Conflict Environments and Civil War Onset

Lindsay Reid
Gettysburg College
lreid@gettysburg.edu

Rachel Myrick
Stanford University
rmmyrick@stanford.edu

Kelly M. Kadera
University of Iowa
kelly-kadera@uiowa.edu

Mark J.C. Crescenzi
University of North Carolina
crescenzi@unc.edu [1]

November 8, 2019

[1]Replication files and the appendix for research reported in this article can be found at http://dx.doi.org/10.7910/DVN/NDZV42

Abstract

The spread of civil war poses serious risks and costs. We argue that *conflict environments*, which vary across time and space, systematically exacerbate the spread of civil war. As conflict in a state's neighborhood becomes more spatially proximate *and* as lingering effects of conflict accumulate over time, that state's risk of civil war onset increases. To theorize and test this argument, we construct the Conflict Environment (CE) score, a concept that taps into spatial and temporal dimensions of violence in a state's neighborhood. Using the CE score in established empirical models of civil war onset, we demonstrate that a dangerous conflict environment consistently elevates the risk of civil war, outperforming traditional measures of nearby violence, even when domestic factors are taken into account.

Introduction

Does political violence in nearby states catalyze the onset of civil war at home? Cases like the 2012 insurgency in Northern Mali suggest that international factors do indeed play a role, but existing statistical models of civil war contagion[1] provide mixed evidence (Buhaug and Gleditsch 2008; Forsberg 2014*a*). We argue that these weak empirical results stem from limitations of focusing on particular mechanisms and singular sources of contagion. As a remedy, we propose a broader approach that considers a states entire *conflict environment*. This conflict environment incorporates several distinct features: recent violence in a states neighborhood; the cumulated effects of multiple instances of neighborhood violence that linger over time; and the states own domestic history of conflict, which sensitizes it to neighborhood phenomena. A closer look at Mali's recent history illustrates the usefulness of this conflict environment approach.

In a 2012 U.N. Security Council briefing, U.S. Ambassador Rosemary DiCarlo anticipated risks associated with Mali's proximity to Libya's civil war, remarking, "[T]he Libyan crisis has brought a new set of cross-border challenges relating to security...that pose a threat to the stability of the region" (DiCarlo January 26, 2012). Following the overthrow of Muammar al-Gaddafi, Northern Mali experienced an influx of thousands of migrants and "unquantifiable" numbers of arms from Libya (Ban 2012, p. 2), sparking concern that transnational flows "could further destabilize already fragile areas of the Sahel and surrounding regions" (DiCarlo January 26, 2012). At the same time, Mali experienced an influx of Islamist rebels from Algeria, including al-Qaida in the Islamic Maghreb (AQIM) and the Movement for Oneness and Jihad (MUJAO) (Chelin 2018; Themner and Wallensteen 2013). The arrival of arms,

[1]Consistent with existing literature, we refer to *contagion* and *diffusion* interchangeably. We define contagion/diffusion as "a process whereby internal conflict in [other] location[s] alters the probability of another internal conflict erupting in another location at [other] point[s] in time" (adapted from Forsberg 2014*b*, p. 144, modifications italicized).

refugees, and combatants from recent conflicts in Libya and Algeria clearly contributed to the resumption of conflict in Mali in 2012, consistent with commonly cited contagion mechanisms.

However, Mali's security environment was also shaped by a broader set of civil conflicts in Northern and Western Africa that began in the early 2000s. Mali's neighborhood included past episodes of conflict in Cote d'Ivoire (2002-2007, 2010-2011), decades-long conflict in the Casamance region of Senegal, and intermittently recurring conflicts in Niger, Nigeria, and Guinea. Some of these conflicts – notably the insurgent attacks conducted by the Niger Movement for Justice (MNJ) in northern Niger – helped trigger a previous Tuareg rebellion against the central government in Bamako in 2007 (Rabasa et al. 2011). Furthermore, despite the fact that many conflicts in Mali's neighborhood began many years prior to 2012, their lingering externalities – including the destruction of infrastructure, the outflow of capital, and flows of arms and refugees – exacerbated preexisting grievances among Mali's Tuareg population. Tuareg rebel group Ansar al-Dine joined with separatist MNLA (National Movement for the Liberation of Azawad) in launching a coup, and then joined the Algerian rebels to take over Northern Mali (Themner and Wallensteen 2013).

Two more nuanced features of Mali's environment feature in its contagion story but are not captured by traditional investigations of the spread of civil war. First, Mali's exposure to multiple conflicts in the months and years leading up to the 2012 conflict produced an accumulated susceptibility to renewed instability and violence. Second, Mali's own history of violence played an interactive role. Years of internal upheaval, marked by Tuareg marginalization and socioeconomic hardship, bids for independence, and episodes of violence, lingered in Malian memories and institutional practices, legitimizing and fueling political violence in 2012 (Themner and Wallensteen 2013).

Why do contemporary analyses miss the fullness of Mali's 2012 civil war and others like it? Two characteristics of extant research present limitations. First, many of the large-N, cross-national analyses of neighborhood conflict and civil war onset look only at the role of

recent and proximate (if not contiguous) civil wars. These studies yield limited evidence of contagion. One foundational study finds: "Geography in its simplest sense is...unable to shed additional light on the origins of conflict clustering and where conflict is more likely to occur" (Buhaug and Gleditsch 2008, p. 227-28). In assessing the risks imposed by geographic proximity to external conflict, Buhaug and Gleditsch (2008) find that aggregated measures of neighborhood conflict have no clear or consistent impact on civil war onset. But as the Mali case demonstrates, more complex diffusion processes occur across both space and *time*. Our approach thus devotes more attention to how the effects of violent conflict in a region persist well beyond a one or two year temporal lag.

