(0.074)</td>
<td>(0.074)</td>
</tr>
<tr>
<td>Mtn. Terrain</td>
<td>0.231**</td>
<td>0.048</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(0.090)</td>
<td>(0.217)</td>
<td>(0.006)</td>
</tr>
<tr>
<td></td>
<td>0.011</td>
<td>(0.007)</td>
<td>(0.058)</td>
</tr>
<tr>
<td></td>
<td>0.094</td>
<td>0.178</td>
<td>(0.171)</td>
</tr>
<tr>
<td>Noncont. State</td>
<td>0.462</td>
<td>0.301</td>
<td>0.006</td>
</tr>
<tr>
<td></td>
<td>(0.297)</td>
<td>(0.420)</td>
<td>(0.007)</td>
</tr>
<tr>
<td></td>
<td>0.007</td>
<td>0.058</td>
<td>(0.171)</td>
</tr>
<tr>
<td>New State</td>
<td>1.291***</td>
<td>(0.491)</td>
<td>(0.171)</td>
</tr>
<tr>
<td></td>
<td>0.663***</td>
<td>0.316</td>
<td>0.586***</td>
</tr>
<tr>
<td></td>
<td>(0.213)</td>
<td>(0.483)</td>
<td>(0.176)</td>
</tr>
<tr>
<td></td>
<td>0.586***</td>
<td>(0.270)</td>
<td>(0.176)</td>
</tr>
<tr>
<td>Anocracy</td>
<td>0.591***</td>
<td>1.040</td>
<td>0.366</td>
</tr>
<tr>
<td></td>
<td>(0.218)</td>
<td>(0.680)</td>
<td>(0.241)</td>
</tr>
<tr>
<td></td>
<td>0.504</td>
<td>(0.498)</td>
<td>(0.201)</td>
</tr>
<tr>
<td></td>
<td>0.418**</td>
<td>(0.355)</td>
<td>(0.201)</td>
</tr>
<tr>
<td>Regime Instability</td>
<td>-0.113</td>
<td>0.045</td>
<td>-0.129</td>
</tr>
<tr>
<td></td>
<td>(0.110)</td>
<td>(0.208)</td>
<td>(0.095)</td>
</tr>
<tr>
<td></td>
<td>-0.039</td>
<td>(0.161)</td>
<td>(0.073)</td>
</tr>
<tr>
<td></td>
<td>-0.025</td>
<td>(0.078)</td>
<td>(0.073)</td>
</tr>
<tr>
<td></td>
<td>(0.746)</td>
<td>(2.648)</td>
<td>(1.129)</td>
</tr>
<tr>
<td></td>
<td>-12.319***</td>
<td>(2.881)</td>
<td>(2.881)</td>
</tr>
<tr>
<td></td>
<td>-4.800***</td>
<td>(0.666)</td>
<td>(0.666)</td>
</tr>
<tr>
<td></td>
<td>-7.361***</td>
<td>(1.688)</td>
<td>(1.688)</td>
</tr>
<tr>
<td>Constant</td>
<td>-6.104***</td>
<td>-9.196***</td>
<td>-7.013**</td>
</tr>
<tr>
<td></td>
<td>(0.746)</td>
<td>(2.648)</td>
<td>(1.129)</td>
</tr>
<tr>
<td></td>
<td>-12.319***</td>
<td>(2.881)</td>
<td>(2.881)</td>
</tr>
<tr>
<td></td>
<td>-4.800***</td>
<td>(0.666)</td>
<td>(0.666)</td>
</tr>
<tr>
<td></td>
<td>-7.361***</td>
<td>(1.688)</td>
<td>(1.688)</td>
</tr>
<tr>
<td>Observations</td>
<td>5,564</td>
<td>889</td>
<td>5,304</td>
</tr>
<tr>
<td></td>
<td>842</td>
<td>6,536</td>
<td>1,289</td>
</tr>
</tbody>
</table>

NOTE: Robust standard errors in parentheses. Models include cubic spline functions of time since previous onset (n.s.). Significance Levels (two-tailed): *** p<0.01, ** p<0.05
2.8 Leveraging Conflict Characteristics for Parallel Conflict Onset

An additional benefit of distinguishing between initial and parallel civil wars is that it permits the testing of Hypothesis 1 and Hypothesis 2, which anticipate that the characteristics of ongoing conflicts shape the onset of additional hostilities. In examining this broad assertion, I rely on two simple characteristics of ongoing conflicts, the number of ongoing civil wars and the severity of those conflicts.

In examining the components of Hypothesis 1, I utilize a count of the ongoing territorial and governmental civil wars in the state in a given year (Gleditsch et al., 2002; Pettersson and Wallensteen, 2015). Hypothesis 1 broadly predicts that increasing numbers of ongoing conflicts increases the chances of an additional conflict onset. Its component parts, Hypothesis 1a and Hypothesis 1b, expect contrasting effects, with more territorial and governmental conflicts increasing and decreasing the chances of a parallel conflict onset, respectively.

Hypothesis 2 asserts that increasing the severity of ongoing conflicts, by diverting more state attention and resources, increases the chances of parallel conflict onset. To test Hypothesis 2, I use the aggregate number of battle-related deaths in a state from ongoing conflicts, taken from the Battle-Related Deaths Dataset (Lacina and Gleditsch, 2005).

The results of the parallel conflict models are detailed in Table 2.4. Again, we are interested in three separate effects: the number of ongoing conflicts in the state, the diverging effects of territorial and governmental conflicts, and the severity of ongoing civil wars facing the state. As such, Model 16 details a model including the total number of ongoing civil wars facing the state. Model 17 divides the number of ongoing conflicts into counts of territorial and governmental conflicts facing the
state. Model 18 estimates the effect of ongoing conflict severity on parallel civil war onset. Finally, Model 19 specifies a full model which contains both the count of ongoing territorial and governmental conflicts and the severity of those conflicts.

### Table 2.4. Ongoing Conflict Effects on Parallel Civil War Onset, 1946-2010

<table>
<thead>
<tr>
<th></th>
<th>Parallel Civil War Onset</th>
<th>Parallel Civil War Onset</th>
<th>Parallel Civil War Onset</th>
<th>Parallel Civil War Onset</th>
</tr>
</thead>
<tbody>
<tr>
<td># Ongoing Conflicts</td>
<td>0.187***</td>
<td>(0.061)</td>
<td>0.257***</td>
<td>(0.089)</td>
</tr>
<tr>
<td># Ongoing Terr. Conflicts</td>
<td>0.318***</td>
<td>(0.108)</td>
<td>0.257***</td>
<td>(0.089)</td>
</tr>
<tr>
<td># Ongoing Gov. Conflicts</td>
<td>-0.479</td>
<td>(0.266)</td>
<td>-0.685**</td>
<td>(0.297)</td>
</tr>
<tr>
<td>Battle-Related Deaths</td>
<td></td>
<td></td>
<td>0.127***</td>
<td>0.145***</td>
</tr>
<tr>
<td>Population</td>
<td>0.397***</td>
<td>(0.107)</td>
<td>0.379***</td>
<td>(0.053)</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>-0.020</td>
<td>(0.159)</td>
<td>-0.058</td>
<td>(0.142)</td>
</tr>
<tr>
<td>Excl. Population</td>
<td>0.229**</td>
<td>(0.105)</td>
<td>0.190*</td>
<td>(0.106)</td>
</tr>
<tr>
<td>Oil Production</td>
<td>0.104**</td>
<td>(0.044)</td>
<td>0.113***</td>
<td>(0.036)</td>
</tr>
<tr>
<td>Sec. Diamonds</td>
<td>0.849**</td>
<td>(0.359)</td>
<td>0.973***</td>
<td>0.804**</td>
</tr>
<tr>
<td>Mtn. Terrain</td>
<td>0.232</td>
<td>(0.205)</td>
<td>0.242</td>
<td>(0.176)</td>
</tr>
<tr>
<td>Neigh. Civil War</td>
<td>0.916**</td>
<td>(0.420)</td>
<td>1.056**</td>
<td>(0.417)</td>
</tr>
<tr>
<td>Democracy</td>
<td>0.106</td>
<td>(0.306)</td>
<td>0.112</td>
<td>(0.298)</td>
</tr>
<tr>
<td>Regime Instability</td>
<td>0.202</td>
<td>(0.422)</td>
<td>0.363</td>
<td>(0.428)</td>
</tr>
<tr>
<td>Time Since Onset</td>
<td>-0.084</td>
<td>(0.093)</td>
<td>-0.102</td>
<td>(0.087)</td>
</tr>
<tr>
<td>Constant</td>
<td>-8.820***</td>
<td>(1.379)</td>
<td>-7.998***</td>
<td>(1.353)</td>
</tr>
<tr>
<td>Observations</td>
<td>1,232</td>
<td>1,232</td>
<td>1,182</td>
<td>1,182</td>
</tr>
</tbody>
</table>

NOTE: Robust standard errors in parentheses. Models include cubic spline functions of time since previous onset (n.s.). Significance Levels (two-tailed): *** p<0.01, ** p<0.05

Again, the results of Table 2.4 broadly support the arguments that the char-
acteristics of ongoing conflict influence the onset of additional hostilities. The coefficient for the number of ongoing conflicts is positive and significant in Model 16, suggesting a significant impact on the likelihood that an additional civil war will begin. As the state is beset with additional challengers to governmental power, the state’s resources and attention are increasingly divided, opening new opportunities for nascent rebels to undertake their own rebellion with limited fear of being immediately crushed by the government military.

This effect is exacerbated as governmental forces are drawn farther from centers of state political power. In line with Hypothesis 1a and Hypothesis 1b, the coefficient on the number of ongoing territorial conflicts is positive and significant in Model 17, while the coefficient on the number of governmental conflicts is negative, but not significant. In line with theory, this suggests a contrasting relationship between the type of ongoing conflict and the chances for an additional conflict onset. Territorial conflicts draw state resources to disparate areas of the state, thus dividing the state’s military strength and limiting the regime’s ability to put down additional rebellions. As such, additional territorial conflicts in the state provide an increased opportunity for additional rebels to take up arms, increasing the chances of parallel conflict onset.

It is often difficult to draw substantive conclusions from regression coefficients in nonlinear models. To better interpret the substantive implications of these effects, Figure 2.3 provides the predicted probabilities of parallel civil war onset as the number of ongoing conflicts in the state increases. The first plot in Figure 2.3 provides the predicted probabilities as the number of conflicts increases. The second plot in Figure 2.3 shows the predicted probabilities as the number of territorial conflicts in the state increases. In both plots, all other continuous and dichotomous variables are held at their mean and modal values, respectively.
In line with theory, as the number of ongoing conflicts in the state increases, parallel conflicts become increasingly likely, broadly supporting the notion that conflict begets conflict within the state. As the number of ongoing conflicts in the state increases, the probability of a parallel civil war onset increases to as much as 0.11. This effect is exacerbated when accounting specifically for the influence of territorial conflicts in the state. Specifically, the probability of a parallel civil war increases to as much as 0.21, almost double the probability as when simply accounting for all ongoing conflicts, when focusing exclusively on the number of ongoing territorial conflicts.
NOTE: Predicted probability plot corresponds to Model 18. All other continuous covariates are held at their mean values, and all other dichotomous variables are held at their modal value. Plot shows the predicted probability of a parallel civil war onset as the severity of ongoing civil wars in the state increases.

Building further, the coefficient on the severity of existing conflicts is positive and significant in Model 18, asserting a strong relationship between the bloodiness of ongoing civil wars and the likelihood that an additional conflict will begin. As ongoing conflicts become more severe, such that the scope of the threat against the government, and the scale of resources required to combat ongoing conflicts, increases, parallel civil wars become more likely.

This is corroborated in Figure 2.4, which presents the predicted probability of a parallel civil war onset as the severity of ongoing conflicts increases. All other continuous and dichotomous variables are held at their mean and modal values,
respectively. When ongoing conflicts are relatively bloodless, such that limited resources and attention are required to fight existing insurgencies, the chances of an additional conflict remain low, with only about a 0.01 probability of a parallel conflict occurring. As the severity of ongoing conflicts increases, however, the probability that an additional conflict will occur increase sharply, rising to as much as 0.08 when conflicts are particularly bloody.

Taken together, these results suggest that the onset of parallel civil wars are significantly affected by the characteristics of ongoing conflicts, rather than underlying structural conditions of the state that exist separate from actual conflicts. This implication is the nexus of Meta-Hypothesis 2 that empirical models of parallel civil war onset incorporating conflict characteristics perform better than baseline structural models. To that end, Figure 2.5 provides ROC curves for both the conflict model, taken from Model 19, and the structural model, taken from Model 3.

In terms of model fit, the conflict characteristics model performs better than the baseline structural model, based on the area under the ROC curve. Whereas the area under the structural model is 0.76, the area under the conflict characteristics model curve increases to 0.83. That is, the conflict characteristic model performs better, in terms of classification accuracy and correctly classifying the onset of parallel civil wars, than the baseline structural characteristics model. A comparison of the area under the curves reveals statistically significant improvements (p < 0.01) in the classification accuracy of the conflict characteristics model over the baseline structural characteristics model. As such, the conflict characteristics model utilized in the main analyses provides a significant increase in the substantive explanatory power of models of parallel civil war onset. In addition, such conflict characteristics models increase the classification power of empirical models of parallel conflict
2.9 Conclusion and Extensions

Civil wars are a devastating experience for states. For many states, however, this devastation is compounded by the onset of multiple civil wars. In addition to spreading the consequences of conflict across a broader portion of the state, such parallel civil wars divide and spread the government’s attention and resources and further increase the threat to the regime’s survival.

The civil war literature has examined myriad conceptual mechanisms and structural indicators that increase states’ chances of experiencing civil war. But
the literature has never questioned whether the onset of such parallel civil wars are systematically different, or driven by different mechanisms, than the initial civil wars that first lead states into periods of conflict. In addressing this conceptual gap, I have shown that the empirical indicators of initial and parallel civil wars are, in fact, quite different, and that many common indicators of civil war, such as economic grievances and regime instability, exclusively impact the onset of initial conflicts. In contrast, indicators such as natural resource wealth exclusively influence the onset of parallel civil wars, adding a distinct nuance to studies of civil war onset.

Given that parallel civil wars are systematically different from initial conflicts, a natural extension is to question whether the characteristics of ongoing conflicts, characteristics that are exclusive to the broader contexts of parallel civil wars, significantly affect the onset of additional hostilities. Ongoing conflicts divide state resources and provide new or renewed mechanisms to bolster groups’ grievances and ability to fight against the state, fueling both the motivation and opportunity for conflict. In line with theory, these effects are exacerbated as the state faces greater numbers of challengers, with additional numbers of ongoing civil wars, particularly territorial conflicts, significantly increasing the likelihood of parallel conflict onset. In addition, relatively bloody civil wars, which require vast governmental resources to fight, also increase the chances of parallel civil wars beginning, since particularly violent conflicts signal the division and distraction of incumbent regimes, offering increased opportunities to sustain additional rebellions.

As such, states in conflict face a distinct possibility of experiencing multiple civil wars. While these insights are very informative for the study of civil war, they also lead to several theoretical questions. For instance, why do particular groups in the state choose to take up arms and begin initial or parallel civil wars? An emerging
literature highlights the need to account for group-level characteristics in examining the onset of civil war (Cederman, Wimmer and Min, 2010; Wucherpfennig et al., 2011). The conflict mechanisms leading to parallel civil wars detailed here may significantly interact with such group-level mechanisms, providing a contextual account of why certain groups in the state take up arms while others remain at peace.

In addition, these implications lead to practical questions for states concerning how to fight ongoing conflicts while managing the threat of parallel civil wars. That is, how can states allocate finite resources and best fight ongoing insurgencies while remaining able to sufficiently combat possible parallel conflicts? Alternatively, how can states manage broader environments of conflicts to keep hostilities from spreading to additional groups within the state? Given the devastating implications of civil wars, these questions should be at the forefront of states’ strategic decisions during periods of conflict. Broadly, the results presented here detail an important strategic insight, how periods of conflict can quickly spiral from bad to worse, for numerous states at risk of facing multiple and sorely devastating civil wars.
Chapter 3  
The Intrastate Contagion of Ethnic Civil War

3.1 Introduction

A prominent feature of international relations in the twentieth and twenty-first centuries has been the precipitous rise of militant groups and the general trend from interstate to intrastate conflicts, particularly in the post-Cold War era (Fearon and Laitin, 2003; Gleditsch et al., 2002; Hegre and Sambanis, 2006).¹ A developing literature further details the propensity of civil conflicts to cluster geographically and spread through localized neighborhoods of states around the world (Buhaug and Gleditsch, 2008; Sambanis, 2001). Such spatial concentrations are readily apparent in the density of civil conflicts in sub-Saharan Africa in the 1990s, the “African World War,” or the myriad intrastate disputes in the Middle East during the 2000s.

But the historical record is also rife with instances of conflicts, particularly ethnic conflicts, clustering not only among, but also within, states involved in

¹In this essay I refer interchangeably to civil wars, civil conflicts, and intrastate conflicts. When using the term “interstate contagion,” I refer to the process by which the occurrence of civil war in one state increases the likelihood of civil war in a neighboring state. When using the term “intrastate contagion,” I refer to the same underlying process, but between ethnic groups in the same state.
periods of civil war. The Indian government, for example, has waged a long series of conflicts against ethnic separatists clustered in its northeast regions. Similarly, Russia’s North Caucasus region remains a hot spot of ethnic insurgency and violence. To be sure, ethnic conflicts and ethnic violence have, both anecdotally and empirically, been shown to expand and diffuse within states during the course of conflict (Weidmann, 2011; Zhukov, 2012).

Best illustrating the ramifications of such intrastate contagion is the birth and growth of the Tigrayan People’s Liberation Front (TPLF), the military wing of the Tigray ethnic group, in Ethiopia from 1976-1993. During the Ethiopian Marxist coup of 1974, the Eritrean People’s Liberation Front (EPLF) took advantage of the confusion in the capital to escalate a long-simmering bid for independence in the northeast of the country. Two years later, the TPLF, based in the province of Tigray neighboring Eritrea and with the strategic assistance of the EPLF, launched its own insurgency aimed at overthrowing the military-controlled Derg government and demanding self-determination for all Ethiopian people.

Initially small and relatively ignored by an Ethiopian military involved in multiple civil conflicts, the TPLF gradually grew, eventually becoming the main opposition force in the country. By 1989, the TPLF joined and led an umbrella militant group, the Ethiopian People’s Revolutionary Democratic Front (EPRDM), toppling the Ethiopian government only four years later.

The plethora of localized ethnic conflicts in India, Russia, and Ethiopia anecdotally suggest that ethnic civil wars cluster within certain regions of the state. Motivated by these examples, I ask whether ethnic conflicts systematically follow patterns of concentration and contagion between ethnic groups similar to those witnessed between states. In answering this question, I apply existing theories of civil war contagion to the level of individual ethnic groups and show that the
prevalence and geographic proximity of ongoing ethnic conflicts significantly affects individual groups’ decisions to engage in conflict. Building further, I contend that this contagion effect is significantly affected by overall levels of conflict in the state, such that ethnic groups take advantage of combined logistic and strategic opportunities afforded by proximate conflicts when deciding to rebel.

I contribute to the literatures on civil war contagion and ethnic conflict in several meaningful ways. First, I show that significant patterns of conflict contagion exist not only between, but also within, states. Second, I show that there exist strategic interdependencies between ethnic groups in the state, such that the occurrence of ethnic conflict is, at least in some cases, a dynamic and contextual process. Third, I show why some ethnic groups engage in civil war while others, even those with similar group characteristics, do not. Finally, empirical results indicate that the question of why some ethnic groups rebel is, at least in part, significantly affected by broader sub-state contexts of ongoing conflict.

I proceed as follows. In the next section I review the pertinent literature on processes of contagion, with a particular emphasis on processes of civil war and conflict contagion. I then briefly review the pertinent literature on ethnic conflict. I synthesize these themes by applying theories of interstate conflict contagion to particular ethnic groups in the state and develop a theory of intrastate conflict contagion centered on logistic and strategic opportunism. Using this theory, I first derive the baseline expectation that ethnic groups are more likely to engage in civil war as ongoing conflicts become more prevalent and geographically proximate. I then expand on this baseline expectation by arguing that processes of intrastate contagion are further influenced by overall levels of conflict within the state. Using spatial weighting techniques, I test the implications of this theory on the onset of ethnic civil war at the level of individual ethnic groups. These empirical results are
supplemented with several robustness checks centered on other possible underlying spatial influences. I conclude by examining the results of this research design and discuss implications for the spread and propagation of ethnic civil war.

3.2 The Contagion of Civil War

Similar to previous studies, I define contagion as the process by which the likelihood of an event in one unit or place is increased by the occurrence of a similar, but uncoordinated, event in an interdependent or nearby unit or place (Elkins and Simmons, 2005; Strang, 1991). Outside of conflict contagion, such processes have been found in the diffusion of similar policies and the spatial clustering of similar regimes, notably democratic regimes, across countries (Elkins and Simmons, 2005; Gleditsch and Ward, 2000, 2001; Starr, 1991).

Recently, scholars have shown the propensity for civil wars to cluster and spread through the international system, creating localized neighborhoods of conflict (Braithwaite, 2010; Buhaug and Gleditsch, 2008; Gleditsch, 2007; Lake and Rothchild, 1998; Ward and Gleditsch, 2002). While Sambanis (2001) shows that having a neighbor in conflict is a significant predictor of ethnic war onset, Hegre and Sambanis (2006) show that the total number of neighbors involved in civil conflicts is one of the most robust predictors of civil war onset. That is, states in increasingly conflict-prone regions are more likely to also experience civil war.

But what accounts for these trends of civil conflicts clustering and diffusing through international regions or neighborhoods of states? Perhaps most prominently,

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2 Some studies also utilize the term “diffusion” to refer to the same process.

3 I use the term “neighborhood” here as a more flexible form of “region.” Both terms refer to groups of states or units of interest. However, the term “region” is often used to refer to rather large and time-invariant groupings (i.e. “West Africa” or “Southeast Asia.” To avoid this static and macro aggregation, I prefer the term “neighborhood” to refer to any salient grouping of states or units for particular periods of time. Colloquially, however, the two terms are largely interchangeable.
accounts of civil war contagion build from the spillover of the negative externalities of ongoing conflicts into neighboring states. For example, civil wars increase the numbers and circulation of arms, many of which may travel across borders into neighboring states, making it comparatively cheaper and easier for potential rebels to take up arms. Furthermore, as suggested by Salehyan and Gleditsch (2006), civil wars also increase flows of refugees throughout regions, which may facilitate the spread of weapons, mercenary fighters, and conflict ideologies to neighboring states. Additionally, as in the case of Sierra Leone and Liberian refugees, displaced persons can exacerbate domestic economic competition and political instability, further increasing the risk of conflict. This latter point is emphasized by Braithwaite (2010), who shows that the risk of civil conflict contagion is most prominent in states with low state capacity.