Second, scholars have begun to set aside generic arguments about exposure to proximate conflict in favor of exploring particular mechanisms – like cross-border ethnic ties (Buhaug and Gleditsch 2008), refugee flows (Salehyan and Gleditsch 2006), rebel mobilization (Linebarger 2015), transnational ethnic ties (Forsberg 2014*b*; Konaev and Brathwaite 2017), and informational linkages (Weidmann 2015) – that facilitate the spread of conflict. This approach has generated invaluable insights about why conflicts diffuse. However, many of these studies examine only specialized types of civil wars or fall back on geographic proximity as a proxy measure for their mechanism of interest, so we are still left with inconsistent evidence that civil war diffuses writ large.

To complement the literature's *mechanism* approach, our conflict environment theory and empirical analysis takes an *ecological* approach. The two complement each other because they address different, but related, and equally important research questions. Mechanism approaches generally ask: "Why did conflict spread from State A to State B?" or "Does Mechanism X spread conflict?" Ecological approaches ask: "Under what conditions will a state be at heightened risk for conflict contagion?" or "When does conflict in the surrounding neighborhood exacerbate internal challenges to peace?" By providing an ecological perspective that focuses on states' conflict environments, we add to the collective understanding of the onset and spread of civil wars.

We conceptualize a state's *conflict environment* based on two premises. First, recent and historical violence in a state's neighborhood affects its own propensity for internal conflict. Second, a state's domestic history of conflict makes actors within it more or less sensitive to outbreaks of conflict in its neighborhood. In brief, past actions both abroad and at home matter, and the insecurities created by proximate violence linger in the collective memories of groups within states. Based on these assumptions, we generate a corresponding empirical measure, the Conflict Environment (CE) score, which incorporates information about neighborhood conflict and a state's own history of civil conflict. We use the CE score to examine how a state's conflict environment shapes its propensity for civil war onset. We find robust evidence that dangerous conflict environments increase the risk of civil war onset. Moreover, we demonstrate that the CE score is a significant improvement over other, purely spatial measures of neighborhood conflict. Before turning to our theoretical development of the conflict environment and the empirical analysis of civil war onsets, we more fully discuss the extant literature, focusing on a comparison between and complementarities of the mechanism and ecological approaches.

External Determinants of Civil War Onset

Recognizing that domestic political events, such as intrastate conflict, do not occur in isolation from broader geographic contexts, scholars advocate "study[ing] conflict, cooperation, and democratization through regional interactions" that push beyond domestic-level accounts (Gleditsch 2002, p. 10). Research on regional, or neighborhood, sources of civil war draws heavily on lessons from the interstate war literature, which conceptualizes conflict contagion as primarily a function of geographic proximity. Alcock (1972) and Houweling and Siccama (1985) view war as a disease that infects neighborhoods, and Bremer (1982) argues that war triggers regional aftershocks because of shared proximity to hostile environments. Most and Starr (1980) suggest that warring states expose their neighbors to conflict, a finding supported by Siverson and Starr (1990). Using a formal model, Kadera (1998) identifies

regional geopolitical factors that compel states to join or initiate interstate wars in reaction to geographically proximate conflicts.

With respect to civil war, large-N evaluations of spatial diffusion yield mixed results, at best. Although Hegre and co-authors (2001) conclude that neighboring civil war is insufficient for conflict outbreak, Hegre and Sambanis (2006) and Buhaug and Gleditsch (2008) show that war-prone neighbors correlate with civil war onset. Dixon's (2009) meta-analysis of onset studies finds all possible relationships between neighboring civil war and conflict onset: not statistically significant, positive, and negative. While scholars have demonstrated evidence for particular mechanisms by which conflict diffuses, aggregate measures of neighboring conflict perform poorly in standard models of civil war onset (Forsberg 2014*a*). For example, Buhaug and Gleditsch (2008) conclude: "neither the distance to the nearest conflict, the weighted density of conflict in the neighborhood...nor the severity of the neighboring conflict explains the trajectory of contagion" (p. 230). Researchers are thus divided as to whether spatial clustering of civil conflict convincingly evidences diffusion (Salehyan and Gleditsch 2006; Buhaug and Gleditsch 2008; Braithwaite 2010*a*; Forsberg 2014*b*) or simply reflects regionally grouped states with similar domestic attributes (Hegre et al. 2001; Elbadawi and Sambanis 2002; Gleditsch 2002; Fearon and Laitin 2003; Collier and Hoeffler 2004; Gates et al. 2006; Bosker and de Ree 2014).

In what follows, we detail existing research on civil war contagion. We identify two different approaches scholars have taken to resolve this problem. The first approach, which we call a *mechanism* approach, concentrates on developing more precise logics and, ideally, measures of concrete "transmission mechanisms" (Kadera 1998). We advocate for an alternative, but complementary, method: an *ecological* approach. The review of existing work illuminates empirical and theoretical challenges and suggests how an ecological approach can augment our understanding of conflict contagion and clustering.

Understanding Conflict Diffusion: A Mechanism Approach

Seeking concrete evidence of contagion, scholars have sought to identify and measure specific channels through which civil war spreads. Forsberg (2014*a*) distinguishes between direct and indirect diffusion mechanisms. Direct diffusion mechanisms require the movement – often physical – of negative externalities from neighboring civil wars. In contrast, indirect diffusion mechanisms, such as learning and emulation, rely less on immediate proximity and physical externalities.

Direct diffusion mechanisms have received much more attention because, in principle, they are considerably easier to document or to proxy with geographic proximity.[2] Evidence demonstrates that spillover effects of violence impact neighbors' economic growth (Murdoch and Sandler 2002) and military spending (Phillips 2015). Other externalities of conflict, such as the flow of small arms across borders (Bara 2018), generate opportunities for violence in recipient states. An additional set of direct mechanisms focuses specifically on the movement of people – such as refugees and combatants – during or after major conflicts. Under certain conditions, individuals displaced by political violence may generate economic or political instability (Buhaug and Gleditsch 2008; Krcmaric 2014; Salehyan 2007, 2008). While gathering evidence on direct mechanisms intuitively seems manageable, researchers still face substantial challenges related to operationalization and measurement. For example, lacking a direct measure of the transborder flow of "conflict specific capital" (i.e., weapons), Bara (2018) uses geographic proximity to a civil conflict; however, proximity does not uniquely identify arms movements as the operative mechanism.

Indirect diffusion mechanisms, such as learning and emulation, have proven much more difficult to pin down. In one form of learning, *demonstration effects*, tactical successes or ideologies (Kuran 1998) incentivize or "inspire" (Hill and Rothchild 1986) groups in other

[2]Collecting data on direct diffusion via small arms, combatants, refugees, and other material externalities of conflict also poses major challenges, but non-material mechanisms exacerbate measurement difficulties.

states to adopt similar patterns of behavior. In another form of learning, the issues leading an ethnic group to rebel in a nearby state become more salient for ethnic kin in the focal state (Forsberg 2014*b*). Despite the intuitive appeal of these arguments, Linebarger (2015) starkly assesses that, on the whole, there is "almost no evidence in favor of global or informational mechanisms, such as those provided by emulation and learning" (p. 585). Similarly, Forsberg (2013; 2014*b*) finds no evidence that successes – territorial concessions or military victories – of one group have "domino effects" on other or related ethnic groups.

We suspect that indirect mechanisms have weak empirical backing because scholars have oversimplified the temporal dimension of diffusion. Existing models of civil war onset focus on contagion happening in only one or two years' time. In reality, however, indirect effects may persist across longer time periods and geographic distances. Linebarger (2015) observes that learning effects may give rise to new conflicts years or even decades later. The Cuban and Iranian revolutions, for instance, influenced regional movements that would become civil wars after more than a decade. Some studies account for longer time periods by assuming states proximate to a civil war are at risk of contagion for up to five years afterward (Forsberg 2014*b*; Konaev and Brathwaite 2017) or by lagging variables related to previous civil wars for up to five years (Carmignani and Kler 2017). Incorporating longer lingering effects could yield stronger empirical evidence of contagion, an idea we return to later.

Finally, one of the most robust and thoroughly explored mechanisms associated with diffusion – transnational ethnic ties – bridges the categories of direct and indirect diffusion. Discussions of the causal chain between ethnicity and contagion often meld the two. Early work on potential identity-based precursors to civil war by Saideman and Ayres (2000) and Ayres and Saideman (2000) shows correlations between the existence of a separatist ethnic kin group elsewhere and the propensity for separatist inclinations at home. Similarly, Sambanis (2001) notes a positive correlation between neighboring ethnic war and new ethnic war onsets. Buhaug and Gleditsch (2008) conclude that transnational ethnic ties is one of the most important mechanisms explaining conflict diffusion. Subsequent literature unpacks

this relationship by examining the conditions under which it holds (Cederman, Girardin and Gleditsch 2009; Cederman et al. 2013; Forsberg 2014*b*; Konaev and Brathwaite 2017). For example, Konaev and Brathwaite (2017) demonstrate that ties to ethnic groups involved in proximate civil wars exacerbate government repression and subsequent ethnic conflict at home. Notably, studies of transnational ethnic ties offer explanations of certain types of civil violence, such as ethnic civil wars (Ayres and Saideman 2000; Cederman, Girardin and Gleditsch 2009; Cederman et al. 2013; Forsberg 2014*b*; Saideman and Ayres 2000), or wars over control of the government (Buhaug and Gleditsch 2008). Broader patterns of civil war contagion also merit investigation.

The preceding review of the mechanism approach highlights some core insights. First, direct diffusion mechanisms (e.g., refugee flows and movement of combatants) and other channels for which we can collect concrete data (e.g., transborder ethnic groups) have received more attention than indirect diffusion mechanisms. Second, when indirect diffusion mechanisms are studied, relatively weak empirical evidence supports their existence. Third, the strongest evidence for particular mechanisms demonstrates their contagious effects for only some kinds of conflict. While the mechanism approach demonstrates how various factors might elevate states' likelihood of civil war onset, large-N investigations offer less consistent evidence of diffusion than one would anticipate. We believe this is because diffusion processes are inherently multifaceted, and proxies for individual diffusion mechanisms only weakly correlate with civil conflict onset. In short, while research on specific mechanisms appeals to our desires for precise explanation, the reality is that civil war onset is multi-causal. Concluding their investigations of particular contagion mechanisms of interest to them, scholars often emphasize that other mechanisms operate as well(Forsberg 2014*b*; Krcmaric 2014; Salehyan and Gleditsch 2006). By embracing this complexity, we develop an alternative approach to conceptualizing the diffusion of conflict.