Beyond the physical spread of violence, civil wars may also spread via strategic emulation by potential rebels after observing rebel groups abroad, especially in structurally equivalent states and states with inconsistent political institutions (Buhaug and Gleditsch, 2008; Maves and Braithwaite, 2013). Potential rebels may be inspired to pursue conflict against target governments after observing success of similar groups operating in similar conditions. Hill, Rothchild and Cameron (1998), for example, cite the localized contagion of conflict among the republics of the former Yugoslavia after witnessing the relatively easy secession of Slovenia. Additionally, Forsberg (2008) points out the propensity for ethnic groups in polarized societies to emulate ethnic conflicts in proximate, ethnically-polarized states. These notions are paralleled by Ayres and Saideman (2000), who show that minority groups in states are affected both by the experiences of ethnic rebels abroad and at home.

Such emulation effects have also been shown to vary as access and flows of information change in both space and time. Hill and Rothchild (1986), for example,
show that simple proximity to ongoing conflicts is not necessarily enough to spark domestic unrest. Rather, the likelihood that conflict will spread between neighboring states is partially dependent on potential rebels’ access to information about conflicts abroad. That is, for strategic emulation to affect the spread of civil war, rebels must be able to access and discern meaningful information from ongoing conflicts. These notions are supported by Kuran (1998), who asserts that decreasing costs of information exchange between states exacerbates chances of conflict contagion via emulation.

In sum, these studies point out that the occurrence of civil war is not sufficiently or completely explained by characteristics inherent to individual states. Rather, the onset of conflict is significantly affected by broader neighborhood effects surrounding the state that facilitate the spread of conflict. That is, the occurrence of conflict is partially dependent on interdependencies between political units and their surroundings. Such spread or contagion can be the result of one or several mechanisms, both physical and strategic, that infect surrounding states with domestic hostilities.

### 3.3 Existing Approaches to Ethnic Civil War

Several studies propose ethnically heterogeneous or polarized states as having a higher likelihood of civil war (Brancati, 2006; Montalvo and Reynal-Querol, 2005; Ellingsen, 2000). When ethnic divisions and public goods provisions lead to unequal distributions of state wealth through ethnic nepotism, increasing levels of ethnic heterogeneity increases the likelihood of civil conflict between governments and excluded ethnic groups (Easterly and Levine, 1997; Elbadawi and Sambanis, 2000; Vanhanen, 1999). Building further, Cederman, Weidmann and Gleditsch

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Though Ellingsen (2000) finds support for differing effects, with linear and parabolic relationships with fractionalization and polarization, respectively.
(2011) and Buhaug, Cederman and Gleditsch (2014) show that, at both the state and group levels, the relationship between economic inequality and civil conflict is parabolic; in highly unequal societies, both rich and poor groups fight more often than those with average wealth. That is, groups at the bottom of unequal societies mobilize to forcibly change their disadvantaged circumstances, while groups at the top mobilize to prevent the redistribution of localized wealth. Taken together, these mechanisms make sense; while the conflict between the SPLM/A and the Sudanese government was largely fought over the marginalization of minority border regions, the short-lived Niger delta conflict was fought by the ethnic Ijaw partly over the perceived exploitation of the region’s oil wealth.

Paralleling the unequal distribution of wealth in states is the unequal distribution of political power and the exclusion of certain ethnic groups from the domestic political process. Wimmer, Cederman and Min (2009) show that larger populations excluded from the domestic political process increase a state’s likelihood of experiencing civil war. Similarly, Cederman, Wimmer and Min (2010) and Buhaug, Cederman and Rød (2008) show that politically excluded groups are more likely to rebel and, additionally, that groups whose political status has been downgraded by the political apparatus are more likely to take up violence to change their circumstances.

More pertinent to this study, Sambanis (2001) argues that ethnic heterogeneity increases the likelihood of conflict since ethnic concentration lowers collective action problems for potential rebels and support bases are territorially defined (Kaufmann, 1996), a finding paralleled by Elbadawi and Sambanis (2000) and Ellingsen (2000). Building this logic further, Weidmann (2009) shows that ethnic conflict is driven by the spatial concentration of ethnic groups, since the spatial proximity of co-ethnics provides advantages for strategic coordination. That is, ethnic groups are
particularly apt at undertaking rebellion, since well-defined community structures and spatial concentration makes mobilization and coordination easier to achieve.

Aside from questions of motivation for resorting to violence, ethnic groups have also been shown to consider opportunities or feasibility for rebellion (Collier, Hoeffler and Rohner, 2009; Fearon and Laitin, 2003). Cederman, Buhaug and Rød (2009), for instance, show that larger ethnic groups, or those that can more effectively challenge the state when mobilized, are more likely to rebel. Relatedly, they argue that ethnic groups located far from the state political center and operating in regions of rough terrain are more likely to engage in conflict, since such conditions make counter-offensives by the state more difficult. As such, groups farther from the political center of the state should face higher chances of success than those closer to the capital. This latter finding is similarly detailed across the literature (Buhaug and Rød, 2006; Buhaug, Cederman and Rød, 2008; Buhaug, 2010; Wucherpfennig et al., 2011).\footnote{It is worth pointing out, however, that Cederman, Buhaug and Rød (2009) show that this distance and rough terrain effect holds only for ethnic territorial conflicts, and that Buhaug and Rød (2006) show this effect for territorial conflicts.}

These recent works have done much to advance the relationship between ethnic groups’ geographic and strategic considerations and the onset of civil war. They have displayed which ethnic groups are more likely to rebel, demonstrating the importance of geography, location, and access to political and economic power. But these works have, with few exceptions, largely ignored the interdependencies between ethnic groups and their broader strategic environments or contexts. Building on the insights of these works, it is important to determine how groups’ broader strategic and political environments shape their decisions to engage in war.
3.4 The Intrastate Contagion of Ethnic Civil War

Having detailed the pertinent scholarship on ethnic conflict occurrence and the contagion of civil war in the international community, I now synthesize and apply these literatures to develop a theory of ethnic conflict contagion within states. Existing studies have shown a positive relationship between ongoing civil wars and groups’ decisions to fight. Ayres and Saideman (2000) and Saideman and Ayres (2000), for instance, argue that ethnic groups’ decisions to undergo separatist or irredentist conflicts are significantly shaped by ongoing conflicts in the same state, respectively. Furthermore, Walter (2006, 2009) poignantly shows how the potential for hostilities to spread within the state conditions the strategies and processes of ongoing conflicts. But such studies often treat ongoing conflicts as equally influential, regardless of their spatial or temporal characteristics, and with little regard to the influences of space and geography on such relationships. Broadly, if additional conflicts are caused by the contagion of ethnic conflict, either through physical or strategic mechanisms, then closer conflicts or neighborhoods of violence around particular groups should exert greater influence on groups’ conflict calculus. That is, rather than specifying all ongoing conflicts as exerting equal influence on groups’ decisions to fight, processes of contagion imply that more proximate conflicts should more heavily influence such decisions.

While I focus on the contagion of civil war between ethnic groups in the state, this is not to imply that ethnic groups are the only groups potentially affected by the intrastate contagion of conflict. To be sure, myriad groups in the state, such as religious sects, student groups, or nascent political movements, may benefit from the same logistical and strategic benefits derived here. However, widespread data on such potential rebel movements, specifically those potential challengers that do not rebel, remains unavailable. Focusing on ethnic groups, then, provides some insights into how the spatiality of conflict affects potential challengers’ decisions to fight. It is important to note, however, that the results presented here may not extend to other groups at large, and that we should be cautious in extending these conclusions beyond ethnic rebellion. As such, I leave open these avenues for future research.

Braithwaite (2005) nicely terms such theoretical exclusions as the “a-spatiality” of the conflict processes literature.
For states facing finite resources, fighting civil wars requires significant, and zero-sum, expenditures in conflict zones. That is, any increase in attention and resources devoted by governments to fighting domestic conflicts in one region of the state must necessarily be drawn from other regions. In a sense, then, states are faced with opportunity costs for fighting civil conflicts. Several scholars have, either directly or indirectly, referenced this zero-sum opportunity cost of civil war. Ethnic and territorial conflicts, which often occur in remote regions far from the state political center, are particularly salient in terms of requiring increasing state resources to fight since governments must travel farther to face their challengers (Buhaug and Rød, 2006; Buhaug, Cederman and Rød, 2008; Buhaug, 2010; Wucherpfennig et al., 2011). Said another way, ethnic groups on the periphery of the state are likely to benefit most from periods of ongoing conflict, significantly increasing the chances of their successful rebellion.

I argue that such opportunity costs facing states are strategically used by ethnic groups to decide to fight during periods of ongoing conflict. When states are embroiled in civil conflict, they must direct both attention and resources to conflict zones. This necessarily diminishes the amount of resources that can be devoted to subsequent or simultaneous conflicts. Returning to the Tigray example, ongoing conflicts in the Eritrean and Ogaden regions allowed the TPLF to operate largely unencumbered by government forces, facilitating their growth over time. Similarly, as states become involved in conflicts with more ethnic groups, their attentions and resources become increasingly divided, which furthers opportunities for additional armed groups to develop or succeed against the state. That is, potential rebels weigh their utility of fighting against the prospective level of push-back or armed

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8 Or, as is more likely the case, resources can be drawn from what could be devoted to other regions.
response from government forces. As the number of groups in conflict increases, such that government resources become increasingly divided, this expected level of response diminishes, so potential rebel groups’ expected utility of fighting increases.

In addition to this division of resources, periods of conflict involving multiple ethnic groups signals increasingly broad dissatisfaction with the state or underscores widespread views of government illegitimacy (Wimmer, Cederman and Min, 2009). Such broadening dissatisfaction can buttress the resolve of nascent challenger groups. Furthermore, similar to the insights of Tarrow (1998) and Maves and Braithwaite (2013), observing more challengers can compel moderate and undecided segments of the population to join periods of struggle against what is perceived as an increasingly weakened and divided state, thereby increasing chances for emulation. Ethnic groups, in particular, are uniquely positioned to take advantage of states’ increasingly limited resources and the disarray of ongoing conflict, since they are able to mobilize combatants relatively quickly and easily (Ellingsen, 2000; Kaufmann, 1996; Weidmann, 2009). Applying these insights, I derive my first hypothesis, which tests for a relationship between the number of groups in conflict and ethnic groups’ decisions to engage in conflict:

**Hypothesis 1.** Ethnic groups are more likely to engage in civil war as the number of other groups in ongoing conflicts against the same state increases.

In isolation, however, this strategic opportunism by potential rebels can only explain that ethnic groups take up arms, but not where or why particular groups choose to fight. Why should we expect groups to take up arms when conflicts are nearby, as opposed to when they are far away in the state? To be sure, if strategic opportunism, that groups wait until the state’s resources are divided and diverted, is the only mechanism of contagion, then it may, in fact, be in groups’ best interest to fight when ongoing conflicts are far away, such that these divisions
of resources become most pronounced. I contend, however, that such opportunity to rebel operates in conjunction with an ethnic group’s proximity to conflict in two important ways.

First, whereas ongoing conflicts offer opportunistic rebels an increased strategic chance to successfully fight against the state, nearby conflicts lower the barriers to entry into conflict by increasing local supplies of weapons and military logistics to ethnic groups in the neighborhood. Salehyan and Gleditsch (2006), in the context of the interstate contagion of civil war, argue that increased flows of weapons and combatants in regions of conflict make taking up arms easier and cheaper for potential rebels. That is, fighting nearby lowers the logistical barriers to entry into civil conflict for those seeking forcible change. Similarly, several studies have detailed the expansion of conflict zones by the spatial diffusion of violence. (Schutte and Weidmann, 2011; O’Loughlin and Witmer, 2011; Zhukov, 2012). Over time, such expanding conflict zones entail that the tools and logistics of war are increasingly available to proximate populations.

It is reasonable that these same mechanisms work to spread conflict between ethnic groups in conflict and nearby ethnic groups who may seek to challenge the state. Proximity to conflict zones should lower the barriers to entry for potential domestic challengers by increasing the availability of weapons, supplies, and recruits and, subsequently, lowering their cost of acquisition. As in the case of the Tigray in Ethiopia, proximity to an ongoing conflict facilitated the transfer and acquisition of weapons, as well as increased opportunities for coordination with other rebels (Akcinaroglu, 2012). At the same time, the expansion of ongoing conflict zones by the diffusion of violence may gradually engulf nearby ethnic groups, such that they join ongoing hostilities either willingly or by necessity (Humphreys and Weinstein, 2008; Kalyvas and Kocher, 2007). That is, conflict zones produce intrastate spillover
effects between ethnic groups, which can increase the fighting capacity of nearby groups relative to the state.9

Aside from such spillover effects, nearby conflicts also provide increased flows of information to surrounding groups. Conflicts, broadly, are characterized by information asymmetries (Fearon, 1995; Powell, 2002, 2006) and, especially in periods of civil war, breakdowns in infrastructure and flows of information. Such information asymmetries produce significant uncertainty over the distribution of capabilities and the potential outcomes of conflict. Potential challengers can, perhaps, partially overcome these information asymmetries by observing and gleaning information from ongoing conflicts. Comparatively, nearby conflicts likely produce more timely and exact information than distant conflicts, since the distance such information must travel to observers and potential challengers diminishes. That is, similar to the relationship between conflict information and emulation between states, ethnic groups learn more about how to fight the state from nearby challengers as opposed to distant ones. Taken together, these spillover and informational effects form my second hypothesis, which posits a contagion effect of conflict between ethnic groups:

**Hypothesis 2.** *Ethnic groups are more likely to engage in civil war as the level of conflict among other ethnic groups in their immediate geographic neighborhood increases.*

Finally, I argue that the intrastate contagion of ethnic conflict is exacerbated by the presence of multiple groups in conflict. As ongoing conflicts become increasingly close, chances of spillover effects and information transfers increase, lowering logistical barriers to entry and increasing chances of emulation. Similarly, when

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9There is also a corollary argument that when such barriers to conflict are lowered, ethnic groups take up arms either against or to defend themselves from nearby hostile ethnic groups in an effort to bolster their own intergroup security (Hardin, 1995; Petersen, 2002; Posen, 1993). Since this essay exclusively considers the intrastate contagion of conflict aimed against the state, and not between ethnic groups, I leave this question to future work.
multiple groups in an ethnic group’s neighborhood are in conflict, such spillover
effects are likely to increase, since there are multiple sources of weapons, logistics,
etc., as well as multiple sources of information of government fighting capacity
and, perhaps, successful strategies against the state. Relatedly, multiple proximate
groups in conflict further signals a broader willingness to fight against the state,
rather than a single group’s divergence into conflict. That is, multiple groups in
conflict may more effectively sway nascent rebel groups to foment rebellion as
underlying sentiments of anger and a desire to force change appear increasingly
common. Taken together, this suggests that the likelihood that proximate conflicts
spread to neighboring ethnic groups increases as more groups engage in conflict,
leading to my final hypothesis:

**Hypothesis 3.** *Ethnic groups are more likely to engage in civil war as the level
of conflict involving other ethnic groups in their geographic neighborhood increases
and the number of groups engaged in ongoing conflicts increases.*

### 3.5 Data and Research Design

In testing this theory of intrastate ethnic conflict contagion, I rely on spatial lag
logit regressions of group-level ethnic conflict onset. To populate the universe of
ethnic groups, I utilize the GeoEPR dataset, which details the geographic locations
of all major ethnic groups around the world (Wucherpfennig et al., 2011).10 These
geo-located data are necessary for mapping the proximity of individual groups to
ongoing conflicts. The data provide 588 distinct ethnic groups with an average
lifespan of 43 years, totaling roughly 25,000 group-years.11 To account for the

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10 Some ethnic groups in the dataset are large enough and geographically ubiquitous throughout
the state, such that they are not coded with geographic specificity. Following previous works, I
exclude these groups from the analyses, leaving 588 ethnic groups for analyses.

11 For purposes of consistency, the data utilize ethnic groups from all countries in the EPR
dataset, even those countries with only a single geo-located ethnic group. Replicating the analyses
to exclude these countries does not change the substantive conclusions.
hierarchical nature of the data, group-years nested in groups nested in states, I employ a multilevel modeling framework in which the intercepts vary as a function of clustered group and country-level variables.\textsuperscript{12}

The main dependent variable is a dichotomous indicator of whether a particular ethnic group begins a civil war against the state in a given year, taken from the UCDP/PRIO Armed Conflict Dataset and the Ethnic Power Relations Dataset (Gleditsch et al., 2002; Harbom and Wallensteen, 2010; Wimmer, Cederman and Min, 2009). In addition, I use a second dichotomous measure of whether a particular ethnic group begins a civil war in a given year, contingent on the state already being in conflict with another ethnic group in that year. Thus, this second dependent variable is the exact same construction as the main dependent variable, but specifically captures when a given ethnic group is the second or later group to take up arms. I term the onset of such engagements “parallel conflicts.” Together, these measures allow me to test for significant intrastate contagion effects for all groups, and specifically for groups during periods of ongoing conflict.\textsuperscript{13}

Although similar, it is important to test both dependent variables separately. Logically, civil wars occurring due to the spatial contagion of ongoing conflicts, at least in the case of intrastate contagion, must be parallel civil wars. As such, limiting analyses to groups in periods of ongoing civil war is necessary to better

\textsuperscript{12}Specifically, the multilevel model is a three-level mixed effects logit model. The group-level covariates detailing group size and distance to capital city affect the level-2 intercept. The country-level covariates specifying excluded population size, population size, GDP per capita, and mountainous terrain affect the level-3 intercept. Alternatively, substantive conclusions derived from non-nested rare events logit regressions remain unchanged.

\textsuperscript{13}As presented, the second dependent variable could also be described as “subsequent conflict onsets.” It is also possible, however, that multiple conflict onsets in a given year are parallel onsets, regardless of their sequencing. That is, groups beginning the first conflict in a year may take up arms partly because of an expectation that other groups will subsequently take up arms. To briefly account for this possible relationship, analyses were also conducted classifying all instances of multiple conflict onsets in a given year as “parallel onsets.” Substantive results using this alternative dependent variable construction remain unchanged.
reveal the “true” effect, if any, of intrastate conflict contagion. Similarly, testing the first hypothesis concerning the number of groups in conflict necessarily requires that much of any significant effect relate to parallel conflicts. At the same time, however, we might wish to examine the comparative significance of these conflict characteristics against the broader spectrum of characteristics that lead to civil war for all groups that could potentially rebel against the state. Said another way, modeling the effects of these conflict characteristics on all groups, even those in states not experiencing ongoing conflicts, offers some comparative justification as to their substantive impact in the full universe of characteristics leading ethnic groups to civil war.\footnote{Methodologically, it might also be the case that the large number of zeros in the explanatory variables of interest, in the case of all groups, could lead to a situation in which even small changes in the explanatory variable lead to significant effects in the empirical model. As such, subsetting the data to years of ongoing conflicts offers a partial check against this problem.}

In testing the above hypotheses, I employ two explanatory variables and an interaction effect to capture the effects of intrastate contagion. The first explanatory variable is a count of the number of ethnic groups in the country engaged in civil war in a given year. This measure specifically tests the effects of Hypothesis 1.

To test Hypothesis 2, that there exists a significant contagion effect of conflict between ethnic groups, I build a spatial lag variable for each ethnic group. More precisely, this spatial lag variable is a spatial weights matrix, \( W \), specifying the prevalence and proximity of ethnic civil war around a particular ethnic group. In scalar notation, this spatial lag variable formally takes the form:

\[
W_{ijt} = \sum_{j=1}^{n} \left( \frac{1}{d_{ijt}} \ast y_{jt} \right)
\]

The spatial weights matrix is first generated as an \( N \times N \) connectivity matrix,
which pairs each ethnic group $i$ with all other ethnic groups in the same state $j$.\textsuperscript{15} To fill the cells of the matrix, the inverse distance between each group pair, measured in kilometers from the centroid of each group’s geographic area, is calculated, such that groups closer together have higher cell values than groups farther apart.\textsuperscript{16} Each inverse distance between group $i$ and a group $j$ is then weighted by multiplying the value of the dependent variable for group $j$, $y_{jt}$, which, in this case, can take on a value of either 0 or 1 for whether each $j$ group is in conflict in a given year. This creates the spatially-weighted lag of conflict occurrences. Finally, the matrix is collapsed into a scalar by summing the weighted inverse distances between group $i$ and the other groups $j$ for each year.\textsuperscript{17}

The spatial lag variable, then, represents the weighted sum of the distance between group $i$ and all other groups in conflict in the state in a given year. That is, the value of the spatial lag increases as the distance between group $i$ and all other groups in conflict $j$ decreases, capturing the proximity or geographic closeness.

\textsuperscript{15}For example, in a country with 17 ethnic groups, the connectivity matrix is $17 \times 17$. By convention, the connectivity matrix is block-diagonal, with the diagonal elements being set to zero, so that only the connections between distinct groups are measured.

\textsuperscript{16}For simple coefficient scaling purposes, the distances calculated in this project are scaled by 100 when taking the inverse. Hence the distance being placed under 100, rather than under 1. However, as Plümper and Neumayer (2010) point out, in absence of specific theory about the nature of the distance function, it is important to test several possible functional forms for robustness of the spatial dependency. The substantive results in this project are robust to several distance functions in $W$, including $\frac{1}{d_{ijt}}$, $\frac{1}{\ln(d_{ijt})}$, and $\frac{1}{\sqrt{d_{ijt}}}$, as well as $d_{ijt}$, though in the latter case the signs of the coefficients are reversed since distance is increasing for groups farther apart.

\textsuperscript{17}The spatial lag is used to measure the contagion of conflict among ethnic groups within the state. In practice, however, the spatial lag measures the spatial dependency of conflict; whether conflict in one location is systematically affected by conflict in other locations. In line with theory, this spatial dependence is interpreted as evidence of a contagion process within the state. However, this apparent spatial dependence, and apparent contagion of conflict, may actually be caused by spatial heterogeneity - the spatial clustering of the underlying causes of conflict - that is not captured by the model specification. To account for this possible spatial heterogeneity, the robustness checks section highlights and tests two other possible spatial effects. In addition, the conclusion briefly offers insights into other possible spatial mechanisms that may be driving the spatial dependence of conflict within the state. I leave further consideration of these other possible spatial effects to future projects. See Buhaug and Gleditsch (2008) and Neumayer and Plümper (2010) for examples of empirical attempts to distinguish between spatial contagion and spatial heterogeneity in conflict studies.
of conflict surrounding each ethnic group. This measure is similar to the spatial lags employed by other studies of civil war contagion (Braithwaite, 2010; Buhaug and Gleditsch, 2008; Maves and Braithwaite, 2013). The key difference here is that the spatial lags used in previous studies represent the row-standardized weighted averages of proximate conflict, rather than weighted sums. Since the theorized mechanisms of conflict contagion, logistic and informational spread, occur over physical distance, use of the weighted sum is appropriate since it captures the raw effect of geographic proximity. I also choose the weighted sum, rather than the weighted average, to better account for the varying numbers of ethnic groups in each country, as well as to allow for more meaningful testing of the interaction effect.\textsuperscript{18}

To test Hypothesis 3, I interact this spatial lag with the number of ethnic groups in ongoing conflicts. This interaction allows for greater capturing of the prevalence and proximity characteristics of the conflict contagion effect. As the spatial lag increases, the proximity of an ethnic group to groups in conflict increases. At the same time, as the number of groups in conflict increases, the prevalence of ethnic conflict in the state increases. This interaction is important in distinguishing any combined conflict prevalence and proximity effects in terms of intrastate contagion.