Understanding Conflict Diffusion: An Ecological Approach

While mechanism-based explanations of civil war contagion seek to determine the likelihood that civil war spreads from Country X to Country Y, our ecological approach attempts to understand Y's aggregate risk of civil war onset given its net exposure to a variety of mechanisms, including those that linger and build over time. In contrast to mechanism-focused approaches, ecological approaches to neighborhood conflict are less common, perhaps because scholars face theoretical and related measurement challenges.

The first challenge is that, while conflict scholars have made great progress in the analysis of geographic space (Gleditsch and Ward 2001; Gleditsch 2007; Buhaug and Gleditsch 2008; Weidmann, Kuse and Gleditsch 2010; Danneman and Ritter 2014), theoretical and empirical treatments of time are much less rich. Referencing existing literature on civil war diffusion, Bara (2018) notes, for example, that "the question of *when* conflicts spread has not been the focus of this research at all" (p. 3). Our remedy begins with the observation that the temporal clustering of conflicts suggests that legacies of violence shape environments.

Recent events are important, but so too are past actions that linger and accumulate over time. Civil war externalities, ranging from economic shocks that cause future instabilities (Murdoch and Sandler 2002) to refugee flows that disrupt a preexisting ethnic balance of power (Krcmaric 2014), generate long causal chains that may go undetected by standard lag terms. In this vein, Forsberg (2014*a*) advocates for relaxing standard temporal restrictions in order to capture the totality of contagion's effects, stating: "the temporal dimension of diffusion presents a challenge for future theoretical development and associated statistical models. ...[A] standard time-lag of any kind would miss several of the cases which regional experts would consider to be diffusion" (p. 195). For instance, massive refugee flows from neighboring Ghana following a 1981 military coup contributed to political instability in Togo, which the Togolese Movement for Democracy (MTD) capitalized on in armed rebellion against the Togolese government in 1986 (*Togo: 1960-Present* 2018). The successful struggle for independence in Bangladesh in 1971 contributed to the formation of the Tamil New Tigers

in 1972, a predecessor of the Liberation Tigers of Tamil Eelam (LTTE), whose activities escalated to an insurgency in Sri Lanka in 1984 (DeVotta 2009). Similarly, Cuba's armed movement M-26-7 (1953-1958) ideologically inspired later movements led by the Army of National Liberation in Colombia (1964) and Bolivia (1967), and the Revolutionary Left Movement in Peru (1965) (Wright 2001).

A second challenge stems from the fact that mechanisms researchers have identified dozens of potential causal pathways – ranging from concrete (e.g., small arms flows) to abstract (e.g., demonstration effects) – to explain why civil war diffuses. While specifying pathways appeals to our preferences for compact explanations, many potential pathways exist at once, which makes distinguishing the effects of one causal story from another difficult. Analyses of any single mechanism, such as refugee movements or emulation, rarely explain civil war onset more broadly. As Black (2013) suggests, "[S]ubstate conflict contagion is an extraordinarily complex phenomenon. No such conflict has ever been caused by a single factor. Insisting that a State A conflict be the sole cause of a State B conflict, or even that State A conflict be a necessary condition for State B conflict" (p. 754) would lead to an inaccurate characterization of how conflicts diffuse across state borders. In short, we seek to address this challenge by identifying underlying processes that represent commonalities across all mechanisms.

Of course, scholars face trade-offs when selecting research strategies. Focusing on specific diffusion mechanisms helps identify specific risk factors, but comes at the expense of conceptualizing susceptibility to broader contagion processes. Examining individual mechanisms may also risk missing the impact of multiple, simultaneously operating mechanisms. For example, the considerable work on transnational ethnic ties and conflict diffusion affords political scientists a much better understanding of when and how ethnic ties influence conflict contagion, but requires scholars to shift the dependent variable of interest to a more narrow subset of civil wars — civil wars fought along ethnic cleavages — and thus narrow the universe of relevant cases.

As our goal is to build a tool that helps scholars assess a state's overall risk of civil war, we use an ecological lens to complement the existing mechanism-focused research. This approach parallels the nuanced job of a forest ranger who considers several different factors when evaluating the risk of wild fires. Some factors represent specific and localized mechanisms such as downed power lines, discarded cigarettes, smoldering campfires, or lightning strikes. Others, however, are less locally specific, such as wind speeds and direction, air temperature, humidity, and dry ground cover. Some are even less localized, such as regional drought, nearby fires which may spread, or the accumulated effects of previous fires and historical environmental conditions. These multiple dimensions of information are not only important in a proximate sense, but also matter for capturing the lingering effects of decadal (or even epochal) variations in weather and climate. Together, all of these factors combine to give the ranger a comprehensive sense of impending danger.