The interaction effect, then, tests for the effect of heterogeneous exposure in the spatial dependence of conflict. It is worth noting that the use of this interaction effect is appropriate here because of a somewhat unique construction of the spatial lag variable. Many studies of spatial contagion rely on a single reference neighborhood

\textsuperscript{18}See (Neumayer and Plümper, 2012, 2016) for full discussion about the theoretical distinction between employing weighted average and weighted sum spatial lags. In this case, under a weighted average spatial lag, the influence exerted by surrounding groups in conflict is relative to the total number of groups in the state. Said another way, countries with fewer groups exert greater influence between groups than countries with more ethnic groups, which can be problematic for testing the geographic contagion effect of conflict across states of varying sizes.
for all units of observation, generating a single spatial weights matrix. Recall that the reference neighborhood for each ethnic group here is bounded within its own state, necessitating multiple unique spatial weights matrices only shared by ethnic groups in the same state. Since the ethnic and geographic composition of each state and, by extension, each group’s reference neighborhood, varies, it is possible for two ethnic groups to have equal values of the spatial lag, but be surrounded by vastly different numbers of ethnic groups in conflict. This substantive difference amounts to heterogeneity of exposure; that two ethnic groups in the data, in two separate reference neighborhoods, can have equal values of the spatial lag, but exist in significantly different conflict environments. The interaction effect tests whether this heterogeneous exposure among groups in differing reference neighborhoods is significant.\footnote{In contrast, use of this interaction effect is not necessarily appropriate if the scope and composition of the reference neighborhood is the same for each group. For instance, in studying the spatial dependence of conflict for states in the international system, all states share the same reference neighborhood, namely the international community. As such, the number of other states in conflict in the world is equivalent for all states, so there is no heterogeneity of exposure to be compared.}

I also include in all model specifications a series of group-level and country-level control variables. At the group level, I first control for whether the ethnic group is excluded from the state political system. I also include a dichotomous indicator of whether the political status of the ethnic group has been recently downgraded (Cederman, Wimmer and Min, 2010). I also include the natural log of the ethnic group’s relative population size, which has been shown to positively affect groups’ propensities for conflict (Cederman, Wimmer and Min, 2010; Weidmann, 2009). Finally, to measure an ethnic group’s distance to the political center of the state, I include the geographic distance from the ethnic group to the state’s capital city (Buhaug, Cederman and Rød, 2008; Wucherpfennig et al., 2011).
At the country level, I control for the natural log of GDP per capita and the natural log of the state population, which have been consistently shown to affect the onset of conflict, as well as the natural log of the size of the state’s excluded population (Hegre and Sambanis, 2006; Wimmer, Cederman and Min, 2009). I also control for the natural log of the percentage of the state covered in rough or mountainous terrain (Fearon and Laitin, 2003). To control for the possible varying effects of ethnic conflict counts in states of varying sizes, I include a count of the “remaining” ethnic groups, which is simply a count of the total number of ethnic groups minus the number of groups currently in conflict. Finally, I include a counter of group-level peace years and include squared and cubed polynomials to account for time dependence and temporal non-monotonicity in the data (Carter and Signorino, 2010).

3.6 Results and Substantive Findings

The results of the spatial regression models are detailed in Table 3.1.20 To reiterate, we are interested in three main effects: the effect of multiple ethnic groups in conflict, a group’s spatial proximity to groups in conflict, and the interaction effects of these conflict prevalence and proximity measures. To that end, Model 1 details the baseline model of conflict prevalence and proximity on ethnic conflict onset for all relevant ethnic groups. Model 2 includes the multiplicative interaction effect of the spatial weighting variable (measuring groups’ spatial proximity to conflict) and the number of groups in conflict (measuring the prevalence of ethnic conflict in the

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20 The methodological approach used here, relying on a logit regression with a spatial lag of civil conflict, largely conforms to previous studies of conflict contagion (Braithwaite, 2010; Buhaug and Gleditsch, 2008; Maves and Braithwaite, 2013). However, this approach can lead to inefficient estimates of the parameters of interest (Anselin, 1988). See Ward and Gleditsch (2002) for a Bayesian autologistic approach to more closely approximating estimates of spatial dependence in international relations, and Hughes, Haran and Caragea (2011) for a comparison of methodological approaches for approximating estimates of spatial dependence.
Model 3 and Model 4 provide the same model specifications, but exclusively analyze periods of ongoing conflict in the state through parallel conflict onset. That is, Model 1 and Model 3 test for the independent effects of groups in conflict and the spatial contagion of conflict, respectively. Model 2 and Model 4 examine whether these effects are, in fact, directly influenced or exacerbated by each other, as hypothesized by theory. Regarding model fit, likelihood ratio tests of the null model for each scenario strongly support the multilevel specification framework over the completely pooled approach. About 25% and 20% of the unexplained error variance is captured at the group and country levels for each scenario, respectively.

Broadly, the results of the multivariate analyses strongly support all salient aspects derived from the theory of intrastate contagion. Regarding Hypothesis 1, the coefficients on the number of ethnic groups in conflict in Model 1 and Model 3 are both positive and significant. This implies that as more ethnic groups in the state take up arms, additional groups in the state also face a higher likelihood of engaging in conflict.

Importantly, this significant effect applies even when groups in conflict are geographically distant. The coefficient for the number of groups in conflict is positive and significant in Model 2, suggesting a significant impact on the likelihood of ethnic civil war even for distant groups. To be sure, interpreting constitutive terms in interaction models is dangerous when the data do not include a “true” zero value (Braumoeller, 2004). Since model 2 covers all possible groups, however, both constitutive terms do contain zero points. Cautiously, I infer that, as the

\[ \text{state).} \]

However, while the data in Model 2 do contain values of zero, their interpretation is somewhat difficult. For instance, a value of zero in the spatial weighting variable could mean that there are no ongoing conflicts. Alternatively, it could mean that there are ongoing conflicts, but, in theory, they are infinitely far away from the group in question. To circumvent this confounding issue, I carefully make inferences on the constitutive terms as they approach zero, rather than at their absolute zero values.

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Table 3.1. Intrastate Neighborhood Conflict Effects on the Likelihood of Ethnic Group Conflict Onset, 1946-2008

<table>
<thead>
<tr>
<th></th>
<th>(1) All Group Conflict Onsets</th>
<th>(2) All Group Conflict Onsets</th>
<th>(3) Parallel Group Conflict Onsets</th>
<th>(4) Parallel Group Conflict Onsets</th>
</tr>
</thead>
<tbody>
<tr>
<td># Grps in Conflict</td>
<td>0.298***</td>
<td>0.256***</td>
<td>0.252***</td>
<td>0.085</td>
</tr>
<tr>
<td></td>
<td>(0.050)</td>
<td>(0.055)</td>
<td>(0.074)</td>
<td>(0.089)</td>
</tr>
<tr>
<td>Neighborhood Conflict (w.s.)</td>
<td>0.329***</td>
<td>0.205***</td>
<td>0.428***</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>(0.048)</td>
<td>(0.074)</td>
<td>(0.087)</td>
<td>(0.125)</td>
</tr>
<tr>
<td># Grps in Conflict x Neighborhood Conflict (w.s.)</td>
<td>0.032**</td>
<td>0.078***</td>
<td>0.078**</td>
<td>0.032**</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td>(0.023)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excluded Group</td>
<td>0.819***</td>
<td>0.754***</td>
<td>1.558***</td>
<td>1.172***</td>
</tr>
<tr>
<td></td>
<td>(0.207)</td>
<td>(0.207)</td>
<td>(0.413)</td>
<td>(0.399)</td>
</tr>
<tr>
<td>Group Downgraded</td>
<td>1.431***</td>
<td>1.441***</td>
<td>1.083**</td>
<td>1.269**</td>
</tr>
<tr>
<td></td>
<td>(0.278)</td>
<td>(0.277)</td>
<td>(0.529)</td>
<td>(0.512)</td>
</tr>
<tr>
<td>ln(Group Size)</td>
<td>1.596***</td>
<td>1.524***</td>
<td>2.641***</td>
<td>2.102**</td>
</tr>
<tr>
<td></td>
<td>(0.420)</td>
<td>(0.418)</td>
<td>(0.955)</td>
<td>(0.871)</td>
</tr>
<tr>
<td>ln(Distance to Capital)</td>
<td>0.123</td>
<td>0.117</td>
<td>0.040</td>
<td>0.037</td>
</tr>
<tr>
<td></td>
<td>(0.123)</td>
<td>(0.123)</td>
<td>(0.259)</td>
<td>(0.232)</td>
</tr>
<tr>
<td>ln(Excluded Population)</td>
<td>1.138**</td>
<td>1.168**</td>
<td>0.279</td>
<td>-0.488</td>
</tr>
<tr>
<td></td>
<td>(0.545)</td>
<td>(0.540)</td>
<td>(1.297)</td>
<td>(0.914)</td>
</tr>
<tr>
<td>ln(Population)</td>
<td>0.016</td>
<td>-0.002</td>
<td>-0.244</td>
<td>-0.336*</td>
</tr>
<tr>
<td></td>
<td>(0.102)</td>
<td>(0.101)</td>
<td>(0.240)</td>
<td>(0.192)</td>
</tr>
<tr>
<td>ln(Mountainous Terrain)</td>
<td>0.093</td>
<td>0.120</td>
<td>0.354</td>
<td>0.381**</td>
</tr>
<tr>
<td></td>
<td>(0.091)</td>
<td>(0.091)</td>
<td>(0.244)</td>
<td>(0.182)</td>
</tr>
<tr>
<td>ln(GDP per capita)</td>
<td>-0.318***</td>
<td>-0.320***</td>
<td>-0.856**</td>
<td>-0.834***</td>
</tr>
<tr>
<td></td>
<td>(0.122)</td>
<td>(0.121)</td>
<td>(0.365)</td>
<td>(0.270)</td>
</tr>
<tr>
<td># Remaining Groups</td>
<td>-0.036**</td>
<td>-0.033**</td>
<td>0.034</td>
<td>0.039</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.016)</td>
<td>(0.031)</td>
<td>(0.025)</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.228***</td>
<td>-3.966***</td>
<td>0.418</td>
<td>2.595</td>
</tr>
<tr>
<td></td>
<td>(1.354)</td>
<td>(1.349)</td>
<td>(3.766)</td>
<td>(2.932)</td>
</tr>
<tr>
<td>(\sigma(Group))</td>
<td>0.470</td>
<td>0.457</td>
<td>0.715</td>
<td>0.645</td>
</tr>
<tr>
<td>(\sigma(Country))</td>
<td>0.528</td>
<td>0.524</td>
<td>0.954</td>
<td>0.425</td>
</tr>
<tr>
<td>Log Pseudo-Likelihood</td>
<td>-1020.46</td>
<td>-1017.74</td>
<td>-393.759</td>
<td>-386.765</td>
</tr>
<tr>
<td>AIC</td>
<td>2074.92</td>
<td>2071.489</td>
<td>821.517</td>
<td>809.530</td>
</tr>
<tr>
<td>Observations</td>
<td>22,444</td>
<td>22,444</td>
<td>4,736</td>
<td>4,736</td>
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<tr>
<td>Number of Groups</td>
<td>567</td>
<td>567</td>
<td>322</td>
<td>322</td>
</tr>
<tr>
<td>Number of Countries</td>
<td>118</td>
<td>118</td>
<td>57</td>
<td>57</td>
</tr>
</tbody>
</table>

NOTE: Standard Errors in Parentheses. Models include linear, squared, and cubic polynomials of Group Peace Years (n.s.). Significance Levels (two-tailed): *** \(p<0.01\), ** \(p<0.05\), * \(p<0.1\)

value for the spatial lag of conflict approaches zero, such that groups in ongoing conflicts are increasingly distant, there is still a significant effect of increasing the
number of groups in conflict on the likelihood that an additional group will take up arms, further supporting Hypothesis 1. In terms of theoretical implications, this finding supports the notion that ethnic groups respond to the broader strategic setting of the state and take up arms when they sense an increased opportunity for success.

Continuing to Hypothesis 2, the empirical results support the existence of an independent spatial contagion effect between ethnic groups in conflict. In line with the theory presented, we should expect the likelihood of ethnic groups rebelling to increase as their proximity to ongoing conflict increases, since physical and informational spillover lowers the logistic and strategic barriers to entry. The coefficient on neighborhood conflict is positive and significant, supporting the notion of a spatial contagion effect within the state. As the proximity of groups in conflict increases, such that ongoing ethnic conflicts become closer, ethnic groups are more likely to take up arms against the state. Again, we can cautiously infer from the constitutive term in Model 2 that this intrastate contagion effect remains significant even when there are few surrounding groups in conflict. That is, the mere presence of nearby conflict facilitates ethnic groups’ ability to take up arms against the state.

It is often difficult to draw more meaningful substantive implications from simple coefficients in nonlinear models. To interpret the substantive implications of this contagion effect, Figure 3.1 provides the predicted probabilities of ethnic group conflict as the value of the spatial lag increases. To provide the distribution of the spatial lag in the data, Figure 3.1 also includes a rug plot of the actual values of the spatial lag. The first plot in Figure 3.1 provides the predicted probabilities

\footnote{Conversely, since the data supplied for Model 4 do not contain true zero values, I do not interpret the constitutive terms for that interaction.}
Figure 3.1. Predicted Probability of Ethnic Civil War Onset as Neighborhood Conflict Changes

**All Conflict Onset**

**Parallel Conflict Onset**

NOTE: Predicted probability plots correspond to Model 1 and Model 3, respectively. All other continuous covariates are held at their mean values, and all other dichotomous variables are held at their modal value. Plots show the predicted probability of conflict onset in an ethnic group as the value of the spatial lag increases. Rug plots show the distribution of the spatial lag in the data.

For all groups, derived from Model 1. The second plot in Figure 3.1 provides the predicted probabilities for parallel conflict onsets, derived from Model 3. In both plots, all other continuous and dichotomous variables are held at their mean and modal values, respectively.

In line with theory, as other ethnic groups in ongoing conflicts become increasingly close, the likelihood that an ethnic group will take up arms dramatically increases. Importantly, this increasing effect occurs, albeit modestly, even when groups are relatively far from ongoing conflicts, such that, even in minor terms, conflict begets
conflict. Seemingly enough, this effect is especially important when considering the onset of parallel ethnic conflicts, as the predicted probability of parallel conflict onset increases to as much as 0.33. That is, when ethnic conflict follows a contagion process within the state and groups are more likely to take up arms when conflicts are nearby, regions of the state can potentially spiral into cyclical patterns of parallel onsets as conflict spreads or shifts between proximate groups.

Figure 3.2. Conditional Effects of Neighborhood Conflict and Number of Groups in Conflict on Ethnic Civil War Onset

NOTE: Marginal effects plots correspond to Model 2 and Model 4, respectively. All other continuous covariates are held at their mean values, and all other dichotomous variables are held at their modal value. The y-axis of each plot shows the difference in the predicted probability of Conflict Onset following a change from 1 to 3 groups in conflict over the neighborhood conflict spatial lag. Rug plots show the distribution of the spatial lag in the data.

Taken together, the results thus far reveal two important characteristics of ethnic conflict. First, ethnic groups appear to strategically take advantage of the
broader conflict environment facing the state. Second, there exists a seemingly substantial contagion effect between ethnic groups in conflict; ethnic groups close to groups in ongoing conflicts are significantly more likely to rebel than groups far from ongoing hostilities.

Moving beyond these baseline expectations, Figure 3.2 provides the substantive effects of the multiplicative interaction between the intrastate contagion effect and the number of ethnic groups in ongoing conflicts in the state. The first plot in Figure 3.2 corresponds to Model 2, while the second plot in Figure 3.2 corresponds to Model 4. Paralleling Figure 3.1, both plots provide the density of the spatial lag found in the data, and all other continuous and dichotomous covariates are held at their mean and modal values, respectively. To visualize the interaction effect, the y-axis of Figure 3.2 presents the marginal effect, the difference in the predicted probability of conflict onset, when the number of ethnic groups in conflict is increased from 1 to 3. This difference is provided for all presented values of the spatial lag.

The coefficient of the interaction term is positive and significant in Model 2 and Model 4, providing empirical support for the supposed exacerbating effect of the two covariates of interest. Importantly, the marginal effect, the difference in the predicted probability of conflict, resulting from a change from 1 to 3 groups in conflict is always positive and significant. This implies that, even when relatively far from ongoing conflicts, ethnic groups are slightly more likely to take up arms as more groups enter conflict, such that, even in minor terms, conflict begets conflict. This difference in the likelihood of conflict onset exacerbates as more groups in conflict become increasingly proximate. When examining all ethnic groups in Figure 3.2, increasing the number of groups from 1 to 3 groups in conflict increases the predicted probability of conflict by an average of 0.034 over the range of the spatial
lag, and by a difference of as much as 0.11 at the maximum value of the spatial lag. Similarly, with regard to the onset of parallel ethnic conflicts, increasing the number of groups in conflict from 1 to 3 results in an average increase of 0.034 over the range of the spatial lag, and a maximum difference of 0.10 in the predicted probability of parallel conflict. In sum, Figure 3.2 provides strong support for the argument that the contagion of ethnic conflict is exacerbated by the presence of multiple sources of contagion.

As a whole, these findings are very important from the perspective of understanding the relationship between groups’ strategic situations and decisions to rebel. In line with the theory presented, multiple groups in conflict signal an increasingly divided state, such that the opportunity for successful rebellion increases. At the same time, proximate conflicts offer increases in weapons, fighters, and information, lowering both the physical and strategic barriers to entry into civil conflict for ethnic groups. When these factors converge, such that there are multiple proximate groups in conflict, ethnic groups hold several paths to acquiring diverse logistics and information, as well as the means to rally additional supporters under the banner of broader rebellion against a state increasingly under siege.

3.7 Neighborhood and Contagion Robustness Checks

Following the arguments of Buhaug and Gleditsch (2008), it could be that the seeming clustering and intrastate contagion of ethnic civil war is, in fact, driven by other underlying neighborhood effects that are spatially correlated with ethnic conflict. To account for such additional spatial effects, I recreate the previous model specifications with two group and country-level neighborhood effects that may influence the group-level onset of ethnic conflict.
First, the group-level occurrence of ethnic conflict may simply result from the spatial clustering of politically excluded groups within the state. One of the strongest predictors of group-level conflict onset is the degree of political exclusion facing an ethnic group (Buhaug, Cederman and Rød, 2008; Cederman, Wimmer and Min, 2010). Theoretically, ethnic groups may take up arms when they witness broader localized exclusion; choosing to fight on behalf of the broader excluded population. This suggests that ethnic groups should care about broader levels of relative political exclusion in their surroundings. Alternatively, the clustering of ethnic conflict could simply arise from the clustering of several excluded groups. To that end, I construct a row-standardized weighted average spatial lag measuring the relative levels of political exclusion surrounding ethnic groups. Ranging from 0 to 1, this measure captures the spatially weighted degree of political exclusion surrounding each ethnic group.

In addition, groups may be positively affected by levels of civil war outside the state. By limiting the analyses to the effects of intrastate contagion exclusively, the analyses presented may fail to account for broader international neighborhoods of conflict, thus missing the influence of civil wars in the states surrounding the ethnic group. To account for this potential outside-in contagion effect, I employ the weighted-average of intrastate conflict used by previous studies of interstate civil war contagion (Braithwaite, 2010; Buhaug and Gleditsch, 2008; Maves and Braithwaite, 2013).

As a test of robustness, Table 3.2 replicates Model 2 and Model 4 and includes each of these neighborhood effects.\textsuperscript{23} Relative levels of political exclusion in groups’ neighborhoods do not affect the onset of ethnic civil war. In contrast, when

\textsuperscript{23}For purposes of brevity, the presented models exclude the group and country-level control variables. All significant effects of the control variables remain unchanged.
Table 3.2. Broader Neighborhood Effects and Ethnic Group Conflict Onset, 1946-2008

<table>
<thead>
<tr>
<th>(5)</th>
<th>(6)</th>
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<tbody>
<tr>
<td>All Group Conflict Onsets</td>
<td>Parallel Group Conflict Onsets</td>
</tr>
<tr>
<td># Grps in Conflict</td>
<td>0.251***</td>
</tr>
<tr>
<td>(0.057)</td>
<td>(0.089)</td>
</tr>
<tr>
<td>Neighborhood Conflict (w.s.)</td>
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<tr>
<td>(0.075)</td>
<td>(0.132)</td>
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<tr>
<td># Grps in Conflict x Neighborhood Conflict (w.s.)</td>
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<tr>
<td>(0.015)</td>
<td>(0.024)</td>
</tr>
<tr>
<td>Neighborhood Political Exclusion (w.a.)</td>
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</tr>
<tr>
<td>(0.277)</td>
<td>(0.618)</td>
</tr>
<tr>
<td>Country-Level Neighborhood Conflict (w.a.)</td>
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<tr>
<td>(0.326)</td>
<td>(0.505)</td>
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<td>σ(Country)</td>
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<td>Observations</td>
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<td>Number of Groups</td>
<td>566</td>
</tr>
<tr>
<td>Number of Countries</td>
<td>118</td>
</tr>
</tbody>
</table>

NOTE: Standard Errors in Parentheses. Models include standard group and country-level controls, as well as linear, squared, and cubic polynomials of Group Peace Years (n.s.). Significance Levels (two-tailed): *** p<0.01, ** p<0.05, * p<0.1

examining all ethnic groups, broader international neighborhoods of civil war significantly increase the likelihood that a group will engage in civil war. This effect, however, becomes insignificant when exclusively examining the decision by groups to rebel during periods of ongoing conflict in Model 6, suggesting, perhaps, that the influence of civil war in the states’ neighborhood impacts initial, rather than parallel, ethnic conflicts in the state.24

The intrastate contagion effects remain significant even when controlling for

---

24I make this claim cautiously since, as to my knowledge, few studies have systematically examined whether the same factors facilitate the onset of first and subsequent civil wars in the states.
these additional underlying neighborhood effects. The logistic and informational spread from ongoing conflicts significantly increase the chances that a group will take up arms, rather than the simple clustering of multiple excluded groups. Furthermore, even when partially controlling for the influence of groups outside the state, proximate conflicts in the same state substantively increase the risk of conflict. Taken together, these additional findings further support the notion of an intrastate contagion effect between ethnic groups in conflict separate from additional structural conditions surrounding individual groups.

3.8 Conclusion and Future Research

The aims of this essay have been straightforward. Civil wars have been shown in the literature to cluster and spread between states in localized neighborhoods. In a parallel process, the analyses presented here show that these same patterns of contagion also exist within states. In line with previous works, I have shown that ethnic groups are more likely to take up arms when the state is already facing domestic challengers. Building on this insight, the results have shown robustly that ethnic groups close to ongoing conflicts and in particularly conflict-ridden regions of the state are more likely to become “infected” by neighboring conflicts and take up arms against the state.

But how does such intrastate contagion occur? In line with theory, ethnic conflicts spread within the state as the spread of arms and information lower the logistic and strategic barriers to entry for ethnic groups. Ongoing conflicts provide nascent rebels with the necessary supplies to wage war. Additionally, proximate conflicts provide important information about fighting the state, as well as displaying broader willingness to challenge the incumbent political regime. This
latter point is increasingly important as political entrepreneurs attempt to rally moderate or passive ethnic supporters to fight. While multiple ongoing conflicts divide the state, opening opportunities for recruitment and, perhaps, eventual success, proximity to ongoing conflicts provides the resources necessary to fight more effectively.

The theory developed here is one of logistical spread and strategic calculations by potential actors. There is perhaps a salient avenue to be pursued regarding how shared characteristics between groups facilitates or hinders the contagion of conflict. Buhaug and Gleditsch (2008), for instance, provide some support that ethnic linkages to ongoing conflicts in neighboring states increases the likelihood that a state will experience civil war. Building on this insight, do shared ethnic histories, either positive or negative, between groups alter the likelihood of conflict spreading?

This is not to say, however, that these mechanisms are the only paths by which civil wars spread within the state. To be sure, proximate civil wars may worsen the economic situations of nearby groups as infrastructure is damaged or business opportunities are constrained. As such, proximate ethnic groups may take up arms, not for strategic reasons, but simply to improve their diminished economic situations brought about by ongoing conflicts. Alternatively, the government itself may spread conflict within the state. That is, governments engaged in violent conflict may use the opportunity to target proximate ethnic groups, either to collectively punish potential challengers or signal violent reprisals to other groups in the country. As such, the apparent spread of conflict within the state may be the result of the contagion of state-sponsored repression under the guise of civil war.

What stands, however, is a clear spatial contagion effect of ethnic conflict within states. Ethnic groups close to ongoing fighting are significantly more likely to take up
arms than groups far from ongoing conflict. The importance of these findings cannot
be understated. While the extant literature has pointed out how characteristics
inherent to particular groups affects the onset of hostilities, these results consistently
show that ethnic groups are clearly shaped by their broader strategic surroundings.
Furthermore, these findings point out the important interdependencies between
groups in conflict and that such interactions must continue to be accounted for in
future studies of civil war.
Chapter 4  
Ready, Willing, and Able:  
The Spatial Contexts of  
Ethnopolitical Conflict

4.1 Introduction

Based on the most prominent research on ethnic rebellion, both the Bakongo people in Angola and the Ndau in Mozambique should have rebelled against their respective governments in 1991. Both groups were relatively large, existed in relatively weak states, and were situated in regions far from capital cities. Perhaps most importantly, both groups were excluded from the domestic political process by their governments, providing a mechanism of grievances often necessary to ignite rebellion. And yet, in spite of these shared characteristics, only the Bakongo in Angola, driven by intense nationalism and their political exclusion, rose in revolt while the Ndau in Mozambique remained at peace.

The diverging paths of the Bakongo and Ndau peoples nicely highlight an interesting puzzle regarding ethnopolitical exclusion and civil war. The extant literature has long asserted a robust relationship between the political exculsion of ethnic groups and the onset of civil war. Political marginalization certainly provides motivation for ethnic groups to change the status quo, and their exclusion
from the state political apparatus often leaves few options apart from violence. But if the link between political exclusion and ethnic civil war is so anecdotally and empirically robust, then why do only some excluded ethnic groups take up arms against the state? To be sure, civil wars remain a very rare event, even as political exclusion remains widespread throughout much of the world, affecting hundreds of distinct ethnic populations. In 1994, for example, ethnic Chechens began a guerrilla war against the Russian government, even as multiple other politically excluded ethnic groups remained at peace. Alternatively, the Tuareg in Niger, in both 1991 and 1997, began civil conflicts while the Hausa, Kanouri, and Toubou, all politically excluded ethnic populations, failed to mobilize against the state.

In addressing this puzzle, I argue that a key feature linking political exclusion and ethnic civil war lies in accounting for excluded groups’ broader political and strategic neighborhoods within the state. I assert that the decision to take up arms is not only a function of excluded groups’ characteristics, but also of the context in which excluded groups exist. To that end, I propose three distinct neighborhood effects to help account for why some excluded groups rebel against the state. Building on grievance-based arguments of civil war, I first contend that excluded groups in neighborhoods of inconsistent political exclusion, in which only some ethnic groups are politically excluded, are most likely to fight. Neighborhoods of inconsistent exclusion within the state exacerbate the social and political divisions between excluded and included groups, fueling the underlying resentment that motivates civil conflict.

Separately, and drawing on the literature of civil conflict contagion, I further argue that, while many excluded groups may be motivated to fight, only those with sufficient strategic or material opportunity will choose violent conflict. By increasing prospects for strategic emulation and the mobilization of combatants,
I contend that the relative prevalence of conflict among neighboring excluded ethnic groups in the state increases the likelihood of conflict. Finally, I argue that geographic proximity to groups in conflict provides material and logistical benefits, further favoring the onset of hostilities. As such, excluded groups in neighborhoods of ongoing civil war are most likely to engage in civil war.

This essay contributes to the literatures on civil war and ethnic conflict in several ways. By focusing on the contextual and neighborhood effects of civil war, I bridge existing state and group-level perspectives on ethnic civil war occurrence by examining how broader contextual mechanisms shape group-level theories of conflict. Additionally, I contribute to a growing literature that highlights the important interdependencies between groups in conflict, as well as the literature concerning the spatiality of conflict. Finally, and perhaps most importantly, the analyses presented here provide a new perspective and several substantive nuances into the question of why some ethnic groups engage in civil war while others, even those with similar characteristics, remain peaceful.

This essay proceeds as follows. In the next section I briefly review the literature regarding ethnopolitical exclusion and civil war. Building on existing arguments of grievance and opportunity, I then develop a theory that ethnic groups’ decisions to engage in civil war are significantly affected by their broader political and strategic contexts and neighborhoods. I test this theory using spatial cross-regressive models on group level data from the Ethnic Power Relations (EPR) dataset. In line with theory, empirical results suggest a significant curvilinear relationship between neighborhood levels of political exclusion in the state and excluded groups’ decisions to rebel. Excluded groups are similarly motivated to fight as the relative prevalence of conflict involving other excluded groups in the state increases. Furthermore, the results indicate a particularly strong relationship between excluded groups’
proximity to ongoing conflicts and the decision to take up arms, providing for an interesting relationship between grievance and opportunity in the escalation to conflict. I conclude by discussing the implications of these results and offering possible avenues for future extensions.

4.2 Ethnopolitical Exclusion and Civil War

Political exclusion is a strategy employed by groups controlling the state to consolidate their political power and increase the longevity and security of their rule. Such consolidation is manifest by prohibiting certain groups within the state from access to political power. While such exclusion can occur along any number of dimensions, ethnopolitical exclusion is perhaps the most salient and most utilized. The relatively fixed nature of ethnicity and the geographic concentration of coethnics makes the enforcement of political exclusion along ethnic lines relatively straightforward and comparatively easy (Rothchild, 1981). By extension, such strategies also secure political, economic, and social benefits, ranging from reinforcing ethnic and social hierarchies within the state to the selective and preferential provision of public goods for favored coethnics (Cederman, Weidmann, and Gleditsch, 2011). These benefits, of course, come at the expense of those excluded from the political apparatus, along with the discrimination and marginalization such preclusion entails.

The risk associated with such ethnopolitical exclusion is that excluded groups, motivated by their marginalization, may rebel against the state to forcibly change the political status quo. Broadly, several studies propose ethnically heterogeneous or polarized states as facing a higher likelihood of civil war (Blimes, 2006; Brancati, 2006; Cederman and Girardin, 2007; Ellingsen, 2000; Forsberg, 2008; Montalvo and Reynal-Querol, 2005; Sambanis, 2001). ¹ Many of these works highlight the

¹Though Ellingsen (2000) finds support for differing effects, with linear and parabolic relation-
concern that increasingly divided states provide greater opportunities for political exclusion and, subsequently, conflict over the power to exclude. As such, the ultimate spoils of such ethnonationalist conflicts are ownership of the state, along with the political, economic, and symbolic power such ownership entails (Wimmer, 2002). Said another way, ethnic conflict in heterogeneous societies is defined by competition between ethnic groups in power and excluded or peripheral groups not represented by the political apparatus.

Under this framework, the specific mechanisms linking ethnopolitical exclusion and civil conflict generally fall under the umbrella of grievance-based arguments of civil war (Collier and Hoeffler, 2004; Gurr, 1970, 1993). Ethnopolitical exclusion, by definition, favors certain ethnic groups at the decided expense of others, fostering resentment among marginalized populations against those ethnic groups in power. Without access to the state political apparatus, avenues of redressing such grievances prominently center on forcibly changing the system through conflict. Such resentments, then, make excluded ethnic groups robust incubators of revolutionary ideas and rebellion, mobilizing the members of excluded ethnic groups to collectively take up arms against the state.

A tangible indicator of such discrimination and resentment lies in the distribution of public goods by exclusionary governments. Wimmer (2002), using an institutionalist approach to ethnic politics, points out that, in ethnically heterogeneous societies and states with weak civil society and infrastructure, political elites have incentives to gain and maintain bases of support by favoring coethnics with public goods and political provisions. By providing coethnics with material benefits, this process solidifies political elites’ bases of support as coethnics choose to retain their political representation, and subsequent distributional favoritism, at

ships with fractionalization and polarization, respectively.
the continued expense of other ethnic groups in the state. When ethnic divisions and public goods provisions lead to unequal distributions of state wealth, civil war follows as a consequence of excluded groups seeking to forcibly reap a more favorable distribution of provisions and improve their economic circumstances (Easterly and Levine, 1997; Elbadawi and Sambanis, 2000; Vanhanen, 1999). Further linking economic and ethnic inequalities, Woodward (1995) argues that economic inequalities lead to the politicization of ethnic identities and, as such, ethnic conflicts are simply mirrors of underlying economic disparity between ethnic groups in the state.

Alternatively, excluded ethnic groups may be motivated to fight by sentiments challenging the legitimacy of the state and the authority of the ethnic groups in power. Tilly (1978), for instance, argues that exclusion along ethnic lines fans the flames of nationalism, since political exclusion authorizes the subordination or discrimination of select societal sub-groups under the guise of official state authority. In other words, exclusion from the state political apparatus directly challenges the legitimacy of the state in the eyes of the excluded group since, at best, the state does not represent the group’s interests and, at worst, the state actively works against the excluded group. Such ethnonationalist sentiments fuel civil war as excluded groups seek to forcibly redress these grievances.

Building from these insights, Wimmer, Cederman and Min (2009) show that larger politically excluded populations increase the state’s likelihood of experiencing civil war. Diminished state legitimacy increases the ability of ethnic elites to mobilize supporters and combatants to revolutionary movements. Historically, this process makes sense; following the withdrawal of British forces, the minority White government of Rhodesia faced massive unrest from the majority Black populace.

Cederman, Wimmer and Min (2010) similarly show that excluded ethnic groups are more likely to rebel and, additionally, that groups whose political status has
been downgraded by the political apparatus are more likely to take up violence to change their circumstances. These findings are corroborated by extant studies of self-determination and separatist conflicts around the world (Marshall and Gurr, 2003; Walter, 2006). Building further, Buhaug, Cederman and Rød (2008) and Cederman, Buhaug and Rød (2009) show that the likelihood that excluded groups rebel increases with their demographic size. That is, the exclusion of relatively large ethnic groups implies an illegitimacy of the state; regardless of political system or regime type, political exclusion of large ethnic groups challenges norms of popular representation and the proportionality of demographic power (Cederman, Buhaug and Rød, 2009; Petersen, 2002; Wimmer, 2002).

While political exclusion can be levied against any group, the link between group exclusion and civil war is particularly salient for ethnic groups. As Weidmann (2009) points out, the spatial concentration of ethnic groups facilitates the strategic coordination of coethnics. Said another way, the geographic concentration of coethnics lowers collective action problems for aggrieved ethnic groups seeking to mobilize against the state (Elbadawi and Sambanis, 2000; Ellingsen, 2000; Sambanis, 2001). Additionally, considering many ethnic groups exist far from the state political center, and in areas of rough terrain, rebellious ethnic groups also, perhaps, face a higher likelihood of success than other disenfranchised groups (Buhaug and Rød, 2006; Buhaug, Cederman and Rød, 2008; Buhaug, 2010; Wucherpfennig et al., 2011). That is, while political exclusion provides grievances and motivations for ethnic groups to fight, the situational characteristics of many ethnic groups provide increased opportunities for rebellion and feasibility of success in conflict (Collier, Hoeffler and Rohner, 2009; Fearon and Laitin, 2003).
4.3 Contextual Ethnopolitical Exclusion

Putting these findings together, the link between ethnopolitical exclusion and civil war appears rather straightforward. As a political strategy, ethnopolitical exclusion provides diverse benefits for favored coethnics at the expense of those groups excluded from the political apparatus. Such exclusion is manifest in various ways, but generally includes some combination of social marginalization, lack of political representation, and denial of public goods and services. These consequences of political exclusion affect both individuals and the excluded group as a whole, reinforcing group solidarity and collective resentment against those in power (Oberschall, 2007). Given no other avenues of redress, this collective resentment leads excluded groups into civil war with the state, either for control of the government or the ability to secede (Cederman, Wimmer and Min, 2010).

But while these mechanisms seem rather straightforward, they are not completely sufficient to explain why ethnonationalist conflict remains such a rarity among excluded groups. To be sure, that civil war remains rare, even as ethnopolitical exclusion remains widespread, implies significant nuance to this broad framework.\(^2\) Building on the existing literature, I now develop a theory in which excluded ethnic groups’ decisions to fight are shaped by their broader political and strategic neighborhoods within the state.\(^3\) I subsequently derive three hypotheses, rooted in group motivation and opportunity, to provide more nuanced accounts of why only

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\(^2\)Cederman, Buhaug and Rød (2009) also note this empirical discrepancy. I make this point not to imply that other characteristics, such as group size, group location, state capacity, etc., do not affect the decision to rebel. Rather I simply use this point to assert that the relationship between ethnopolitical exclusion and civil war is nuanced and multi-faceted.

\(^3\)Throughout this work, I use the term “neighborhood” to refer to geographic regions of the state surrounding particular ethnic groups. As such, neighborhoods in the state conceptually refer to various sub-state regions that comprise salient groupings of ethnic groups. There are several ways to empirically construct this concept, ranging from discretized to continuous measures. The research design section specifies the construction of neighborhoods for this project based on inverse-distance weighting.
some excluded ethnic groups rebel.

Grievance-based theories of ethnopolitical exclusion and civil war often rely, either explicitly or implicitly, on the assumption that such political exclusion is sufficient to motivate excluded ethnic groups to rebel. That is, the basic premise linking ethnopolitical exclusion and civil conflict is that members of excluded groups resent those in power, collectively mobilize under their broad grievances, and take up arms against the state. Cederman, Wimmer and Min (2010) and Petersen (2002), for instance, postulate that armed groups are most likely to develop in excluded societies, since feelings of resentment from political exclusion can be readily channeled into collective action and popular support for militant groups. In studying civil war duration, Wucherpfennig et al. (2012) similarly argue that fighters from excluded populations are more tolerant of the costs of conflict and committed to changing the status quo in their favor, which can be exploited by extremists and rebel groups.

Furthermore, this link implies that ethnopolitical exclusion is readily apparent and perceived as extraordinary enough to motivate members of excluded groups to take up arms and support rebellion. But ethnopolitical exclusion can mean different things and entail different consequences in different contexts. Being the only excluded ethnic group in a state is, perhaps, fundamentally different from being one of many marginalized groups. Whereas ethnopolitical exclusion in the former scenario is highly concentrated, marginalization in the latter case is more dispersed and shared by a broader portion of the populace.

Alternatively, excluded ethnic groups surrounded by neighboring groups in the same state that enjoy political inclusion and ethnic nepotism highlight the detrimental effects of such exclusion. Said another way, neighborhoods of inconsistent political exclusion within the state, in which only some ethnic groups are excluded,
make the social and political disparity between such groups most pronounced. By highlighting such disparities, neighborhoods of inconsistent political exclusion exacerbate the role of grievances and resentment in motivating excluded groups to fight for change.

Although not on the issue of political exclusion, several studies have pointed toward similar contextual effects in ethnicity and civil conflict. Several scholars, for instance, point out the changing saliency of ethnicity both across space (Miles, 1994; Miles and Rochefort, 1991; Posner, 2004) and across time (Eifert, Miguel and Posner, 2010; Rohner, Thoenig and Zilibotti, 2013). Alternatively, building on the general consensus that poorer states are more likely to experience civil war (Collier and Hoeffler, 2004; Fearon and Laitin, 2003; Hegre and Sambanis, 2006), Cederman, Weidmann and Gleditsch (2011) and Buhaug, Cederman and Gleditsch (2014) show that the relationship between economic inequality and civil conflict is parabolic: in highly unequal societies, both rich and poor groups fight more often than those with average wealth. That is, while overall levels of poverty increase the likelihood of civil war, relative levels of economic prosperity and deprivation within the state significantly explain ethnic groups’ decisions to fight.\footnote{Interestingly, recent studies of U.S. and U.K. public housing policy assert similar neighborhood effects and the consequences of perceived group disparity within geographic neighborhoods. Policy makers often argue that mixed-income neighborhoods, in which households of varying socioeconomic status live in close proximity, positively impact individuals from low-income households. Recent studies, however, point out that low-income adolescents in mixed-income neighborhoods often perform worse academically and experience greater psychosocial problems (Croson, 2009; Odgers et al., 2012, 2015). These works point out that, in neighborhoods of inconsistent wealth and status, social differences become more pronounced, and lower-income individuals suffer from readily apparent and adverse social comparisons, negatively affecting their outlook. In response to these perceived disadvantages, low-income individuals are more likely to resent their higher-income neighbors and become involved in antisocial behaviors.}

Similarly, neighborhoods of inconsistent ethnopolitical exclusion within the state highlight the disparities between ethnic groups, exacerbating feelings of resentment toward included ethnic groups. Such neighborhood effects add an
interesting nuance to the link between ethnopolitical exclusion and civil war. While the immediate motivation underlying excluded groups’ decisions to fight is their political marginalization, such group-specific motivation is, in part, shaped by groups’ broader political contexts and neighborhoods. That is, while political exclusion produces resentment against those in power, the motivation to fight is highest in neighborhoods of inconsistent exclusion in which perceptions of group disparity and feelings of resentment are maximized.

These mechanisms are clearly evident in the Troubles of Northern Ireland during the twentieth century. The most prominent feature leading to hostilities in Northern Ireland was, perhaps, the immense discrimination levied against the Catholic population, not only by neighboring Protestants, but also by British political and security services. Undoubtedly, Catholic resentment from this discrimination was exacerbated by the Catholic population’s proximity, and geographic overlap, with the Irish Protestant population, who enjoyed distinctly favorable positions of employment, housing, and political service. The Naga people likewise remained politically powerless, as compared to other ethnic groups in the state, following their incorporation with India after World War II. This powerlessness, coupled with the region’s broader ethnopolitical disadvantage compared to the main Indian territory, fueled ethnonationalist demands for independence, ultimately leading to a prolonged insurgency against the Indian government.

Additionally, excluded groups in neighborhoods of inconsistent exclusion, in which some groups are excluded are some are included, may expect subsequent support from other excluded groups in their vicinity. In choosing to take up arms against the state, excluded groups may believe that other excluded groups in their geographic neighborhoods, also resenting their politically included neighbors, will also take up arms or support rebellion. By broadening the movement against
the state and garnering outside support, the prospects for success are increased, favoring the onset of hostilities. As such, neighborhoods of inconsistent political exclusion within the state provide not only a unique political environment for ethnonationalist rebellion, but also a unique strategic environment.

Accounting for these neighborhood effects derives three insights about neighborhoods of ethnopolitical exclusion and civil war. First, when neighborhood levels of political exclusion are relatively low, the likelihood that excluded ethnic groups will fight remains low. Low levels of neighborhood political exclusion entail that isolated excluded groups can expect little neighborhood support for rebellion, limiting the prospect that rebellious movements will spread to neighboring groups.\(^5\)

Second, at relatively high levels of neighborhood political exclusion, feelings of resentment will be limited, as the immediate differences between groups are diminished. Subsequently, the motivation to forcibly challenge the status quo from ethnopolitical grievances is diminished. Most importantly, however, intermediate levels of neighborhood political exclusion, or neighborhoods of inconsistent exclusion in the state, maximize the likelihood that excluded groups will take up arms. When neighborhood levels of ethnopolitical exclusion are mixed, political resentment is maximized and the prospects of rebellion spreading to nearby excluded groups is increased.

Thus, by affecting perceived disparities and group resentment, excluded groups’ broader political neighborhoods should significantly impact their decision to rebel against the state. Since excluded ethnic groups’ motivation to fight is highest when perceived social disparities are most pronounced, excluded groups in neighborhoods of inconsistent ethnopolitical exclusion, in which only some ethnic groups

\(^5\)Alternatively, if neighboring groups are included in the political regime, rebellious excluded groups may expect significant reprisals from neighbors or support for the state. Such adverse support may limit the chances of success for excluded groups, limiting their opportunity to rebel.
are excluded, are the most likely to take up arms against the state. Similarly, neighborhoods of inconsistent political exclusion increase the chances that rebellion will spread and be supported by neighboring excluded groups. From these insights I derive my first hypothesis, which posits a curvilinear relationship between neighborhood levels of political exclusion and excluded groups’ decisions to rebel:

**Hypothesis 1.** The likelihood that an excluded ethnic group engages in civil war follows an inverted U-shape with relative levels of ethnopolitical exclusion in the group’s immediate neighborhood within the state.

### 4.4 Conflict Contagion and Neighborhoods of Opportunity

Ethnopolitical exclusion primes certain ethnic groups to resent the state and ethnic groups in power. It is groups’ broader political neighborhoods, however, that contextualize such exclusion and reinforce or exacerbate the process from exclusion to resentment to conflict. That is, in choosing to take up arms against the state, excluded ethnic groups are not only affected by their own exclusion, but also by the political contexts of their immediate neighborhoods within the state. In addition to such political contexts, excluded ethnic groups may also be motivated to fight by strategically emulating other nearby excluded groups in conflict with the state.

The extant literature of civil war contagion shows the propensity for conflicts to diffuse between states via processes of strategic emulation by nascent rebel groups, especially between structurally equivalent states around the world (Maves and Braithwaite, 2013). This conflict diffusion between states often leads to localized neighborhoods of civil conflict within the international system (Buhaug and Gleditsch, 2008). Forsberg (2008, 2014), for instance, shows that ethnic groups in polarized societies emulate ethnic conflicts in other ethnically polarized states,
and that groups with transnational kin in conflict are more likely to take up arms. These insights are paralleled by Ayres and Saideman (2000), who show that minority groups are affected both by the conflict experiences of ethnic rebels abroad and at home.

Nascent rebels may be inspired to pursue conflict against target governments after observing the success of similar groups operating in similar conditions in surrounding states. Hill, Rothchild and Cameron (1998), for example, cite the contagion of conflict among the republics of the former Yugoslavia after the relatively easy secession of Slovenia. That is, the Slovenian success inspired other marginalized groups, notably the Croatian and Serbian minorities, to pursue campaigns of secession against their governments.\(^6\) Subsequently, the likelihood of conflict contagion by strategic emulation is exacerbated when access to information about neighboring conflicts is especially high or readily available (Hill and Rothchild, 1986; Kuran, 1998).

Furthermore, drawing on the insights of Tarrow (1998) and Maves and Braithwaite (2013), observing other proximate challengers in the state can compel moderate and undecided segments of the population to join periods of struggle against the state, increasing the chances of emulation and conflict contagion. This should be especially important for excluded ethnic groups that already possess some motivation to foment rebellion against the state. That is, while ethnopolitical exclusion provides within-group motivation to move against the state, observing conflicts among neighboring excluded ethnic groups in the state signals increasingly broad dissatisfaction with the incumbent regime and underscores widespread views

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\(^6\) Such emulation or demonstration effects also feature prominently in the reputation arguments of civil war (Walter, 2006, 2009). That is, when the risk of nascent separatists emulating active rebels is high, states are less likely to bargain and more likely to fight significantly harder, leading to protracted conflicts.
of government illegitimacy, providing an outside mechanism to galvanize group members to fight (Wimmer, Cederman and Min, 2009).