Turning back to the task at hand, an ecological approach to conflict diffusion offers an essential complement to the mechanism-driven investigations of contagion. Just as a forest ranger worries about both the proximate and the accumulated risk of fires, civil war researchers must account for both specific mechanisms and aggregate processes of diffusion. In the following section, we build our theoretical argument and introduce an empirical measure that captures how multiple civil conflicts across space and time combine to form a state's conflict environment and put it at risk of experiencing civil war. Because our conflict environment concept and measure is both broadly encompassing but also well-specified, we adopt Cederman and Vogt's (2017, p. 17) recommendation that civil war contagion studies "steer a middle course between over-generalized macromodels and myopic microinvestigations."

The Conflict Environment

Our ecological theory and subsequent analyses of civil war diffusion augment existing *spatial* treatments of a state's neighborhood and then develops and incorporates *temporal* components. The resulting conflict environment concept and measure structures information

about how regional patterns of peace and conflict condition domestic political outcomes. To construct the conflict environment's temporal component, we theorize the role of collective memories of past violence, including both a state's own unique conflict history and the conflict history of its neighbors. Below, we demonstrate how scholarship on these shared, social understandings of the past offer generalizable lessons that form the foundation of conflict environments. Then we detail key theoretical assumptions, including those concerning memory and time, that underpin the aggregate effects of conflict environments.

Memory: Theorizing Time and Space

Collective memories of the past form within particular social groups or nation-states. To understand how memories of political violence, in particular, work, we turn to an ecological view of psychological trauma and trauma recovery (Harvey 2007). In her foundational analysis, Harvey (1996) writes:

> "[V]ulnerability to victimization and individually varied response and recovery patterns are multi-determined by interactions among three sets of mutually influential factors: those describing the person/s involved and their relationship/s to one another, those describing the events experienced; and those describing the larger environment. Together these factors define the person-community 'ecosystem' within which an individual experiences, copes with and makes meaning of potentially traumatizing events" (p.6).

The ecological model of psychological trauma teaches us that we cannot fully understand the effects of past civil war on recidivism without modeling the interaction between the qualities of the state, its own experiences with past violence, and the context of the state's surrounding environment. Just as individual victims of personal violence can be triggered by the observation of new violence nearby, societies containing victims and participants of civil war may revisit past traumas when new violence occurs in surrounding areas. Costalli

and Ruggeri (2015, p. 125) argue that emotion triggers civil conflict, defining emotion as "the residues of experience, the marks left on individuals following positive or negative shocks." Similarly, Mosse (1979, 1991) details the role of memorialization of the fallen as a mechanism for processing, celebrating, and perpetuating war. In the context of civil war onset, an ecological view of the conflict environment emphasizes the interplay between long-run processes (e.g., psychological trauma, memorialization of past civil conflicts) and more proximate events (e.g., new conflict onsets in a state's neighborhood) both internal and external to the state.

A wealth of literature in sociology, psychology, and history also shows how temporal dynamics and collective memory of previous conflicts play a role in the recurrence of conflict. Hegre, Nygård and Ræder (2017) argue that societal impacts of conflict are important to understanding the persistence of "conflict traps," or tendencies of internal armed conflict to recur in similar geographic areas. As the authors summarize, "Wartime transformation of social actors, structures, norms, and practices have long-lasting effects on society that fundamentally alter the likelihood that violence becomes entrenched" (Hegre, Nygård and Ræder 2017, 244-45). Wood's (2008) analysis of the social processes of civil wars provides insights into the logic of conflict recurrence. For example, existing social networks that have been mobilized historically to fight for or against the state can be mobilized again, and both state and non-state armed groups that were previously socialized into their respective ranks may be quicker to return to violence. Importantly, we expect that legacies of violence are relevant for all actors within a state, whether they be state-based or non-state groups. Past violence and collective memories of that violence inform the behaviors that groups adopt even years down the road. Newly-formed and long-enduring groups alike will update their strategies based upon the past experiences of violence within and around their state.

Political scientists have, in limited work, incorporated some of these insights about time into models of conflict diffusion. For example, Kadera (1998) formally conceptualizes the spread of conflict as a time-based process. Linebarger (2015) models the emergence of

militant groups and suggests that learning effects occur over long periods of time. Bara (2018) investigates legacies of conflicts and finds that diffusion of neighboring conflict often does not take place until after such conflicts end. Taken together, these studies suggest that the effects of a state's conflict environment do not simply switch off after a specified period of time. Instead, they may linger for years and have significant consequences, albeit declining ones, over geographic space.

Examining an empirical case provides more concrete support for these intuitions. Consider, for example, Moldova's civil war from 1991 to 1992. The conflict was initiated by ethnic Russians living in the Dniestr region located on the Moldova-Ukraine border. As Moldova progressed toward independence from the Soviet Union, ethnic Russians increasingly feared they would be marginalized by new policies enacted by the Moldovan government (Crowther 1998). A violent rebellion in neighboring Romania exacerbated their concerns. The overthrow of Nicolae Ceausescu's communist regime led ethnic Russians to believe that unification between Romania and Moldova was inevitable (Kaufman and Bowers 1998). The intimate links between the Romanian conflict in 1989 and Moldova's civil war would likely be underestimated by analyses of direct diffusion mechanisms (e.g., the movement of weapons, combatants, and refugees), which would be unable to capture the broader importance of regional and domestic histories of conflict and their legacies of trauma. For example, ethnic Russians and Moldovans had a longstanding history of tension prior to the war. Kaufman (1996) writes:

> "[E]ach group had a history of domination by the other. Moldovans had been ruled by Russians for a century and a half, in 1812-1918, 1940-1941, and 1944-1991. The Russophones, for their part, remembered that in World War II, Romania, then influenced if not dominated by the fascist Iron Guard, had allied itself with Nazi Germany, and it had treated Russians—especially Communists—with great brutality in 1941-1944 when its troops occupied Soviet Moldova, including the Dniestr region. Thus the Moldovans' history justified fear of domination by

imperialist Russians, while the Russians' view of history justified fear of national chauvinist Romanians" (p. 120).