Perceptions of such broadening dissatisfaction can buttress the resolve of nascent challenger movements within an excluded ethnic group. At the same time, observing additional challengers against the state, especially among those groups facing similar circumstances, can compel moderate or undecided segments of the excluded population to join periods of struggle against an increasingly illegitimate state. The Tigray people in Ethiopia, for instance, mobilized for hostilities following the violent rebellion of the ethnic Eritreans and ethnic Somalis, both neighboring ethnic groups excluded by the Marxist Derg regime. Since the diffusion of conflict by processes of emulation is partly dependent on the spread of information, observing ethnonationalist conflicts among neighboring groups exacerbates the contagion of conflict within the state. Taken together, these insights form my second hypothesis, which posits a contagion effect of civil war based on the strategic emulation of neighboring excluded ethnic groups in conflict with the state:

**Hypothesis 2.** *Excluded ethnic groups are more likely to rebel as the relative prevalence of neighborhood civil war involving other excluded ethnic groups in the state increases.*

Thus, excluded ethnic groups may not only be motivated to fight by their own ethnopolitical exclusion, but also by emulating other excluded groups in conflict. Assuming that excluded ethnic groups possess sufficient motivation to engage in civil war, questions of the opportunity or feasibility of conflict remain. That is, motivation resulting from perceptions of disadvantage and ethnopolitical grievances, or from the emulation of neighboring groups in conflict, may not be sufficient to lead excluded ethnic groups to rebel. Rather, collective mobilization against the state requires both the willingness to challenge the state and the opportunity to
successfully foment rebellion (Most and Starr, 1983; Starr, 1978). In many ways, the opportunity to rebel is contingent on the viability or feasibility of rebellion; conflict is most likely to occur under structural conditions that favor success (Collier, Hoeffler and Rohner, 2009; Fearon and Laitin, 2003). Certainly, even the most motivated ethnic groups stand little chance of success in conflict if they are particularly weak or face particularly strong states.

To that end, I contend that, in addition to providing external motivation to foment rebellion, neighborhoods of ongoing conflict within the state facilitate the strategic opportunity to rebel in two meaningful ways. First, nearby conflicts lower the logistical barriers to conflict by providing access to weapons and warfighting logistics. Salehyan and Gleditsch (2006), in studying the contagion of civil war across international borders, argue that ongoing civil wars increase flows of weapons and combatants throughout international neighborhoods. These increased logistical flows make taking up arms relatively easier and cheaper for nascent rebel groups in nearby states.

In much the same way, ongoing conflicts in excluded groups’ immediate geographic neighborhoods within the state provide increased flows of weapons and warfighting logistics. As such, for excluded ethnic groups seeking to challenge the state, nearby conflicts lower the logistical barriers to rebellion. Returning to the Tigray in Ethiopia, proximity to the ongoing conflict in Eritrea facilitated the acquisition of weapons and provided increased opportunities for coordination with nearby rebel groups (Akcinaroglu, 2012). Similarly, proximate conflicts among the “Seven Sister” states in northeast India ensure the consistent availability of weapons and supplies for groups seeking to rebel.

Aside from these logistical spillover effects, ongoing conflicts in excluded groups’ geographic neighborhoods within the state provide strategic information about
fighting the state. To be sure, conflicts are often characterized by information asymmetries (Fearon, 1995; Powell, 2002, 2006), features that are often exacerbated during civil war. Such information asymmetries produce significant uncertainty over the distribution of capabilities between belligerents in conflict. To overcome these information asymmetries, potential challengers can glean important information by observing ongoing conflicts. Similar to the relationship between conflict information and strategic emulation, excluded ethnic groups can learn more about how to fight the state from nearby conflicts, since information is more timely and exact.\footnote{An important distinction between Hypothesis 2 and Hypothesis 3 lies in the distinction between the mechanisms of strategic emulation and logistical spread. Since Hypothesis 2 relies on the emulation of other excluded ethnic groups, then excluded groups of interest should only be affected by proximate excluded groups in conflict. In contrast, since Hypothesis 3 relies on the logistical spread of conflict, then excluded groups of interest should be affected by any proximate group in conflict, politically excluded or otherwise.} Taken together, these logistical and informational effects suggest that excluded ethnic groups derive a strategic benefit from neighborhood levels of conflict in the state, leading to my final hypothesis:

**Hypothesis 3.** Excluded ethnic groups are more likely to rebel as the level of conflict involving other ethnic groups in their immediate geographic neighborhood within the state increases.

These three hypotheses suggest a series of unique political and strategic neighborhood effects leading excluded ethnic groups to civil war. Together, these mechanisms significantly affect groups’ opportunity and willingness to fight, based on the broader political and strategic contexts of their geographic neighborhoods within the state. That is, if the barrier to excluded groups taking up arms against the state is strategic or based in the feasibility of conflict, then proximity to ongoing conflicts, by lowering logistical barriers to rebellion, mitigates this concern. By increasing levels of resentment for included ethnic groups, neighborhoods of inconsistent political exclusion within the state increase levels of motivation to
fight. Alternatively, or perhaps in addition, proximity to other excluded groups in conflict provides chances for collective mobilization through strategic emulation. As such, these insights collectively imply that understanding why some excluded ethnic groups engage in civil war requires not only understanding the characteristics of that group, but also the broader contexts of ethnopolitical exclusion within the state.

4.5 Data and Research Design

In testing these three neighborhood effects on the likelihood that excluded ethnic groups engage in civil war, I utilize a series of spatial cross-regressive logit regressions. To populate the universe of ethnic groups, I utilize the GeoEPR dataset, which provides the geographic locations of all relevant ethnic groups for each country in the international system (Wucherpfennig et al., 2011). Since the analyses rely on the political and strategic context between multiple ethnic groups in the state, I subset the universe of states to those including more than one geo-located ethnic group.\(^8\) In line with theory, the analyses are conducted exclusively on ethnic groups that are excluded from the state’s political apparatus in a given year (Cederman, Wimmer and Min, 2010).\(^9\) The dependent variable is a dichotomous indicator of whether a particular excluded ethnic group begins a civil war against the state in a given year, taken from the UCDP/PRIO Armed Conflict Database and the NSA2EPR data (Gleditsch et al., 2002; Harbom and Wallensteen, 2010; Wucherpfennig et al., 2012).\(^10\)

In testing the above hypotheses, I construct three unique spatial lag measures

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\(^8\)This omits 19 countries, and 910 group-years, from the analyses. Substantive analyses including these single-group states remain unchanged.

\(^9\)However, as described in more detail below, included ethnic groups still feature in the analyses via the first and third spatial lag measures.

\(^10\)This measure uses a 25 battle-related deaths threshold to mark the onset of civil war.
that capture the effects of excluded ethnic groups’ broader political and strategic neighborhoods. Hypothesis 1 posits that excluded groups’ decisions to rebel are shaped by the relative levels of ethnopolitical exclusion among their geographic neighbors. To assess this neighborhood effect, the first spatial lag is a row-normalized spatial weights matrix, $W_1$, that specifies the relative prevalence of ethnopolitical exclusion around each excluded ethnic group. In scalar notation, this first spatial lag variable takes the form:

$$W_{ijt} = \frac{1}{\sum_j \frac{1}{d_{ijt}} \ast x_{jt}}$$

In words, the first spatial weights matrix begins as an $N \times N$ connectivity matrix, pairing each excluded ethnic group $i$ with all other ethnic groups in the same state $j$. The cells of the connectivity matrix are first populated by calculating the inverse distance between each group pair, measured in kilometers from the centroid of each group’s settlement area, such that ethnic groups closer together have higher values than groups farther apart. The inverse distances between each ethnic group pair are then normalized by the sum of the inverse distances between excluded ethnic group $i$ and all other ethnic groups in the state $j$. Each normalized inverse distance between excluded group $i$ and a group $j$ is then weighted by a dichotomous indicator, $x_{jt}$, of whether ethnic group $j$ is politically excluded in a given year.

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11For example, in a country with 10 ethnic groups, the dimensions of the connectivity matrix are $10 \times 10$. By convention, the connectivity matrix is block-diagonal, with the diagonal elements equaling zero, such that only the distances between distinct ethnic groups are measured.

12For simple coefficient scaling purposes, the geographic distances between groups are scaled by 100 before taking the inverse. In absence of specific theoretical insights about the most appropriate method of measuring the distance between groups, I also test several other functional forms of the spatial dependency, including $\frac{1}{\ln(d_{ijt})}$ and $\frac{1}{\sqrt(d_{ijt})}$ (Plümper and Neumayer, 2010). Substantive conclusions using these alternative distance decay functions remain unchanged.

13This normalization process is technically referred to as “row normalization” since each element in the connectivity matrix is normalized by the sum of all elements in that row of the matrix (Neumayer and Plümper, 2016).
Finally, the matrix is collapsed into a scalar by summing the weighted inverse distances between excluded group $i$ and all other groups $j$ for each year. Thus, the spatial lag variable captures the relative level of ethnopolitical exclusion in each excluded group’s broader geographic neighborhood.\textsuperscript{14} Since Hypothesis 1 asserts a curvilinear relationship between neighborhood ethnopolitical exclusion and civil war, I also include the squared term of the spatial lag.

By normalizing the inverse distances between ethnic groups, the spatial ethnopolitical influence of each ethnic group $j$ on an excluded group $i$ can be interpreted as the fraction of all spatial ethnopolitical influence on excluded group $i$ that is attributable to ethnic group $j$ (Neumayer and Plümper, 2012, 2016). Thus, the first spatial lag variable represents the weighted average level of ethnopolitical exclusion in each excluded group’s geographic neighborhood. The value of the spatial lag ranges from 0 to 1, with higher values indicating that most other ethnic groups in the state, or groups in close proximity to a particular ethnic group, face ethnopolitical exclusion. In contrast, low values indicate either that few other ethnic groups face ethnopolitical exclusion, or that those that are excluded are geographically distant from the excluded group in question. Said another way, the weighted average of ethnopolitical exclusion provides the average level of ethnopolitical exclusion facing other ethnic groups throughout the state, with proximate ethnic groups being more influential than distant groups.

Given that Hypothesis 1 highlights the importance of each ethnic group’s ethnopolitical exclusion relative to levels of exclusion among neighboring ethnic groups in the state, use of the weighted average spatial lag is appropriate. That is, excluded groups compare the effects of their own exclusion to that of their neighbors.

\textsuperscript{14}Conceptually, then, all groups within the state belong to the maximum boundary of an excluded group’s neighborhood. The influence that each of these groups exerts on the excluded group of interest, however, is weighted by their geographic proximity.
When there are few ethnic groups in the state, such that excluded groups have few geographic neighbors, the relative influence of each group increases. In contrast, in states with multiple ethnic groups, the spatial influence of each particular group diminishes. Since theory supposes that excluded ethnic groups compare their ethnopolitical circumstances to those of their neighbors, it is reasonable that such comparisons vary by the relative composition of each group’s neighborhood.

In testing Hypothesis 2, that excluded ethnic groups are motivated to engage in civil war by relative levels of neighborhood conflict involving other excluded ethnic groups, I employ a similar spatial lag measure. The second spatial lag uses the same scalar notation as the first spatial weights matrix. However, rather than calculating the distance between an excluded ethnic group $i$ and all other ethnic groups in the state $j$, the second spatial weights matrix, $W_2$, only measures the distance between excluded group $i$ and other excluded ethnic groups in the state $j$. The row-normalized inverse distances between excluded ethnic group pairs are then weighted by a dichotomous indicator, $x_{jt}$, of whether excluded ethnic group $j$ is involved in a civil war in a given year.

Again, by normalizing the spatial influence of each excluded group, this creates the weighted average level of conflict involving other excluded ethnic groups throughout the state. Higher values indicate that more excluded groups in the state, or particularly close excluded ethnic groups, are engaged in civil war against the state, while lower values indicate few or distant conflicts involving other excluded ethnic groups. This measure is similar to the spatial lags employed by other studies of civil war contagion (Braithwaite, 2010; Buhaug and Gleditsch, 2008; Maves and Braithwaite, 2013). Said another way, the second spatial lag captures the relative spatial prevalence of other structurally equivalent ethnic groups in conflict.

Similar to the first spatial lag, use of the weighted average level of conflict in the
state is appropriate in testing Hypothesis 2. Recall that Hypothesis 2 proposes that higher levels of conflict among neighboring excluded ethnic groups provide increased opportunities for strategic emulation and an external mechanism of motivation for excluded groups to fight. That is, observing conflict among neighboring excluded groups signifies broader dissatisfaction with the state and a broader willingness to fight back against policies of ethnopolitical exclusion, providing incentive to rebel. Perceptions of such broader dissatisfaction, in turn, are dependent on the number of possible excluded groups that could take up arms.

As such, when excluded groups have numerous excluded neighbors, the relative influence of each excluded neighbor in forming such perceptions of broader willingness to challenge the state diminishes. Subsequently, when excluded groups are surrounded by multiple excluded neighbors, greater numbers of excluded groups in conflict are required to reinforce perceptions of a broader willingness to rebel. Conversely, when there are few excluded groups in the state, the relative influence of each group in inciting a broader willingness to rebel increases. Taken together, this implies that the weighted average level of neighborhood conflict involving other excluded groups best captures the propensity of conflict to spread by spreading notions of revolution.

To test Hypothesis 3, that excluded groups are logistically and strategically affected by ongoing conflicts in their immediate neighborhoods, I employ a third spatial lag. More precisely, this spatial lag is a spatial weights matrix, $W_3$, that captures the weighted sum of the distance between an excluded group $i$ and all other ethnic groups in conflict in the same state $j$. In scalar notation, this final spatial lag variable takes the form:
\[ W_{ijt} = \sum_{j=1}^{n} \left( \frac{1}{d_{ijt}} \ast x_{jt} \right) \]

Again, this final spatial weights matrix begins as an \( N \times N \) connectivity matrix, populated by the inverse distances between an excluded ethnic group \( i \) and all other ethnic groups in the same state \( j \).\(^{15}\) Each inverse distance is then weighted by a dichotomous indicator, \( x_{jt} \), of whether each ethnic group \( j \) is in conflict in a given year. The matrix is then collapsed into a scalar by summing the weighted inverse distances, creating a spatially weighted lag of ethnic conflict occurrence.

Importantly, the final spatial lag measure does not make use of row-normalization. The spatial lag variable, then, represents the weighted sum of the distance between an excluded ethnic group \( i \) and all other groups in conflict in the state in a given year. The value of the spatial lag increases as the proximity between excluded group \( i \) and all other groups in conflict \( j \) increases, capturing the proximity and prevalence of conflict surrounding each excluded ethnic group. The theorized mechanisms of conflict contagion in Hypothesis 3 assert that excluded ethnic groups are afforded a unique opportunity to rebel from the logistical and informational spread of ongoing conflicts in their immediate geographic neighborhoods. Since such diffusion occurs over physical distance, use of the weighted sum is appropriate, since it captures the raw effect of geographic proximity to groups in conflict. Following from theory, then, the last two spatial lag measures capture the relative spatial influence of other structurally equivalent ethnic groups in conflict, as well as the raw spatial effect of excluded groups’ proximity to groups in ongoing conflicts.\(^{16}\)

\(^{15}\)Similar to the first two spatial lag variables, the distances between ethnic groups are scaled by 100 before calculating the inverse.

\(^{16}\)It is worth pointing out that these three spatial lag measures effectively test for both spatial dependence - that the occurrence of conflict is systematically affected by the location of surrounding conflicts - as well as spatial heterogeneity - the spatial clustering of the underlying causes of conflict. That is, Hypotheses 2 and 3 (and, subsequently, the second and third spatial lags)
I also include in all model specifications a series of group-level and country-level control variables. At the group level, I first include a dichotomous indicator of whether the excluded group was recently downgraded to a status of ethnopolitical exclusion (Cederman, Wimmer and Min, 2010). I also include the natural log of the excluded ethnic group’s relative population size. Larger groups that can mobilize more ethnic constituents for violence can, at least in terms of sheer manpower, challenge the state more equally (Buhaug, Cederman and Rød, 2008; Cederman, Buhaug and Rød, 2009; Cederman, Wimmer and Min, 2010; Weidmann, 2009). I also include a dichotomous indicator of whether the excluded ethnic group enjoys a degree of regional autonomy, which should have a pacifying effect and lessen the likelihood of civil war (Cederman et al., 2015). Finally, I account for the excluded ethnic group’s geographic distance to the political center of the state by measuring the distance between the group and the state’s capital city (Buhaug, Cederman and Rød, 2008; Wucherpfennig et al., 2011).

At the country level, I control for the natural log of GDP per capita and the natural log of the state population, which have been consistently shown to affect the onset of conflict, as well as the natural log of the size of the state’s excluded population (Hegre and Sambanis, 2006; Wimmer, Cederman and Min, 2009). I also control for the scope of the country covered in rough or mountainous terrain, which should favor the opportunity for rebellion (Fearon and Laitin, 2003). Finally, I include a counter of group-level peace years and include squared and cubic polynomials to account for time dependence and temporal non-monotonicity in the data (Carter and Signorino, 2010).

examine the spatial dependence of conflict, based on the relative and geographic spatiality of conflict, respectively. In contrast, Hypothesis 1 (and the first spatial lag) examines whether the spatial clustering of a root cause of conflict, significantly impacts the locations of multiple conflicts within the state. See Buhaug and Gleditsch (2008) and Neumayer and Plümper (2010) for further examples that distinguish between the spatial dependence and spatial heterogeneity of conflict.
4.6 Results and Substantive Findings

The results of the spatial regression models are detailed in Table 4.1. Recall that we are interested in three main neighborhood effects: the effect of neighborhood political exclusion, the relative prevalence of conflict involving other excluded ethnic groups, and excluded ethnic groups’ geographic proximity to groups in conflict. To that end, Models 1-3 successively test the three hypotheses derived from theory, while Model 4 details a full model utilizing all three neighborhood measures simultaneously.

Broadly, the results of the spatial regression models strongly support all neighborhood effects derived from theory. Hypothesis 1 posits an inverted U-shape relationship between relative neighborhood levels of ethnopolitical exclusion and civil war onset. Substantively, this suggests that neighborhoods of inconsistent political exclusion, in which only some geographic neighbors are excluded, increases the likelihood of civil war. Since the spatial lag of neighborhood ethnopolitical exclusion ranges from 0 to 1, both the linear and squared terms in Model 1 should be of roughly equal magnitude. In line with Hypothesis 1, the linear and squared terms should also be positive and negative, respectively.

Encouragingly, both the linear and squared terms are significant in Model 1, and the directions of the terms suggest a strong inverted and curvilinear relationship. As a visual representation of this curvilinear relationship, Figure 4.1 plots the predicted probability of ethnic civil war onset as a function of neighborhood levels of ethnopolitical exclusion, derived from Model 1. All other continuous and dichotomous variables are held at their mean and modal values, respectively. Illustrating the distribution of values found in the data, Figure 4.1 also includes a
Table 4.1. Intrastate Neighborhood Effects on the Likelihood of Excluded Ethnic Group Conflict Onset, 1946-2008

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Political Exclusion (w.a.)</td>
<td>4.845*** (1.655)</td>
<td>2.969** (1.430)</td>
<td></td>
<td></td>
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<tr>
<td>Neighborhood Political Exclusion (sq.)</td>
<td>-5.008*** (1.578)</td>
<td>-3.464*** (1.251)</td>
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<tr>
<td>Neighborhood Excl. Conflict (w.a.)</td>
<td>2.778*** (0.365)</td>
<td></td>
<td>1.446*** (0.463)</td>
<td></td>
</tr>
<tr>
<td>Neighborhood Conflict (w.s.)</td>
<td></td>
<td></td>
<td>1.369*** (0.187)</td>
<td>0.810*** (0.287)</td>
</tr>
<tr>
<td>ln(Group Size)</td>
<td>0.204 (0.823)</td>
<td>0.489 (0.766)</td>
<td>1.115 (0.685)</td>
<td>0.570 (0.765)</td>
</tr>
<tr>
<td>ln(Distance to Capital)</td>
<td>-0.078 (0.212)</td>
<td>-0.040 (0.218)</td>
<td>-0.068 (0.244)</td>
<td>-0.026 (0.240)</td>
</tr>
<tr>
<td>ln(Excluded Population)</td>
<td>1.860*** (0.404)</td>
<td>1.734*** (0.340)</td>
<td>1.822*** (0.349)</td>
<td>1.780*** (0.317)</td>
</tr>
<tr>
<td>ln(Population Size)</td>
<td>0.153 (0.212)</td>
<td>0.100 (0.126)</td>
<td>0.153 (0.121)</td>
<td>0.133 (0.113)</td>
</tr>
<tr>
<td>ln(GDP per capita)</td>
<td>0.011 (0.154)</td>
<td>-0.040 (0.114)</td>
<td>-0.023 (0.109)</td>
<td>-0.026 (0.091)</td>
</tr>
<tr>
<td>ln (Mountainous Terrain)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Peace Years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
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</tr>
<tr>
<td>Group Peace Years</td>
<td>-0.349*** (0.067)</td>
<td>-0.329*** (0.061)</td>
<td>-0.344*** (0.063)</td>
<td>-0.321*** (0.059)</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.86* (2.069)</td>
<td>-3.324* (1.480)</td>
<td>-3.593* (1.507)</td>
<td>-4.512*** (1.273)</td>
</tr>
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<td>AIC</td>
<td>1441.274</td>
<td>1361.127</td>
<td>1363.267</td>
<td>1335.070</td>
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</tr>
<tr>
<td># of Countries</td>
<td>100</td>
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<td>100</td>
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</table>

NOTE: Robust standard errors in parentheses. Models include squared and cubic polynomials of Group Peace Years (n.s.). The terms (w.a.) and (w.s.) refer to weighted average and weighted sum spatial lags, respectively. Significance Levels (two-tailed): *** p<0.01, ** p<0.05, * p<0.1

rug plot of neighborhood levels of ethnopolitical exclusion.\textsuperscript{17} As Figure 4.1 points

\textsuperscript{17}In line with the theory and research design, values of all spatial lags displayed by the rug plots are only shown for observations of excluded ethnic groups in the data.
out, the likelihood that excluded groups engage in conflict is greatest when the relative neighborhood levels of political exclusion are at intermediate levels. That is, excluded ethnic groups are most likely to rebel in neighborhoods of inconsistent ethnopolitical exclusion, as the probability of conflict more than triples from around 0.003 to as much as 0.011.

Hypothesis 2 suggests that excluded ethnic groups may also be motivated by relative levels of conflict involving other excluded groups in their geographic neighborhoods. That is, as levels of conflict involving excluded neighbors increases, excluded groups may be motivated to fight by strategically emulating ongoing
conflicts. To that end, Model 2 utilizes the weighted average level of neighborhood conflict involving excluded ethnic groups. In line with theory, the coefficient for levels of conflict is positive and significant. As the relative proximity and prevalence of conflict involving other excluded ethnic groups increases, excluded groups are more likely take up arms against the state.

**Figure 4.2. Predicted Probability of Ethnic Civil War Onset as Neighborhood Conflict Involving Excluded Groups Changes**

NOTE: Figure shows the predicted probability of conflict as relative neighborhood levels of conflict involving other excluded ethnic groups increase, derived from covariate estimates in Model 2. All other continuous covariates are held at their mean values, and all other dichotomous variables are held at their modal values. Rug plot shows the distribution of the weighted average spatial lag of ethnic conflict involving excluded ethnic groups found in the data.

To derive more meaningful substantive implications from this relationship, Figure 4.2, using the coefficient estimates from Model 2, provides the predicted probability of conflict onset over the range of the weighted average spatial lag of conflicts
involving other excluded groups. Again, all continuous and dichotomous variables are held at their mean and modal values, respectively, and the rug plot along the x-axis provides the distribution of the spatial lag in the data. As ongoing conflicts involving other excluded groups become relatively closer and more prevalent, the likelihood that an excluded ethnic group will take up arms significantly increases. In line with theory, the predicted probability of conflict increases to as much as about 0.07 when all other excluded ethnic groups in the state (a value of 1 along the x-axis) engage in hostilities. These results suggest an important relationship surrounding excluded groups’ motivations to rebel. That is, while excluded ethnic groups may possess sufficient grievances against the state and some motivation to rebel, such sentiments are supplemented by broader periods of conflicts in their geographic neighborhoods, providing increased chances of mobilization through the strategic emulation of conflict.

Building on these insights, Hypothesis 3 postulates that, in addition to acting as an external mechanism of motivation, proximate conflicts provide a unique strategic opportunity for excluded groups to rebel. As such, Model 3 utilizes the weighted sum of excluded groups’ geographic proximity to other ethnic groups in conflict. The positive and significant coefficient for neighborhood conflict in Model 3 strongly supports the notion of the spatial contagion of conflict within the state. As the proximity of ethnic groups in conflict increases, such that ethnic groups in conflict become geographically closer, excluded ethnic groups are more likely to foment rebellion. In line with theory, geographic proximity to ongoing conflicts facilitate the opportunity to rebel by lowering the logistical and informational barriers to conflict, aiding the strategic onset of hostilities.

To that end, Figure 4.3 provides the predicted probabilities of excluded ethnic group conflict over the range of values for the weighted sum spatial lag, derived
from Model 3. All other continuous and dichotomous variables are held at their mean and modal values, respectively, while the rug plot illustrates the distribution of the weighted sum spatial lag in the data. Note that the substantive impact of geographic proximity to ongoing conflicts is the largest of the three results, as the predicted probability of conflict onset increases from nearly 0 to more than 0.2. As ongoing conflicts become increasingly close, the likelihood that excluded groups take up arms dramatically increases, since the opportunity to rebel increases. Given that excluded ethnic groups inherently possess some motivation to rebel,
this significant change in the likelihood of conflict implies, perhaps, that the main barrier to conflict for many groups lies in the opportunity to rebel.

Turning to Model 4, these three neighborhood effects retain their significance when included in the same model specification. This is an important finding; even given their substantive differences, all three neighborhood effects continue to affect excluded ethnic groups independently. Said another way, excluded ethnic groups are consistently affected by both their political and strategic neighborhoods. Turning to the control variables across the four model specifications, only downgrades to ethnic groups’ ethnopolitical status consistently affects their likelihood of rebellion. That is, ethnic groups that have been recently downgraded to a state of ethnopolitical exclusion are significantly more likely to engage in civil conflict against the state.

Taken together, these results provide significant insights into the relationship between ethnopolitical exclusion and ethnic civil war. In line with theory, excluded groups in neighborhoods of inconsistent exclusion are significantly more likely to rebel. When neighborhood levels of ethnopolitical exclusion are inconsistent, the differences between included and excluded groups, and the resentment such differences foster, are highlighted, increasing groups’ motivation to fight. Such motivation is supplemented when other excluded groups take up arms against the state, as periods of neighborhood conflict signal broader dissatisfaction with the regime among the state’s excluded populace, providing an external mechanism to rally supporters to conflict. Alternatively, ongoing conflicts in excluded groups’ geographic neighborhoods provide important warfighting logistics and information, lowering the barriers to conflict and, subsequently, making civil war strategically attractive for excluded groups.
4.7 Concluding Remarks

Throughout the historical record, the relationship between ethnopolitical exclusion and civil war occurrence remains consistent. Ethnopolitical exclusion, as a political strategy, systematically marginalizes particular groups in the state to consolidate political power and favor coethnics. Such marginalization breeds resentment among members of excluded groups, sentiments that can be used by extremist and rebel groups to mobilize excluded populations for civil war.

But the historical record also shows a striking empirical inconsistency. Even as ethnopolitical exclusion remains widespread throughout the international system, civil war remains a rare occurrence, suggesting significant nuance in this broader relationship. In examining this nuance, the analyses presented here highlight the importance of accounting for the political and strategic effects of excluded groups’ broader geographic neighborhoods. Building on grievance-based theories of civil war, I have shown that excluded groups in neighborhoods of inconsistent ethnopolitical exclusion, by exacerbating feelings of resentment against included ethnic groups and the political apparatus, are more likely to take up arms against the state. I have similarly shown that relative neighborhood levels of conflict involving excluded groups, as well as excluded groups’ proximity to ongoing conflicts within the state, facilitate rebellion by providing external mechanisms of strategic motivation and opportunity.

Taken together, these neighborhood and spatial effects provide several novel insights into the question of why some excluded ethnic groups take up arms against the state and engage in civil war. Ethnopolitical exclusion is a robust indicator of ethnic groups’ motivations to fight against the state (Cederman, Wimmer and Min, 2010). The analyses presented here, however, highlight that, among excluded ethnic
groups, understanding which ethnic populations foment rebellion partly requires accounting for the broader political and strategic contexts of such exclusion. In addition, the results presented here reinforce the notion that civil war follows from the convergence of the opportunity and willingness to fight. That is, while several excluded ethnic groups may be motivated to rebel, only those with sufficient ability to pursue rebellion will engage in civil war.

Additionally, these neighborhood effects highlight the propensity of civil war to spread within the state via processes of contagion. By accounting for both the relative prevalence of conflict and geographic proximity of conflict in excluded groups’ neighborhoods within the state, I have shown that civil war can spread both by the strategic emulation of conflict and by the logistical spread of hostilities. Such intrastate contagion implies the possibility of localized “conflict traps” within the state, as periods of conflict spread to neighboring groups, intensifying the threat facing governments.

Encouragingly, these findings leave open several avenues for future research regarding the contextual relationship between ethnopolitical exclusion civil war. In addition to the neighborhood effects presented here, other contextual factors may impact the path from exclusion to conflict. For instance, the theory presented here centers on conflict between excluded ethnic groups and the state. Such contextual effects, however, may also significantly impact hostilities between ethnic groups in the state, either to redress intergroup grievances or bolster group security (Hardin, 1995; Petersen, 2002; Posen, 1993). That is, similar neighborhood effects may also significantly explain the onset of non-state conflict between ethnic groups.

Alternatively, these broader neighborhood mechanisms may be further complicated by other characteristics of ethnic groups and the state. Several studies show that ethnic linkages and shared histories significantly impact the onset of conflict
(Buhaug and Gleditsch, 2008; Cederman et al., 2013). Similarly, shared histories between groups in the state, either positive or negative, may affect the influence of excluded groups’ neighborhoods. It could be, for instance, that excluded groups are less likely to emulate other excluded groups in conflict when those groups are rivals or enemies. Alternatively, the logistical spread of conflict may provide the opportunity for excluded groups to strike against rival groups, rather than the state.

As it stands, however, the importance of these findings cannot be understated. The extant literature surrounding ethnopolitical exclusion and civil war occurrence has pointed out how the strategic use of ethnopolitical exclusion by governments, and the characteristics of excluded ethnic groups, affects the onset of civil war. The results presented here consistently show that excluded groups are clearly shaped by their broader political and strategic neighborhoods, and that the link between ethnopolitical exclusion and civil war is significantly shaped by these broader contexts. To that end, these findings assert the importance of accounting for the contextual effects of civil war, as well as the important interdependencies inherent in contemporary politics.
Chapter 5  
The Spatiality of Civil War Duration

5.1 Introduction

Since its independence in 1948, the government of Myanmar has waged an overlapping series of conflicts against ethnic and political rebels situated in the geographic peripheries of the state. These myriad rebel groups have varied widely in their ideologies and constituencies, ranging from small enclaves of students and workers seeking to overthrow the incumbent regime in favor of Communist ideologies to relatively large ethnic constituencies, such as the Karen and Shan, seeking secession or self-determination. At the same time, however, these groups remain unified by their general weakness compared to the Myanmar military apparatus. But while weak, the Myanmar military has routinely failed to definitively suppress such rebellions, leading to decades of conflict and bloodshed throughout the country.

While notable, the protracted conflicts in Myanmar are not the only puzzling anecdotes found in the historical record. To be sure, several conflict-ridden countries, including India, Ethiopia, and the Philippines, have fought prolonged conflicts against distinctly weak rebels. A central puzzle of civil war, then, concerns why some conflicts, particularly those involving weak rebel groups, last significantly
longer than others. Using conventional wisdom, if rebels are particularly weak, then governments should be able to quash rebellion outright through superior force. In solving this puzzle, the extant literature has pointed out several important mechanisms, ranging from power parity to interventions to the geographies of conflict.

But these historical anecdotes also offer, perhaps, an additional mechanism to explain this puzzle. While militarily weak, the various rebels facing the Myanmar government were blessed by the spatiality of multiple, simultaneous conflicts. That is, while the Myanmar government has often faced multiple challengers, these myriad civil wars have occurred in geographically distinct and disparate regions of the state, requiring the state military to divide its resources and attention across several fronts and over many hundreds of kilometers. As such, these conflicts highlight not only the importance of accounting for overlapping civil wars, but also the strategic effects resulting from the spatiality of such parallel conflicts. These effects, especially the latter, have received relatively little attention in the extant literature. To that end, I ask how the spatial distribution of civil wars throughout the state, as well as the characteristics of overlapping conflicts, affects the duration of individual civil wars.

In answering this question, I argue that increasing the aggregate distance between conflicts significantly affects the duration of conflict for both weak and strong rebel groups. For conflicts involving weak rebels, increasing the distance between ongoing conflicts divides state resources and attention, limiting the ability of the state to put down even weak rebellion and increasing the duration of sustained hostilities. For conflicts involving strong groups, this division of state resources increases the chances of military success or negotiation by spreading and thinning

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1 In this essay I refer interchangeably to civil wars, civil conflicts, and intrastate conflicts.
available government forces, thus lessening the duration of conflict.

Building further, I contend that this spatial effect is significantly affected by the characteristics of overlapping conflicts, including the strength of rebel groups in parallel conflicts and the interdependent durations of overlapping conflicts. Thus, by broadening the perspective to account for the spatial interdependencies of multiple civil wars, I stress that understanding the duration of individual conflicts requires understanding both the strategic role of space surrounding that conflict and the characteristics of other ongoing civil wars in the state. When governments must fight across multiple fronts, the duration of individual conflicts become partially dependent on how long other conflicts endure. Furthermore, the ability of conflicts to endure is significantly impacted by the strength of surrounding rebels.

By drawing on several distinct facets of civil war, I provide many novel insights and contribute to the broader civil war literature in several meaningful ways. Most importantly, I provide a new perspective on the puzzle of why some civil wars last significantly longer than others. Empirical results consistently show that the spatial distribution of civil wars affects the duration of conflict, and that this spatial effect is significantly impacted by the characteristics of conflict. Additionally, I contribute to the trend of broadening perspectives on civil conflict beyond the independent dyad approach by examining the important interdependencies of multiple, overlapping conflicts. I also offer new insights for the growing literature on the geography and spatiality of civil war. I show that there exist important interdependencies between ongoing civil wars, and that these interdependencies are affected not only by the existence of multiple conflicts, but also by the spatial distribution of conflict throughout the state.

I proceed as follows. In the next section I review the literature on civil war duration and discuss the implications of recent works that extend the realm of
analysis to account for complex civil war environments. I then build on these works by developing a theory of civil war duration based on the spatial distribution of parallel conflicts and the division of state military resources. From this theory I first derive the expectations that increasing the distance between conflicts serves to increase the duration of conflicts involving weak rebel groups and lessen the duration of conflicts involving strong rebels. I build on these expectations by arguing that such spatial effects are further driven by the interdependent characteristics of ongoing conflicts. Notably, the spatial effect of multiple civil wars is driven by the relative strength of rebel groups in conflict and by shared durations of multiple conflicts. Using spatial weighting and survival analyses, I test the implications of this theory on civil war durations between 1945 and 2005. I then examine the empirical robustness of including the spatiality of parallel conflicts. I conclude by examining the results of this research design and discussing some potential avenues for future research.

5.2 Approaches to Civil War Duration

While a relatively recent field of inquiry, understanding the duration of conflict remains a central facet of the broader civil war literature. Existing works have offered diverse mechanisms to explain the puzzle of conflict duration, ranging from the strength of rebel groups to the geographies of conflict, and involving both strategic and structural factors. In many ways, the structural characteristics affecting conflict duration fall under the same broad umbrellas of greed, grievance, and opportunity that affect the onset of hostilities (Collier and Hoeffler, 2004; Fearon and Laitin, 2003). Structurally, Collier, Hoeffler and Soderbom (2004) link civil war duration with levels of poverty and economic inequality. Since rebel
fighters are often drawn from the poor and marginalized of society, increasing levels of poverty expands the pool of potential rebels that can be recruited to fight the state. Poverty then, facilitates both the onset and continuation of hostilities, as members of the populace take up arms to improve their economic situation. Alternatively, low levels of state wealth signal state weakness and, perhaps, an inability of the state to suppress domestic challengers.

Similarly, Collier, Hoeffler and Soderbom (2004) contend that ethnically diverse states produce longer civil wars, particularly in states dominated by a few large ethnic groups, by facilitating ethnic recruitment to rebel causes. By their argument, states with a few large ethnic groups are typically dominated by one group, excluding others from power. This exclusion leads to particularly salient ethnic grievances against the state, which both produce and sustain violent conflict as excluded groups seek to redistribute political power. Additionally, small numbers of large ethnic groups increase ethnic cohesion, which can be relied on to quickly mobilize combatants against the state. This latter point is further argued by Wucherpfennig et al. (2012), who point out that ethnonationalist rebellions that draw from and mobilize distinct ethnic constituencies last longer than non-ethnic insurgencies.

Intricately tied to such structural characteristics are considerations of opportunities and capacities for sustained hostilities. That is, civil war continues as long as the opportunity or the capacity to fight remains. Exploitation of natural resources, for instance, provides funding for rebel groups, enabling them to acquire weapons and supplies, as well as attract additional combatants through material gains (Fearon, 2004; Lujala, 2010; Ross, 2004). Additionally, Buhaug, Gates and Lujala (2009) assert the role of geography and territory in enhancing opportunities

\footnote{Natural resources can also prolong conflict through a “conflict-for-profit” model in which the purposes of rebellion is not victory, but rather the continuation of illicit activities.}
for continued rebellion. Conflicts farther from state capitals last longer than those closer to centers of state power, since physical distance mitigates the government’s preponderance of military power. Said another way, the loss of strength gradient considers that even powerful states have trouble projecting power over long distances and, as such, physical distance from centers of power diminishes states’ abilities to defeat domestic challengers (Boulding, 1962; Buhaug, 2010). Similarly, conflicts abutting border regions tend to last longer, since rebels can potentially find shelter in neighboring states to avoid government military offensives that may otherwise quash the insurgency (Salehyan, 2007).

Each of these structural characteristics also affect the duration of civil wars through the strategies and processes of conflict. Conflict in peripheral regions or in particularly rough terrain, for instance, favors guerrilla warfare strategies and low-intensity “hit and run” confrontations (Fearon and Laitin, 2003). Such strategies of indirect confrontation are especially important for particularly weak rebel groups, who often turn to such guerrilla strategies to overcome power asymmetries, significantly prolonging hostilities (Balcells and Kalyvas, 2014; Cunningham, Gleditsch and Salehyan, 2009). Alternatively, conflicts involving strong rebel groups, or in which there is relative power parity between rebels and governments, are often comparatively short. That is, confrontations between governments and strong rebels often involve direct confrontations and conventional military strategies, which resolve conflict rather quickly through military victory.3

Beyond the closed polity model of conflict, the literature has shown external in-

3Under an information framework, private information and incentives to misrepresent can prolong conflict by limiting the range of potential bargains (Collier, Hoeffler and Soderbom, 2004; Fearon, 1995). But battlefield experience, and indeed war itself, is a process of information disclosure. That is, over time, belligerents learn more about their comparative capabilities during war, which should limit the impacts of private of information on settlement as capabilities become public information (Butcher, 2015; Gartner, 1997; Slantchev, 2003; Wagner, 2000).
volvement in civil wars to significantly affect the duration of violence. Balch-Lindsay and Enterline (2004), for instance, show that third-party interventions, whether balanced or biased, prolong hostilities. Similarly, Regan (2002), disaggregating intervention type, finds that both biased military and economic interventions lead to sustained hostilities, findings supported, in terms of economic interventions, by Escribà-Folch (2010). Cunningham (2010) argues that such prolonged conflicts are often brought about by the independent agendas of interveners; since intervening states have strategic reasons for entering into conflict, they become an important actor capable of vetoing potential settlements between belligerents. This latter insight greatly informs much of the literature on civil war outcomes, as Mason, Weingarten and Fett (1999) and Balch-Lindsay, Enterline and Joyce (2008) show that interventions decrease the likelihood of negotiated settlements.

While informative, these works have largely treated civil wars as dyadic and independent events between states and individual rebel groups. But states often become involved in multiple civil conflicts in overlapping time periods, leading to complex and interdependent conflict environments. Rather than remaining completely independent, these parallel conflicts routinely influence the broader strategic environment of the state and significantly shape the processes of individual conflicts. Noting this unique dynamic, several exceptions in the literature have, to great effect, examined such multi-party conflicts to account for these important interdependencies.\footnote{It is important to note that studies of intervention in civil war can be thought of as implicitly broadening the dyadic approach since, even while treating conflicts as independent events, interveners constitute a third group during conflict. Cunningham (2010) is a good example, since the intervener acts as a strategic actor altering the dyadic bargaining process. However, for the most part, such studies still treat conflicts between governments and multiple civil challengers as independent events.}

Most notably, Cunningham (2006), through the veto player model, shows that
multi-party conflicts, or those involving a government against several distinct rebel organizations, last significantly longer than purely dyadic conflicts. As he points out, when multiple actors are engaged in conflict, there exists a smaller bargaining range of possible negotiated settlements to satisfy all relevant groups, such that settlement is less likely. This problem is compounded as each rebel group attempts to hold out slightly longer than others to receive the best settlement, lengthening hostilities across all conflicts.

Building on these insights, Akcinaroglu (2012) argues that alliances between rebel groups significantly shape the duration and outcome of civil wars. Alliances allow individual rebel groups to extend their strength through the cumulative abilities of their allies, broadly strengthening members of the alliance. This increase in aggregate rebel strength diminishes the prospects for government victory or even negotiated settlement, while increasing the chances of rebel military victory through prolonged attrition.

These studies demonstrate that accounting for the strategic relationships inherent in multiple civil wars is important in understanding the broader forces governing the processes of each ongoing conflict. These latter works have shown that understanding the dynamics of individual conflicts lie not only in the characteristics of that conflict, but also in the other civil conflicts facing the state. But these works have largely ignored the strategic role of space in shaping and affecting such interdependencies. Building on these insights, it is important to acknowledge how the spatiality of ongoing conflicts shapes the process of hostilities.
5.3 The Spatiality of Civil War Duration

Civil war is a dynamic process. Studies of civil war duration often rely on conceptual models detailing violent interactions between an insurgent group and a target government. In civil war, the rebel group has grievances or goals which it seeks addressed through the use of violence, while governments, for their part, use violence to deny these goals. Once conflict is underway, hostilities continue until one side is defeated militarily or the two sides find a negotiated settlement. As such, the duration of conflict is intricately tied to the military and strategic concerns of civil belligerents. Importantly, such conceptual models, with some exception, routinely treat such interactions as dyadic. That is, such models assume that civil conflicts are completely independent, and that the processes and outcomes of one conflict facing the government do not affect other ongoing conflicts in the state.

One important, but under-studied, characteristic of civil wars, however, is that states often find themselves pitted against multiple rebel organizations and several distinct conflicts at the same time. The Indian government, for example, has, at times, faced several distinct ethnic insurgencies simultaneously, requiring it to fight on multiple fronts. Similarly, the Rhodesian government, following the withdrawal of British colonial forces, waged a protracted conflict against both the ZANU and ZAPU rebel groups, insurgent forces that acted almost entirely independently. These overlapping and parallel conflicts produce complex environments of hostilities which, in turn, can significantly alter the processes of individual conflicts.

Existing studies have shown the importance of accounting for the strategic relationships between parallel conflicts in understanding the dynamics of civil war (Akcinaroglu, 2012; Cunningham, 2006; Mukherjee, 2014). But such studies have

\footnote{Walter (2006, 2009) shows that such strategic interdependencies extend even to potential rebels. In examining separatist conflicts, states’ decisions of how hard to fight rebels partly depend}
yet to account for the strategic role of space in shaping such interdependencies. To be sure, while states often become involved in multiple civil wars, such overlapping conflicts occur across varying distances and geographies. For instance, while fighting between the Sudanese government and various rebel groups remained contained to the southern regions of the state, the various conflicts plaguing the Indian government stretch over hundreds of kilometers and extend to nearly all corners of the state. Broadly, such variation in the spatiality of civil war should affect the processes of conflict by altering the broader strategic environment of the state.

For states facing finite resources, fighting multiple civil wars requires significant, and zero-sum, expenditures in conflict zones. That is, any increase in attention and resources devoted by governments to fighting domestic conflicts in one area of the state must necessarily be drawn from other conflicts. In a basic sense, then, states are faced with logistical opportunity costs for fighting multiple civil conflicts; expenditures in fighting one conflict cannot be put toward another ongoing conflict.⁶ As such, states are faced not only with the dilemma of how hard to fight in one conflict, but how hard to fight relative to how such fighting strategically impacts their ability to fight in other ongoing conflicts. Put succinctly, the presence of multiple conflicts entails that the processes of any individual conflict are interdependent with the processes of surrounding conflicts.

These opportunity costs should also be exacerbated by the spatiality of multiple conflicts. To be sure, civil wars not only vary in their processes and characteristics, but also in their distribution throughout the state. Such spatial variation, and its effect on the opportunity costs facing states, is important from a logistical

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⁶This point assumes that, when faced with additional challengers, states always put forth some level of resources toward ending that additional conflict. As such, even conflicts involving particularly weak rebel groups still entail some minor reduction or division in overall state strength.
standpoint. For instance, the various conflicts in the Mindanao region required the Filipino government to divide its resources between the MNLF/MILF and Abu Sayyaf conflicts. Given the proximate nature of these conflicts, however, such divided resources were still focused in the same general geographic area, allowing warfighting resources to be readily shared or transferred between ongoing conflicts. In contrast, the Ethiopian government, facing rebel groups in the Eritrean, Tigray, and Ogaden regions, was forced to divide its military capabilities between several disparate fronts over hundreds of kilometers. The physical distances between these conflict zones limited the transferability of the state’s warfighting resources between conflicts, subsequently solidifying the division of state resources and attention.