This is not to say that memory alone caused the conflict, but it did heavily influence the country's risk of war. Kaufman points out that "by the mid-1980s, all of the preconditions for mass hostility – rational grievances, negative stereotypes, disputes over emotional symbols, demographic fears, and a history of domination – were present in Moldova" (p. 122). When violence erupted nearby in the form of an attempted coup in Russia in August of 1991, Dniestrian leader Igor Smirnov reacted by organizing a referendum for independence and elections four months later (Kaufman 1996, p. 128).

With the aforementioned insights on collective memories and political violence in mind, our task is to identify a measure of the conflict environment that incorporates both spatial and temporal dimensions of neighborhood insecurity and that captures the aggregate processes that underpin conflict diffusion. We build this measure using three theoretical assumptions. The first concerns proximity (both with respect to time and space) of conflict events to a state at risk of civil war. The second and third detail how the impact of these conflict events in a state's neighborhood are moderated by the history of violence in a state's neighborhood and the state's own history of domestic conflict. We address each below.

We first assume that both newer and closer episodes of conflict are more important in shaping a state's conflict environment than events that are less proximate in time or space. The rationale is intuitive: newer, closer conflict in the neighborhood carries the most weight, as current crises are more salient in the collective consciousness of both citizens and political elites. For example, episodes of political violence near a state's border are more likely to impact that state's domestic politics than comparable conflicts thousands of miles away. Similarly, public reactions to crises such as the "rally 'round the flag" effect (see, e.g., Mueller 1970, Schultz 2001, and Lai and Reiter 2005) and sensitivity to casualties (Gartner and Segura 1998) are most prominent at first and gradually fade over time. Past conflict events matter less than those currently underway, but historical information is not

completely forgotten.

Importantly, in the absence of new violence, we assert that the collective memory of past violence fades over time. The pace at which memories of violence fade, however, depends on both external and internal conditions (our second and third assumptions, respectively). Our second assumption concerns the impact of external events on a state's conflict environment. We stipulate that the accumulation of peace in the neighborhood increases the rate at which past violence fades from states' and groups' memories. As years of neighborhood peace add up, the lingering and destabilizing effects of nearby conflict fade more rapidly. Enduring peace reinforces political stability and pacific norms of interaction by reducing negative externalities of nearby conflict. In contrast, when a state's neighborhood is plagued with recent civil wars, memories of historical violence and insecurity are harder to shake. As such, new outbreaks of neighboring conflict will be more likely to generate political instability and civil conflict. These claims are consistent with the logic of "conflict traps" (Collier et al. 2003) and "conflict hot spots" (Braithwaite 2010*b*).

Our third assumption concerns the impact of internal events on a state's conflict environment. When a state's history is marked by its own civil wars, its population is less likely to forget the effects of past violence and will thus be more sensitive to external conflicts. One reason for this is that a strong history of conflict institutionalizes political violence as a feature of domestic politics, so that nearby conflicts more easily trigger a recurrence of violence. Another reason concerns individuals' threat perceptions. Examining the effects of prior conflict on the perception of threats of interstate conflict, Li and her colleagues (2016) argue that "a state's prior experience of interstate violence makes its own citizens more prone to perceiving *any* other state (including third-party states not involved in the original violence) as hostile and threatening" (p. 1004, emphasis in original). In the same way, prior experiences with intrastate violence heighten a population's perception of threats, making them more sensitive to neighborhood violence. A history of civil war brings the frame of violence to the forefront of collective consciousness and increases the probability

that internal actors react to nearby conflict. In contrast, actors in states with little or no history of internal conflict are less likely to internalize instances of nearby violence; as such, they will be less likely to have violent norms, practices, or institutions inform their future interactions. For these fortunate states, past neighborhood violence more quickly fades from memory.

Together, our three assumptions capture the dynamics shaping a state's conflict environment. In turn, that conflict environment influences the likelihood of civil war onset. We thus propose the following simple hypothesis: *As a state's conflict environment worsens, it is more likely to experience the onset of civil war.* The next section translates this conceptual discussion into an explicit theoretical construct that can be operationalized. We then proceed with an empirical evaluation of the conflict environment's effects on civil war onset.

Measuring the Conflict Environment

We leverage the three assumptions discussed above to construct a new measure that accounts for both spatial and temporal dynamics of neighborhood conflict: the Conflict Environment (CE) score. The functional form of the CE score is customizable to other research agendas; raw conflict data can be drawn, for example, from existing datasets on interstate wars, militarized disputes, and civil wars. Depending on the questions of interest to researchers, the constituent lags of the score can be built using ongoing conflict, new conflict onsets, or conflict intensity. With its inherent flexibility to an array of research questions, we hope that the CE score will serve as both a theoretical and empirical contribution beyond its present application. For the purposes of this analysis, we examine how conflict environments affect a state's susceptibility to civil war onset; therefore, data on surrounding states' civil conflict onsets comprise the core piece of this paper's version of the CE score.[3]

[3]Not only is the CE score customizable for numerous research agendas, it also lends itself well to integration into dyadic and/or network analyses. Additionally, researchers can adapt the proximity matrix to reflect non-geographic connections such as trade or alliance ties.