If multiple ongoing conflicts alter the localized warfighting abilities of states in conflict, then multiple civil wars directly affect the relative power parity of governments and rebels in individual conflicts. Subsequently, such spatial effects should lead to diverging implications for conflicts involving strong and weak rebel groups, respectively. The relationship between rebel strength and conflict duration is well noted in the extant literature. Conflicts involving relatively strong rebel groups end relatively quickly, as rebels either overpower target governments militarily or leverage their strength to force negotiations on favorable terms (Buhaug, Gates and Lujala, 2009; Cunningham, Gleditsch and Salehyan, 2009). In contrast, weak rebel groups often turn to strategies of guerrilla warfare to overcome power asymmetries, employing long campaigns of “hit-and-run” warfare that avoid direct military confrontation and prolong hostilities (Balcells and Kalyvas, 2014; Cunningham, Gleditsch and Salehyan, 2009).

The division of state warfighting resources across multiple geographic fronts serves to reinforce these diverging effects. For strong rebel groups, for instance, any reduction in localized state strength reinforces the relative parity or strength of the
rebel group. Such increasing military strength can be further leveraged against the state, either militarily or through bargaining, serving to end conflicts more quickly. Similarly, the division of state resources across multiple conflicts should reinforce the benefits of guerrilla warfare for weak rebels, further prolonging conflict. Since combating guerrillas requires careful policing and long-term counterinsurgency, localized reductions in state military power limit the state’s ability to hunt down small bands of rebels, enabling them to fight longer. These insights inform my first pair of hypotheses, which consider the diverging spatial effects of multiple civil wars:

**Hypothesis 1a.** The duration of civil wars involving weak rebel groups increases as the aggregate distance between ongoing conflicts increases.

**Hypothesis 1b.** The duration of civil wars involving strong rebel groups decreases as the aggregate distance between ongoing conflicts increases.

The spatiality of multiple conflicts, then, makes the duration of civil wars interdependent by dividing the state’s finite warfighting resources and altering the relative strength of domestic belligerents. As the distance between ongoing conflicts increases, states’ limited resources become increasingly divided and non-transferable. The ability of the state to fight any single conflict, then, partially depends on also fighting other conflicts, making each individual conflict part of a broader interdependent environment.

In addition to the absolute distance between parallel civil wars, the duration of conflict should also be spatially conditional on the strength of the rebels in conflict. To be sure, the relative strength of rebel groups affects how state warfighting resources are divided between conflicts. Weak rebels, for instance, are unlikely to pose a significant threat to the regime, so the state may forego significant military investment in favor of shifting resources to conflicts involving stronger rebels. In
contrast, conflicts involving strong rebel groups pose a more dire and immediate threat to the government, necessitating a greater share of state resources to halt rebel advancement or undertake direct military confrontations.

Best illustrating this process is the prolonged conflict between the Ethiopian government and the Tigrayan People’s Liberation Front (TPLF), the military wing of the Tigray ethnic group. Initially small militarily weak, the Ethiopian government largely ignored the TPLF in favor of committing military resources to fighting ongoing conflicts against stronger rebel forces in the geographically distant Eritrean and Ogaden regions. That is, the Ethiopian government committed fewer resources to fighting the TPLF, devoting the majority of its fighting strength to suppressing stronger challengers. This strategy ultimately backfired, however, as the TPLF grew unencumbered by Ethiopian forces, eventually emerging as the main challenger to topple the Ethiopian government.

The case of the TPLF and other contemporary civil wars in Ethiopia highlight how, in an interdependent setting, varying levels of rebel strength and the spatiality of conflict jointly impact the duration of civil war by affecting how the state divides its resources over the spatial distribution of conflicts. The duration of individual civil wars, then, is affected not only by the strength of rebels in conflict, but also by the relative strength of all challengers facing the state. Given that states commit fewer resources to fighting weak rebels in the shadow of stronger rebel forces, conflicts involving weak rebels should last longer as the strength of surrounding rebel groups increases. This process should be exacerbated as the distance between ongoing conflicts increases, since increasingly distant conflicts require greater logistics to support and the resources devoted to each conflict become increasingly non-transferable.

Regarding conflicts involving strong rebels, needing to commit greater resources
to fighting relatively strong rebel groups should decrease the duration of conflict as the strength of surrounding groups increases. Again, this interdependent process should be exacerbated as the distance between ongoing conflicts increases. When facing multiple strong and geographically disparate challengers, dividing state resources may push the balance of power in favor of rebels, facilitating outright military victory and an end to hostilities. Alternatively, states expecting to be defeated militarily by multiple challengers may readily bargain with one or more groups, either to resist outright defeat or to free military resources for other conflicts. This leads to the second pair of hypotheses, which directly relate the spatial distribution of civil wars and the strength of interdependent rebel groups:

**Hypothesis 2a.** The duration of civil wars involving weak rebel groups increases as the strength of rebel groups in distance conflicts increases.

**Hypothesis 2b.** The duration of civil wars involving strong rebel groups decreases as the strength of rebel groups in distant conflicts increases.

It is important to point out, however, that such spatial effects also make parallel civil wars interdependent directly through their shared and overlapping durations. Quite simply, the division of state warfighting resources only exists as long as the state must fight on multiple geographic fronts. Said another way, state resources are significantly divided only as long as the government faces multiple, geographically distinct conflicts. In a hypothetical example, a state fighting two distinct civil wars must split its warfighting resources between two military fronts. By dividing its overall resources, the state can commit fewer resources toward either conflict, changing the relative distribution of strength between the state and rebels. If one conflict concludes, however, then the state can refocus the entirety of its resources on the remaining conflict.

Thus, through the spatiality of multiple civil wars, the duration of any individual
conflict becomes conditional on the duration of other ongoing conflicts in the state. Weak rebel groups, for instance, gain a distinct logistical benefit from the division of state resources. As such, conflicts involving weak rebel groups should last longer as other conflicts in the state endure, since such overlapping and durable conflicts prolong this logistical benefit. Similarly, multiple enduring conflicts, by prolonging the division of state resources, increases the chances that relatively strong rebels defeat the government or, alternatively, increases the likelihood that governments bargain with strong rebels, as ending such conflicts frees important resources that can be transferred to other conflicts. As such, enduring conflict durations should decrease the duration of conflicts involving strong rebels. From these insights I derive the final pair of hypotheses, which detail the spatially-interdependent durations of parallel civil wars:

Hypothesis 3a. The duration of civil wars involving weak rebel groups increases as the duration of distant conflicts increases.

Hypothesis 3b. The duration of civil wars involving strong rebel groups decreases as the duration of distant conflicts increases.

5.4 Data and Research Design

In testing this theory of spatial interdependence and civil war duration, I rely on a series of generalized spatial lag survival models of conflict duration. The conflict data utilized in analyses are taken from the UCDP/PRIO Armed Conflict Dataset and cover the period 1945-2005 (Gleditsch et al., 2002). The data provide information on 270 unique civil wars. Since the number and spatial distribution of conflicts vary over time, the data are formatted in yearly observations, providing 1,561 conflict-year observations. The main dependent variable is the duration of conflict, measured in days, with the average conflict lasting 3229 days.
Although finer-grained data on individual government-rebel group dyads exists, measuring civil war duration at the aggregate conflict level is appropriate given the proposed mechanisms of spatially-interdependent conflict durations. To be sure, civil wars sometimes involve multiple independent rebel organizations, whose individual fighting times often vary within the same overarching conflict. However, since the proposed spatial mechanisms affecting conflict duration affect the division of state resources across space, the proposed theoretical mechanisms most likely would not sufficiently account for the variation of such within-conflict durations. As such, the proposed mechanisms are best utilized in explaining the variation between distinct conflict durations.

To better describe this distinction, consider the series of conflicts facing Angola throughout the 1990s. At times, the Angolan government faced multiple insurgencies in the province of Cabinda, notably from the FLEC-FAC and FLEC-R organizations. At the same time, UNITA waged a distant campaign against the government in the north of the state. In line with theory, I capture the durations of the conflict involving UNITA and the duration of the overarching conflict involving the various FLEC groups in Cabinda.

I capture the duration of civil war using the Cox proportional hazards model. The Cox model is appropriate, since it models the effect of the covariates on the hazard rate without specifying a particular shape for the baseline hazard function. Broadly, tests of the Schoenfield residuals indicate that the proportional hazard assumption is not violated in the analyses that follow (Box-Stefensmeier and Zorn, 2001; Box-Stefensmeier and Jones, 2004).

In testing the above hypotheses, I construct three unique spatial lag measures to capture the absolute and relative influence of the spatial distribution of parallel conflicts. More precisely, the spatial lag variables are spatial weights matrices, W,
specifying the distance and characteristics of ongoing parallel conflicts around each individual civil war. In scalar notation, these spatial lag variables use the general form:

\[ W_{ijt} = \sum_{j=1}^{n} \left( \frac{d_{ijt}}{100} \times x_{jt} \right) \]

In words, each spatial weights matrix is first generated as an \( N \times N \) connectivity matrix, which pairs each civil war \( i \) with all other ongoing conflicts in the same state \( j \).\(^7\) To fill the cells of the connectivity matrix, the distance between conflicts, \( d_{ijt} \), measured in kilometers between the centroids of each conflict pair, is calculated, such that conflicts farther apart have higher values than conflicts closer together.\(^8\) Using this general structure, the three spatial lag variables are distinguished by how the distances between conflicts are weighted. That is, each distance between conflict \( i \) and another conflict \( j \) is weighted by multiplying the distance, \( d_{ijt} \), by a characteristic of conflict \( j \), \( x_{jt} \), for each year. Finally, each connectivity matrix is collapsed into a scalar by summing the weighted distances between conflict \( i \) and all other conflicts \( j \) for each year.\(^9\)

The variation between the spatial lag variables, then, lies in the choice of the weighting characteristic, \( x_{jt} \). Regarding Hypotheses 1a and 1b, the weighting characteristic takes on a value of 1 and simply measures the incidence of parallel conflicts. As such, the first spatial lag variable simply captures the raw aggregate distance between conflicts; the value of the spatial lag increases as ongoing conflicts

\(^7\)For example, in a country with 6 ongoing civil wars, the connectivity matrix is \( 6 \times 6 \). By convention, the connectivity matrix is block-diagonal, with the diagonal elements being set to zero, such that only the distances between distinct conflicts are measured.

\(^8\)For simple coefficient scaling purposes, the distances calculated are scaled by 100. Geo-located data on the centroid of each conflict are taken from the UCDP/PRIO Armed Conflict Dataset v4-2006, supplemented by the PRIO Conflict Site data (Gleditsch et al., 2002; Hallberg, 2012).

\(^9\)By convention, the spatial weights matrix is zero when there is only one conflict in the state, since the matrix only measures the distance between distinct conflicts.
become geographically farther apart. This is used to measure the absolute spatial effect of multiple conflicts throughout the state.

For Hypotheses 2a and 2b, the distances between conflicts are weighted by the strength of the strongest rebel group in each parallel conflict $j$. This measure, in effect, provides the relative spatial effect of multiple conflicts, conditional on the strength of the rebel groups in conflict throughout the state. That is, the rebel strength spatial lag increases as the strength of rebel organizations in ongoing conflicts increases and as the distance between ongoing conflicts increases.

Finally, regarding Hypotheses 3a and 3b, the distances between conflicts are multiplied by the duration of each ongoing conflict $j$. This creates a spatial lag measure of overlapping conflict durations and captures the theorized spatially-interdependent nature of parallel civil war durations. As such, the value of this spatial lag measure increases as the physical distance between ongoing conflicts increases and as the durations of parallel conflicts increases. To account for the theorized diverging effects for conflicts involving strong and weak rebels, respectively, I interact each spatial lag with a dichotomous indicator of whether the strongest rebel group in each conflict was significantly weaker than the government (Cunningham, Gleditsch and Salehyan, 2009).

Broadly, the spatial lag variables represent the weighted sum of the distances between conflict $i$ and all other conflicts in the state in a given year. That is, the value of spatial lag variables partly increases as the physical distance between conflict $i$ and all other conflicts $j$ increases, capturing the physical spread of conflict surrounding each civil war. Given that the theorized importance of the spatial distribution of multiple conflicts concerns the division of state resources over physical distance, use of the weighted sum is appropriate since it captures the raw effect of geographic distance.
I also include in all model specifications a series of conflict-level and country-level control variables. At the conflict level, I first control for the distance of the conflict zone to the state political capital and whether the conflict abuts an international border. Increasing distance to capitals requires state militaries to overcome greater logistical hurdles in projecting power, while proximity to international borders perhaps provides rebels with transnational sanctuaries and bases (Salehyan, 2007). I also control for whether the civil war is fought over territory, rather than control of the government. To account for the role of natural resource exploitation on conflict duration, I control for whether gemstones or drugs are produced in the conflict zone (Lujala, 2010). Finally, I control for the level of rough or mountainous terrain in the conflict zone, which should prolong conflict by favoring guerrilla warfare.

As a proxy for state strength, I control for the natural log of GDP per capita. I also control for whether the government is a democracy and control for ethnic heterogeneity via the ethnic fractionalization index (Fearon, 2003). In addition to the level of mountainous terrain in specific conflict zones, I also control for the level of rough terrain over the entire state. Considering the theory points to the relative transferability of state resources over physical distance, controlling for both conflict and state mountainous terrain better captures the role of geography both within and between ongoing conflicts.

5.5 Results and Substantive Findings

The results of the Cox semi-parametric survival models are detailed in Table 5.1. In all models, the results are presented as proportional hazard estimates. Specifically, positive coefficient values indicate that a covariate increases the hazard rate, thus reducing the duration of civil war. Conversely, a negative coefficient indicates that
the covariate prolongs conflict by lowering the hazard of conflict termination.

To reiterate, we are interested in three main effects: the absolute effect of the spatial distribution of ongoing conflicts, the relative effect of spatially-interdependent rebel fighting strengths, and the relative effect of spatially-interdependent conflict durations. Furthermore, based on theory, we should expect these effects to be diverging for conflicts involving strong and weak rebel groups, respectively. Specifically, the proportional hazards of all three spatial lags should be negative for conflicts involving weak rebel groups and, conversely, positive for conflicts dominated by strong rebel groups.

For simple comparison, Model 1 provides a standard model of rebel strength and conflict spatiality without the influence of any interaction effects.\textsuperscript{10} Model 2 details the baseline model of civil war spatiality on conflict duration for all ongoing conflicts. Model 3 builds on this baseline by weighting the spatial distribution of ongoing civil wars by the strength of the rebel groups involved. Model 4 provides the final relative weighting of the spatial distribution, based on the shared durations of ongoing conflicts throughout the state.\textsuperscript{11}

Before turning to specific results, it is important to discuss the interaction effects in the models presented. Recall that the three interaction effects combine the relevant spatial lags with the dichotomous indicator of rebel group strength. Since one of the constitutive terms is dichotomous, the interaction effect, then, displays the effect of the spatial lags specifically for conflicts involving weak rebel

\begin{flushleft}
\textsuperscript{10}For presentation purposes, I do not include similar non-interactive versions of Model 3 or Model 4. The substantive conclusions drawn from such models, however, largely conform to the insights of Model 1, which are detailed below.
\end{flushleft}

\begin{flushleft}
\textsuperscript{11}While statistically significant, the size of the coefficients regarding the spatially interdependent conflict durations appears incredibly close to zero. This is not necessarily surprising, however. Recalling that conflict durations are measured in days, the coefficient simply tracks the effect of a one day change in shared conflict durations, which, in isolation, provide a small marginal effect relative to the length of the entire conflict.
\end{flushleft}
Table 5.1. Event History Analysis of Spatially Interdependent Civil War Durations, 1946-2005

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
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<tbody>
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<td>Weak Rebels</td>
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<td>-0.090</td>
<td>-0.104</td>
<td>-0.092</td>
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<tr>
<td></td>
<td>(0.166)</td>
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<td>(0.181)</td>
<td>(0.177)</td>
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<tr>
<td>Conflict Occurrence</td>
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<td></td>
</tr>
<tr>
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<tr>
<td></td>
<td>(0.007)</td>
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<td></td>
</tr>
<tr>
<td>Weak Rebels x Conflict Spatial Lag</td>
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<tr>
<td>Rebel Strength</td>
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<tr>
<td>Spatial Lag (w.s.)</td>
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<td>0.125***</td>
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<td></td>
<td>(0.044)</td>
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<tr>
<td>Weak Rebels x Rebel Strength Spatial Lag</td>
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<td></td>
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<td>Conflict Duration</td>
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</tr>
<tr>
<td>Weak Rebels x Conflict Duration Spatial Lag</td>
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<td>ln(Distance to Capital)</td>
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<td>-0.160***</td>
<td>-0.166***</td>
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<td>(0.061)</td>
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</tr>
<tr>
<td>Conflict at Border</td>
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<td>-0.691***</td>
<td>-0.691***</td>
<td>-0.694***</td>
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<tr>
<td></td>
<td>(0.165)</td>
<td>(0.166)</td>
<td>(0.167)</td>
<td>(0.165)</td>
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<tr>
<td>Gem Production (Conf. Zone)</td>
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<td>-0.162</td>
<td>-0.150</td>
<td>-0.169</td>
</tr>
<tr>
<td></td>
<td>(0.191)</td>
<td>(0.200)</td>
<td>(0.204)</td>
<td>(0.203)</td>
</tr>
<tr>
<td>Drug Cultivation (Conf. Zone)</td>
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<td>-0.094</td>
<td>-0.102</td>
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</tr>
<tr>
<td></td>
<td>(0.224)</td>
<td>(0.224)</td>
<td>(0.228)</td>
<td></td>
</tr>
<tr>
<td>Mountainous Terrain (Conf. Zone)</td>
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<td>0.006*</td>
<td>0.006*</td>
<td>0.006*</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td>(0.003)</td>
<td>(0.003)</td>
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<tr>
<td>Territorial Conflict</td>
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<tr>
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<td>(0.188)</td>
<td>(0.187)</td>
<td>(0.190)</td>
<td>(0.190)</td>
</tr>
<tr>
<td>Mountainous Terrain (Country)</td>
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<td>-0.200***</td>
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<td>(0.078)</td>
<td>(0.077)</td>
<td>(0.078)</td>
<td>(0.077)</td>
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<td>Ethnic Heterogeneity</td>
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<td>-0.206</td>
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<tr>
<td></td>
<td>(0.287)</td>
<td>(0.293)</td>
<td>(0.289)</td>
<td>(0.289)</td>
</tr>
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<td>ln(GDP per capita)</td>
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<td>0.033</td>
<td>0.034</td>
<td>0.033</td>
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<tr>
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<td>(0.068)</td>
<td>(0.068)</td>
<td>(0.067)</td>
<td>(0.068)</td>
</tr>
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<td>Democracy</td>
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<td>-0.301</td>
<td>-0.318*</td>
<td>-0.336*</td>
</tr>
<tr>
<td></td>
<td>(0.202)</td>
<td>(0.190)</td>
<td>(0.184)</td>
<td>(0.182)</td>
</tr>
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<td>Observations</td>
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<td>1,468</td>
<td>1,468</td>
<td>1,468</td>
</tr>
<tr>
<td># of Conflicts</td>
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<td>245</td>
<td>245</td>
<td>245</td>
</tr>
<tr>
<td># of Failures</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
</tr>
</tbody>
</table>

NOTE: Cox Proportional Hazard Estimates with Robust Standard Errors in Parentheses. Significance Levels (two-tailed): *** p<0.01, ** p<0.05, * p<0.1
groups. Conversely, the constitutive terms for each spatial lag provide the spatial effect specifically for conflicts involving rebel groups either at parity or stronger than the state. Since both constitutive terms contain “true” and meaningful zero values, we can interpret the results of the constitutive terms directly (Braumoeller, 2004).

Broadly, the results of the Cox proportional hazard models strongly support all aspects of the theory of spatially-interdependent civil war durations. First, consider the raw effect of increasing the spatial distribution of conflicts throughout the state, such that the distance between ongoing conflicts increases. Regarding Hypothesis 1a, the negative and significant interaction coefficient in Model 2 implies that, for conflicts involving weak rebel groups, increasing the aggregate distance between ongoing conflicts prolongs hostilities. Alternatively, the coefficient for the constitutive spatial lag coefficient is positive and significant in Model 2, suggesting that increasing the aggregate distance between conflicts shortens the length of civil war for conflicts involving strong rebel groups.

These diverging effects are further notable considering their difference from Model 1. Note that the coefficient for rebel strength is negative and significant in Model 1, but that the coefficient for the spatiality of conflict is not statistically significant. This lack of statistical significance in the spatial lag suggests that the effects of conflict spatiality partly depend on accounting for rebel groups’ strength. That is, without accounting for differences in rebel strength and, subsequently, the differing effects that such strength has on the spatial processes of conflict, we risk conflating the spatial processes of conflict for weak and strong rebel groups.\footnote{In addition, likelihood ratio tests further support the interactive approach of Models 2-4. Compared to Model 1, the interactive approach of Model 2 significantly improves model fit (p<0.10). Similarly, compared to their non-interactive counterparts, Model 3 and Model 4 each significantly improve model fit (p<0.05).}
NOTE: Plots show Kaplan-Meier Survival Curves. The solid black line refers to the estimated survival time at mean values of all covariates. The dashed gray line refers to the estimated survival time following a one standard deviation increase in the spatial lag.

To better understand these diverging effects, Figure 5.1 plots the effect of civil war spatiality on the hazard of conflict termination for both weak and strong rebel groups. The left panel displays two Kaplan-Meier survival curves for conflicts involving weak rebel groups, while the right panel shows the survival curves for conflicts involving strong rebel groups. In terms of changing the hazard ratios of conflict termination, increasing the spatial lag of conflict occurrence by one standard deviation lowers the hazard of conflict termination by 54% when conflicts involve weak rebel groups. Conversely, increasing the spatial lag by one standard deviation increases the hazard of conflict termination by 59% when conflicts are led by strong rebels.
This absolute spatial effect is an important finding in its own right. These results initially point out that the processes of individual civil wars are indeed affected by the broader conflict environment of the state. In line with theory, increasing the geographic spread of conflict throughout the state provides distinct benefits for both strong and weak rebel groups. For strong rebels, the division of state resources across multiple fronts increases the opportunity for conflict to end, either through rebel victory or favorable negotiation. Conflicts involving weak rebels, in contrast, are granted a distinct strategic benefit as government resources are spread increasingly thin, allowing weak rebel movements to survive and fight longer.

Interestingly, and adding further salience to this theory of spatially-interdependent conflicts, the coefficient for weak rebel groups is negative, but not statistically significant, across all models. However, since the rebel strength dummy is part of an interaction effect, its constitutive term now provides the effect of rebel group strength on conflict duration either when multiple conflicts exist in the exact same geographic space or, more likely, there are no other ongoing conflicts in the state.\(^\text{13}\)

That is, the constitutive term for weak rebel groups provides the effect of rebel strength when the spatial lag variables are zero. But when the spatial lag variables are set at their mean values, such that there are multiple conflicts spread throughout the state, the weak rebel dummy becomes statistically significant; conflicts involving weak rebel groups face a hazard rate 24% lower than strong rebel groups.