In our first assumption, we suggest that spatially proximate conflicts are more likely to facilitate new onsets than distant conflicts. The natural way to operationalize this idea is to use a spatial lag. To construct the spatial component of the CE score, we begin with a standard N x N matrix, where N is the total number of states in the system. Its cells are populated with binary values, where 0 indicates that the row and column states are not neighbors, and 1 indicates that they are (Ward and Gleditsch 2008). Rather than only evaluating the impact of contiguous states, our calculation includes larger geographic neighborhoods. Following convention, our measure considers two states to be "neighbors" when the minimum distance between them is 950 kilometers or less (Gleditsch and Ward 2001).[4] We obtain data on minimum distances between states from the CShapes dataset (Weidmann, Kuse and Gleditsch 2010). Following Danneman and Ritter (2014), we replace the 0 and 1 values in the matrix with distance-sensitive weights; all states that share a "neighborhood" (i.e., dyads with a value of 1) receive a spatially lagged value reflecting their proximity. Consistent with our first assumption, this spatial lag weights conflict in contiguous states more heavily than conflict in states that are farther away. Each dyad's cell in the matrix is generated with the distance-degraded formula used by Danneman and Ritter (2014):

$$1 - \left(\frac{MinDistance}{950}\right)^{\frac{1}{4}} \tag{1}$$

Importantly, this functional form "penalizes increasing distance early, then allows its effect to diminish more slowly, heavily weighing contiguous states while down-weighing states

[4]We have relaxed this distance threshold to 2000 kilometers as a robustness check in recognition that a 950-kilometer threshold may be overly restrictive. The discussion and results may be found in the Online Appendix. Given the similarity of the results, we retain the more common threshold of 950 kilometers in our main analyses.

further from the target state" (Danneman and Ritter 2014, p. 262).[5] We also set the weights matrix's diagonal cells to 0, so conflict involving the focal state will not contribute to its own CE score. Finally, in order to capture the spatially-weighted impact of nearby conflict, we multiply the row associated with the focal state by a vector of annual conflict values across all states, resulting in a scalar value that is the distance-degraded spatial lag of conflict onset in the neighborhood for a given country-year (*slco*). For the purpose of this research, we use two different civil conflict vectors, one generated with the Correlates of War (COW) project's Instrastate War Data (Sarkees and Wayman 2010; Small and Singer 1982) and one generated with the Uppsala Conflict Data Program (UCDP)/Peace Research Institute of Oslo (PRIO) project's Armed Conflict Data (ACD) (Themner and Wallensteen 2013; Gleditsch et al. 2002).[6] We also generate two spatial lags, one for ongoing conflict (*slc*) and one for conflict onset (*slco*).

After calculating the spatial components of the CE score, we add a temporal dimension to reflect the temporal effects of conflict memories discussed in the previous section. The temporal lag is based on the interstate interaction model developed by Crescenzi and Enterline (2001). We adjust their functional form to make it consistent with the theoretical assumptions outlined above. A state i's CE score in year t is given by:

$$CE_{it} = \left(e^{-\lambda}\right) CE_{it-1} + slco_{it} \tag{2}$$

A state's current conflict environment (CE_{it}) is determined by its conflict environment in the previous year (CE_{it-1}), which is remembered or retained at a certain rate, $e^{-\lambda}$, plus any new conflict that arises in its neighborhood, weighted by that conflict's distance and

[5]Like all components of the CE score, the precise form of the spatial lag is easily customizable.

[6]We have also generated CE measures using alternative civil war datasets from Fearon and Laitin (2003) and Sambanis (2004) wars.

summed, as reflected with $slco_{it}$.[7] We set λ, the exponential decay of conflict information, to:

$$\lambda = \frac{1 + \delta_{it-1}}{1 + \alpha_{it-1}} \tag{3}$$

To reflect our first and second assumptions, we capture the accumulation of continuous peace in the neighborhood (δ_{it-1}). In other words, δ_{it-1} is the number of consecutive years without initiated or ongoing civil war within a state's 950-kilometer radius neighborhood, lagged one year to prevent simultaneity. More peace in the neighborhood accelerates the decay of conflict memory. In accordance with our third assumption, the CE score also accounts for the buildup of violent history within a state as an indicator of that state's sensitivity to its surrounding conflict environment. To accomplish this, α_{it-1} is a running total of state i's past history of civil conflict onsets, again lagged one year to prevent simultaneity. As a state accumulates its own history of civil war, it becomes more sensitive to neighborhood violence. A state's history of armed conflict preserves memories of violence and turmoil, making conflict memories more permanent and making actors within the state more susceptible to surrounding instability. On the other hand, an accumulation of internal peace insulates states from external conflicts and accelerates the decay of temporal or memory effects. As such, two states within the same neighborhood can react differently to neighborhood violence depending on their own experience with civil conflict. That is not to say that neighborhood violence has no impact on states with little or no civil war experience, but experiences with domestic civil conflict can exacerbate or mitigate the impact of nearby conflicts. Table 1 summarizes the components of the CE score and its relationship to civil war onset.