This implies two important insights into the effect of rebel strength on conflict duration. First, that the constitutive coefficients of rebel strength are not statisti-

\(^{13}\)Recall that, by construction, the spatial lag variables are zero when there is only one ongoing conflict in the state, since the connectivity matrices only measure the distance between distinct conflicts. Alternatively, it is possible for the connectivity matrices to produce a value of zero even when there are multiple conflicts. Theoretically, this would occur only if multiple conflicts inhabited the exact same geographic space, such that they appear stacked on a map.
cally significant suggest that, when conflicts are isolated or extremely clustered, rebel strength means little to the continuation of hostilities. That is, if governments are indeed limited by the need to fight on multiple fronts, then such spatial concerns matter little if multiple conflicts overlap geographically, such that governments are not faced with the spatial division of warfighting resources. Conversely, as conflicts become farther apart, the ability of the state to effectively suppress conflict diminishes. Second, the importance of rebel strength on the duration of conflict, as it relates to the spatiality of civil war, implies that rebel strength matters only in as much as it relates to the broader spatiality and interdependencies of parallel conflicts.

**Figure 5.2. Survival Estimates as Spatial Rebel Strength Increases**

NOTE: Plots show Kaplan-Meier Survival Curves. The solid black line refers to the estimated survival time at mean values of all covariates. The dashed gray line refers to the estimated survival time following a one standard deviation increase in the spatial lag.
Following these insights, the empirical results support the shared effect of spatially-interdependent rebel strength on the duration of civil war. Based on theory, we should expect the duration of individual civil wars to be tied to the spatially-interdependent strength of other rebels fighting in the state. Thus, turning to Hypothesis 2a, the interaction coefficient in Model 3 is negative and significant, supporting the notion that conflicts involving weak rebel groups last longer when occurring in the shadow of more intense conflicts. This is supported visually in Figure 5.2; increasing the rebel strength spatial lag by one standard deviation lowers the hazard of conflict termination by 49% when conflicts involve weak rebels, leading to protracted conflicts. Conversely, considering Hypothesis 2b, the constitutive rebel strength spatial lag is positive and significant in Model 3, supporting the notion that multiple strong challengers in the state end conflict comparatively quickly. Increasing the rebel strength spatial lag by one standard deviation increases the hazard of conflict termination 39% when rebels are strong, ending those conflicts sooner.

The results thus far suggest that the duration of civil war is significantly affected not only by the spatial distribution of ongoing conflicts, but also by the interdependent strengths of rebels in those conflicts. Said another way, the duration of conflict is affected not only by the absolute spatiality of conflict, but also by the relative spatiality of conflict conditional on the strength of belligerents involved. But if both of these factors affect the duration of individual civil wars, then the duration of parallel conflicts should be spatially interdependent as well.

This leads to the final set of hypotheses. In line with theory, the coefficients for the conflict duration spatial lags are significantly positive and negative for strong and weak rebel groups in Model 4, respectively. These effects support the notion of spatially-interdependent conflict durations in Hypotheses 3a and 3b. Importantly,
these interdependent conflict durations have the largest substantive impact on individual civil war durations, as shown in Figure 5.3. When rebels are weak, increasing the spatially-weighted duration of parallel conflicts reduces the hazard of termination by 47%, while, for conflicts led by strong rebels, increasing the spatial lag essentially makes conflict increasingly short, increasing the hazard of conflict termination by 28%. Essentially, conflicts involving weak rebel groups are able to last longer as other groups in the state prolong conflict, while strong rebels take advantage of such durable rebellions to end conflict quickly.

In addition to these main effects, the results of the control variables generally conform to expectations. Conflicts far from the state political center and abutting
an international border last significantly longer. Additionally, increasing the levels of rough and mountainous terrain throughout the state prolongs conflict. Furthermore, conflict in democratic states last significantly longer, perhaps as a result of democracies lacking the political will to end conflicts through overwhelming force. However, when accounting for the spatial interdependencies of multiple civil wars, natural resource exploitation and conflicts over territory, such as separatist conflicts, do not significantly affect the duration of civil war. This is interesting, given that previous studies have shown that both factors contribute to prolonged conflict (Buhaug, Gates and Lujala, 2009; Fearon, 2004; Lujala, 2010). However, many territorial conflicts and conflicts in areas of natural resource abundance often occur in states facing multiple insurgencies. Thus, it may be the case that these significant effects are overshadowed by the interdependencies of multiple conflicts.

Taken together, these results provide several novel insights for the study of civil war duration. First, consider the puzzle of why conflicts involving weak rebel groups often become protracted. The prevailing argument surrounding this puzzle has been that weak rebel groups rely on strategies of guerrilla and indirect warfare, which prolong conflict by avoiding direct military confrontation. The results presented here suggest that such strategies are enhanced by the strategic spatiality of multiple, geographically-disparate conflicts. That is, when governments must divide their warfighting resources over several fronts, their ability to suppress guerrilla bands diminishes. Conversely, these same spatial effects also explain the
The importance of these findings cannot be understated. The duration of civil war is not only affected by the characteristics of individual conflicts, but also by the interdependencies and strategic spatiality of multiple ongoing conflicts. Civil wars farther apart divide and limit the state’s ability to fight by forcing it to confront challengers on multiple fronts. This raw spatial effect is exacerbated as rebels increase in strength and as each conflict endures. Seemingly enough, then, the duration of civil war is a self-reinforcing process; in an interdependent setting, failure to defeat one rebel group affects the state’s ability to defeat additional groups, considerably explaining the durability of multiple insurgencies around the world.

5.6 Accounting for Possible Non-Spatial Effects

The theory presented suggests that the interdependencies between ongoing conflicts affects the duration of civil war via the spatiality of multiple conflicts. That is, the theory presented suggests that, in addition to the characteristics of ongoing conflicts, the spatial distribution of parallel conflicts is a necessary component in understanding the duration of civil war. As such, the research design relies on a series of spatial lag measures of conflict occurrence, rebel strength, and overlapping conflict duration. These spatial lag measures are constructed by calculating the aggregate physical distance between ongoing conflicts in the state.

However, it could be the case that, rather than the spatiality of multiple conflicts,
it is the simple occurrence of multiple conflicts that affects civil war duration. That is, the main empirical results may be relics of variation in the number of ongoing conflicts, rather than their spatial variation throughout the state. For instance, Cunningham (2006), using a bargaining framework, shows that additional more rebel groups prolong conflict by limiting acceptable bargains, regardless of their spatial distribution. We can, however, check the assumption that the spatiality of conflict is an important factor by reconfiguring and re-examining the spatial lag variables. Specifically, we can change the functional form of the general spatial weights matrix, $W$, to the scalar notation:

$$W_{ijt} = \sum_{j=1}^{n}(1 \times x_{jt})$$

In words, the general spatial weights matrix still begins as an $N \times N$ connectivity matrix. However, rather than filling the cells of the matrix with the physical distance between ongoing conflicts, the cells are now populated with a placeholder confirming the overlapping occurrence of conflict $j$ in the same year as conflict $i$ (i.e. a value of 1). Using this general foundation, each overlapping occurrence is then weighted by the characteristics of conflict, $x_{jt}$, used in the main analyses. Finally, each connectivity matrix is collapsed into a scalar by summing the weighted overlapping occurrences between conflict $i$ and all other conflicts $j$ for each year.

In this way, each variable now provides the non-spatial interdependence for each characteristic $x_{jt}$. For conflict occurrence, then, the non-spatial lag provides the simple count of ongoing conflicts in the state in a given year. For interdependent rebel strength, the non-spatial lag simply provides the aggregate additive strength of rebel groups in conflict. Finally, the non-spatial lag for conflict duration provides the aggregate duration of ongoing conflicts in the state. If these variables signif-
icantly effect the duration of civil war, then the spatial dimension of the theory is unnecessary. Conversely, if these non-spatial constructions are not statistically significant, then the spatial effect is necessary to alter conflict durations.

Utilizing these new non-spatial covariates, Table 5.2 recreates the Cox proportional hazards models used in Table 3.1 using the non-spatial construction of each relevant conflict characteristic. Again, the main explanatory effects now demonstrate the non-spatial effects of multiple insurgencies on civil war duration. Broadly, note that the non-spatial effects are not statistically significant for any of the models. This seemingly implies that the spatial distribution of conflicts is an important, and perhaps necessary, component of the broader interdependencies of multiple civil wars as they relate to conflict duration.

This finding is not necessarily surprising. In line with theory, the duration of conflict is significantly affected by the logistical limitations and resource divisions facing targeted governments. Such limitations are salient only when civil wars are spatially disparate; when conflicts are clustered, then such resource divisions are distinctly minimized. This theoretically, and empirically, entails that the spatiality of parallel civil wars is a key component of the varying durations of multiple conflicts. That is, while states may face multiple civil wars, it is the spatiality of multiple conflicts that alters the processes and, subsequently, the duration, of individual civil conflicts.

5.7 Conclusion and Future Research

States often find themselves embroiled in multiple civil wars. While overlapping temporally, these parallel conflicts often occur in distinct regions of the state, leading to conflict on multiple military fronts and varying spatial distributions of
Table 5.2. Event History Analysis of Non-Spatial Interdependent Civil War Durations, 1946-2005

<table>
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<tr>
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<th>(5)</th>
<th>(6)</th>
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<tbody>
<tr>
<td>Weak Rebels</td>
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<td>-0.157</td>
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<td></td>
<td>(0.380)</td>
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<td>Aggregate Conflict Durations</td>
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<td>(0.000)</td>
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<td>Weak Rebels x</td>
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<td>-0.154**</td>
<td>-0.159***</td>
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<tr>
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<td>-0.675***</td>
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<td>-0.686***</td>
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NOTE: Cox Proportional Hazard Estimates with Robust Standard Errors in Parentheses. Significance Levels (two-tailed): *** p<0.01, ** p<0.05, * p<0.1
violence throughout the state. Given this broadened and complex conflict environment, strategic interdependencies develop between ongoing civil wars, altering the processes and outcomes of individual conflicts.

I have shown that these spatial interdependencies directly affect the duration of individual civil wars. To be sure, civil wars last as long as domestic belligerents can continue to fight, making the relative strength of rebels and governments a key feature of conflict duration. Building on this insight, I have shown, through the strategic division of state warfighting resources, that the spatiality of multiple civil wars alters these power dynamics, thus altering conflict durations. By spreading state resources across multiple, geographically-distinct conflicts, strong rebel groups can leverage their strength, either to militarily defeat governments or force negotiations, lessening the duration of conflict. Conversely, this same division of warfighting logistics limits the ability of states to suppress even weak rebellion, benefitting weak rebel groups that rely on guerrilla warfare.

In addition to this absolute spatial effect, the theory presented accounts for the relative spatiality of multiple civil wars, based on the strength and longevity of rebel groups. As parallel rebel groups increase in strength, strong rebels are better able to leverage their military capacity against increasingly-divided governments. Complementary to this notion, conflicts involving weak rebel groups fighting in the shadow of stronger rebels can fight longer, since target governments turn their attentions and resources to more pressing conflicts.

Perhaps most importantly, empirical results demonstrate that these spatial effects lead to spatially-interdependent conflict durations. Rather than being entirely independent, the duration of an individual conflict is partially dependent on the longevity of surrounding conflicts. By dividing state resources, weak rebel movements are able to last significantly longer as governments possess compara-
tively fewer resources to suppress them. Taken together, such multiple enduring conflicts reinforce the process of logistical division, further prolonging conflict and, perhaps, creating ongoing conflict traps for the state. Similarly, governments facing geographically-distinct and enduring conflicts are less well-equipped to combat relatively strong rebel movements, further opening opportunities for such conflicts to end.

From a policy perspective, these results provide myriad insights for states facing violent civil wars. However, this leaves open the question of how states strategically respond to the division of finite resources across multiple conflicts. How states respond to these logistical and strategic considerations, then, is a central question moving forward. To be sure, states may utilize varying approaches in dealing with multiple insurgencies on multiple fronts. Some states, as witnessed during the Ethiopian conflicts, may devote the bulk of their resources to fighting certain rebel movements at the expense of others, such as the TPLF. Alternatively, states may seek to quickly negotiate with certain rebel groups in hopes of focusing their attention on a fewer number of conflicts. As this question is of particular policy relevance, future research should consider the role of the state in strategically responding to the spatial interdependencies outlined here. Ultimately, however, such considerations are likely to follow from the specifics of particular conflicts and the willingness or ability of the state to fight or negotiate.

Additionally, the results presented here leave room for considerable work in other strategic interdependencies that may arise from multiple conflicts against the same government. For instance, do spatially-distinct conflicts suffer from lower severity than clustered or proximate conflicts, since states are less able to produce violence? Similarly, how does the spatial distribution of conflict throughout the state affect strategies of civilian targeting, either by governments or rebels? It
could be, for instance, that, when facing considerable resource division, states turn to civilian targeting to reinforce their bargaining positions. Alternatively, clustered conflicts may see an increase in violence against civilians as rebels vie for singular control of populations and support.

Overall, the results presented here add to the burgeoning perspective of civil wars as pieces in a broader strategic puzzle. Existing works have shown the importance of accounting for both multiple actors and the strategic relationships between those actors in accounting for the duration of civil war. These results suggest an added spatial layer to these strategic connections, a layer that should continued to be examined in future endeavors.
Chapter 6
Conclusion

6.1 Chapter Review

Civil war is a rare occurrence in the international system. States in ongoing conflicts, however, often risk succumbing to multiple, overlapping civil wars. In addition to plunging the state deeper into hostilities, the introduction to this dissertation highlighted the devastating consequences of such parallel conflicts, ranging from their persistence and durability to their massive death tolls. To account for these parallel conflicts, and to better understand civil wars more broadly, the preceding essays have broadly examined the strategic causes and consequences of parallel civil wars. Through novel theories and original measures, these essays have provided important insights for parallel conflict onset, the occurrence of ethnic rebellion, the spatial foundations of civil war, and the puzzle of civil war duration.

In the first essay, “From Bad to Worse: The Onset of Multiple Civil Wars,” I first demonstrated that the underlying structural correlates of initial and parallel civil wars systematically differ. These broad analyses are important, not only because they challenge the convention that all civil war onsets are empirically homogeneous, but also because they provide significant nuance to structural arguments of civil war. For instance, while economic grievances largely explain the onset of initial civil wars,
natural resources exclusively influence the onset of parallel civil wars, challenging conventional arguments that structural characteristics of the state similarly affect the occurrence of all types of civil wars. Also important are those characteristics that robustly affect both initial and parallel civil wars. Ethnopolitical exclusion and the risk of conflict contagion from neighboring states, providing the motivation and opportunity for groups to rebel, respectively, strongly affect the onset of both types of civil war. These overlapping characteristics further reveal a robust relationship between issues of ethnopolitics, civil war contagion, and conflict onset.

Given that the mechanisms of initial and parallel civil wars are significantly different, I also asserted in the first essay that parallel civil wars are exclusively and significantly impacted by the characteristics of ongoing conflicts. By dividing states’ resources and attention across areas of ongoing hostilities, ongoing conflicts provide a unique structural opportunity for additional groups in the state to rebel. As such, increasing numbers of ongoing conflicts, particularly severe conflicts and conflicts in remote regions of the state, increase states’ risk of succumbing to additional conflicts.

Having shown the significant relationship between ongoing conflicts and the onset of parallel civil wars at the state level, the second essay, “The Intrastate Contagion of Ethnic Civil War,” directly examined how conflict spreads among ethnic groups within the state. Applying the conflict mechanisms from the first essay and extant mechanisms of conflict contagion between states, I argued that conflict spreads within states by providing unique logistical and strategic opportunities for ethnic groups to take up arms. Utilizing the first empirical measure of intrastate conflict contagion, these arguments were robustly supported through spatial analyses, asserting that conflict occurrence within states follows a distinct process of diffusion among ethnic groups. While ongoing conflicts divide the state’s military resources,
thus limiting their ability to put down additional rebellion, proximate conflicts offer nearby ethnic groups an increased opportunity to take up arms by providing distinct logistical and informational benefits.

The intrastate contagion of civil war provides novel insights into the spatial foundations of civil conflict. Furthering this argument, the third essay, “Ready, Willing, and Able: The Spatial Contexts of Ethnopolitical Conflict,” considered how the spatial contexts of ethnopolitics and mechanisms of intrastate contagion combine in leading particular ethnic groups toward rebellion. While marginalized or ethnopolitically excluded groups are often the most likely to rebel, I asserted that which excluded groups take up arms is partly dependent on their neighborhood levels of ethnopolitical exclusion. Specifically, if excluded ethnic groups exist in neighborhoods of inconsistent exclusion, in which only some neighboring groups are excluded from the political apparatus, then grievances, and subsequent motivations to fight, are maximized. In addition, I argued that variations in the mechanisms of conflict contagion from the previous essay similarly increase opportunities for excluded groups, who already possess some motivation to fight, to actively foment rebellion.

These three essays highlight several novel mechanisms, at both the state and group levels, by which conflict propagates within states, leading to parallel civil wars. Turning to the consequences of such parallel conflicts, the fourth essay, “The Strategic Spatiality of Civil War Duration,” examined how the spatial distribution of multiple conflicts affects the duration of individual civil wars. Here I argued that the division of state’s finite military resources across multiple fronts, in addition to facilitating additional hostilities, helps prolong or shorten ongoing civil wars. As the distance between ongoing conflicts increases, states’ resources are spread increasingly thin, allowing some rebels to fight significantly longer and opening
opportunities for others to end conflicts quickly. As such, the spatial distribution of conflicts in the state makes the processes of individual conflicts, specifically conflict durations, strategically interdependent.

6.2 Extensions and Future Directions

The essays of this dissertation have provided novel insights into the causes and consequences of parallel civil wars. More broadly, these insights have yielded important nuance about the characteristics of conflict and significantly expanded our understanding of civil war in the international system. In doing so, these essays have also offered significant insights into the spatiality of civil war, the foundations of ethnic conflict, and the duration of civil conflict.

This dissertation project, however, is also the springboard for several possible avenues of future research into the overlapping issues of parallel civil wars and the spatial causes and consequences of conflict. The second and third essays, for instance, considered the intrastate contagion of civil war among ethnic groups in the state. Each of these essays rely on a “closed polity” model in which ethnic groups are only affected by other groups within the same state. Realistically, however, ethnic groups are likely influenced by groups both within the same state and in neighboring states. An expanded version of these analyses, in turn, could model the contagion of conflict among all ethnic groups in the international system, regardless of their country of origin. Such an expanded model of conflict contagion that simultaneously accounts for both inter- and intrastate contagion may provide more nuanced insights into the spatial foundations of conflict not completely captured by either this dissertation or by the extant literature.

Building further, this avenue of future research provides the opportunity to
parse and examine the possible mechanisms of conflict contagion. Both the extant literature and the essays of this dissertation suggest several mechanisms of conflict contagion, ranging from logistical spread to emulation to strategic opportunism. It is perhaps possible to separate and compare these mechanisms by accounting for the relative influence of ethnic groups within and outside of the state. Succinctly, if logistical spread is the driving mechanism behind conflict contagion, then relative proximity to any group in conflict, regardless of their country of origin, should matter most. If ethnic groups gain a distinct advantage from the strategic division of states’ military resources, however, then the contagion of conflict should be especially powerful between groups in the same state.

Alternatively, the mechanisms of inter- and intrastate conflict contagion may be mutually reinforcing. While the first essay revealed that neighborhoods of conflict in the international community robustly influence both initial and parallel civil war onsets, the second and third essays provided similar mechanisms within the state. Taken together, these findings perhaps imply a hierarchical relationship between conflict within the international community and within the state. That is, while states in the international community are increasingly susceptible to conflict contagion between states, this structural risk further exacerbates the potential for conflict to spread within the state.

There also remains considerable room for future work in the strategic interdependencies of parallel civil wars. The fourth essay examined how the spatial distribution of parallel civil wars in the state, in conjunction with the characteristics of ongoing conflicts, affects the duration of individual conflicts. Building on these insights, a natural question is how the spatial distribution of parallel civil wars affects the outcomes of these conflicts. Strategically, states facing multiple challengers may bargain more quickly with either weak or strong opponents in an
effort to reallocate resources toward remaining conflicts. Alternatively, parallel conflicts might significantly explain how rebel forces, which are typically much weaker than target governments, sometimes win outright military victories against governments.

A similar set of interdependencies might affect the severity of parallel civil wars, as well as strategies of civilian targeting during periods of conflict. For instance, states in parallel conflicts, having had their military resources spread across multiple fronts, might resort to indiscriminate targeting to make up for relative losses in military strength. As such, parallel civil wars, especially those that increasingly spread the state’s resources throughout the state, may significantly increase levels of violence against civilians during civil war. Alternatively, if parallel civil wars are clustered in space, then governments might perceive areas of overlapping conflict, and their local populations, as particularly problematic. Such perceptions might lead governments to utilize indiscriminate violence or state repression to quell localized pockets of rebellion.

The theories and analyses presented in this dissertation have significantly informed the broader literature on civil war. Moving forward, the true benefit of this project will likely lie in its place as the foundation for several new research agendas, providing myriad insights for the major arguments of civil conflict and significantly expanding our understanding of civil war.

6.3 Implications and Concluding Remarks

Along with these avenues of future research come several important policy implications for states and governments in the international system. The third essay, for instance, highlights and further supports the role of political marginalization and
political inequality in fostering ethnopolitical civil war. Extending these insights further, such political inequality can be exacerbated by transnational migration and refugee populations, especially if those migrant populations become disaffected in their host countries. Along those lines, the Paris terror attacks of fall 2015, partly developed among the disaffected Muslim population of Belgium, highlight similar processes linking marginalized migrant communities with terrorist or militant campaigns. Broadly, increased migrant populations in states bordering conflicts, if marginalized by host governments, could turn to violent conflict in the future, spread political violence in the process. With specific regard to the refugee crisis facing the countries of Europe, the arguments of this dissertation clearly argue for inclusive and conciliatory policies so as to avoid long-term resentment among migrant populations and, subsequently, avoid possible political violence in the future.

More broadly, the insights of this dissertation project, like many other studies, highlight the need to deter an initial civil war. Once a civil war occurs, however, states must shift from a strategy of deterrence to a strategy of triage and developing strategies for keeping the most at-risk groups within the state from engaging in additional conflict via processes of contagion. Danneman and Ritter (2014), for instance, highlight how states near ongoing conflicts may increase repression to deter the spread of conflict. Adopting a more conciliatory approach, states may alternatively offer increased political powers, such as territorial autonomy or power sharing, to groups near ongoing conflicts in an effort to passify nascent rebels (Cederman et al., 2015). That is, states in ongoing conflicts could adopt a two-pronged approach to contagion civil war; fighting strongly against active rebels while conceding political or economic gains to at-groups, thereby avoiding the spread of conflict and the division of military capabilities that can prolong
Put simply, this dissertation has demonstrated the importance of not only accounting for multiple civil wars, but also of accounting for the spatiality and strategic interdependencies of such parallel conflicts. Given the significant humanitarian and political costs associated with civil wars, understanding the processes and characteristics of parallel civil wars provides not only intellectual, but also practical policy importance. The challenge for states, then, lies not only in determining how to prevent civil war, but also in determining how to manage complex environments of overlapping conflicts and how to prevent such conflicts from spreading. To be sure, only by understanding the causes and consequences of multiple civil wars can such parallel perils be prevented.
Bibliography


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## Employment

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