[7]Though more limited in its empirical range, $e^{-\lambda}$ theoretically ranges from 0 to 1. If $e^{-\lambda} = 0$, the system has no memory at all, and if $e^{-\lambda} = 1$, it has perfect memory, fully retaining every past neighborhood event.

Table 1: The Components of the Conflict Environment Score

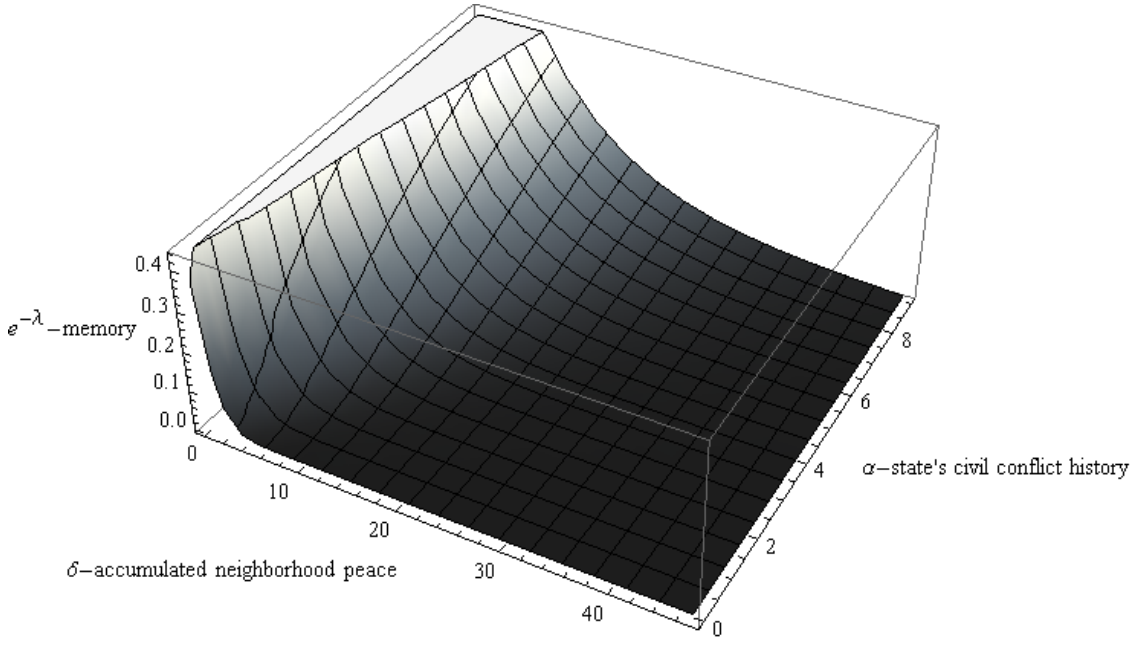
Spatial Effects	*Temporal Effects*: Immediate/Proximate	*Temporal Effects*: Past/Historical
Internal	Civil war onset (D.V.)	State's civil war history α_{it-1}
External	Spatial lag of civil war onset $slco_{it}$	Accumulated neighborhood peace δ_{it-1}

We designed the ratio defining λ to produce faster decay (i.e., limited memory of conflict; low values of $e^{-\lambda}$) when the neighborhood is peaceful (δ_{it-1} is high) or the state itself has little history of conflict (α_{it-1} is low). Thus, $e^{-\lambda}$ is at its lowest, about 0, when $\delta_{it-1} = 47$, its maximum value and $\alpha_{it-1} = 0$, its minimum value. Conversely, decay is slower (i.e., memories of conflict are stickier and values of $e^{-\lambda}$ are greater) when the neighborhood has a particularly violent past (δ_{it-1} is low) or the state itself has experienced extensive internal conflict (α_{it-1} is high). As a result, $e^{-\lambda}$ reaches its highest value, about .90, when $\delta_{it-1} = 0$, its minimum, and $\alpha_{it-1} = 9$, its maximum.

We plot the memory rate, $e^{-\lambda}$, and its two components, δ_{it-1} and α_{it-1}, to help illustrate the conditions under which internal and external histories produce more or less hostile conflict environment (See Figure 1). In particular, the figure shows that when a state has little to no history of internal violence, neighborhood civil violence lingers less; at low levels of α_{it} (no to few internal conflicts), only neighborhood peace years of about 10 or less produce temporal decay rates noticeably different from 0. States with long, peaceful internal histories shake neighborhood violence quickly and effectively. On the other hand, when a state has its own troubled history, neighborhood peace must endure for three or four decades before its lingering effects are shaken.

Our theoretical framework produces a conflict environment measure that reflects the

Figure 1: Temporal Memory of Conflict: A Visual Representation of $e^{-\lambda}$



spatial and temporal effects of civil conflict diffusion from a state's neighborhood to the state itself. Table 2 illustrates the descriptive statistics for civil war CE scores across various datasets. As the CE score increases, we expect civil war onset to become more likely. Two additional visuals help us illustrate these scores and how they are distinct from typical measures of surrounding conflict. In Figure 2, we plot the civil war CE scores of each state-year from 1960 to 2006 to visualize how the distribution of these scores varies across time and space. In the figure, we identify a few states with the highest score in a given year.

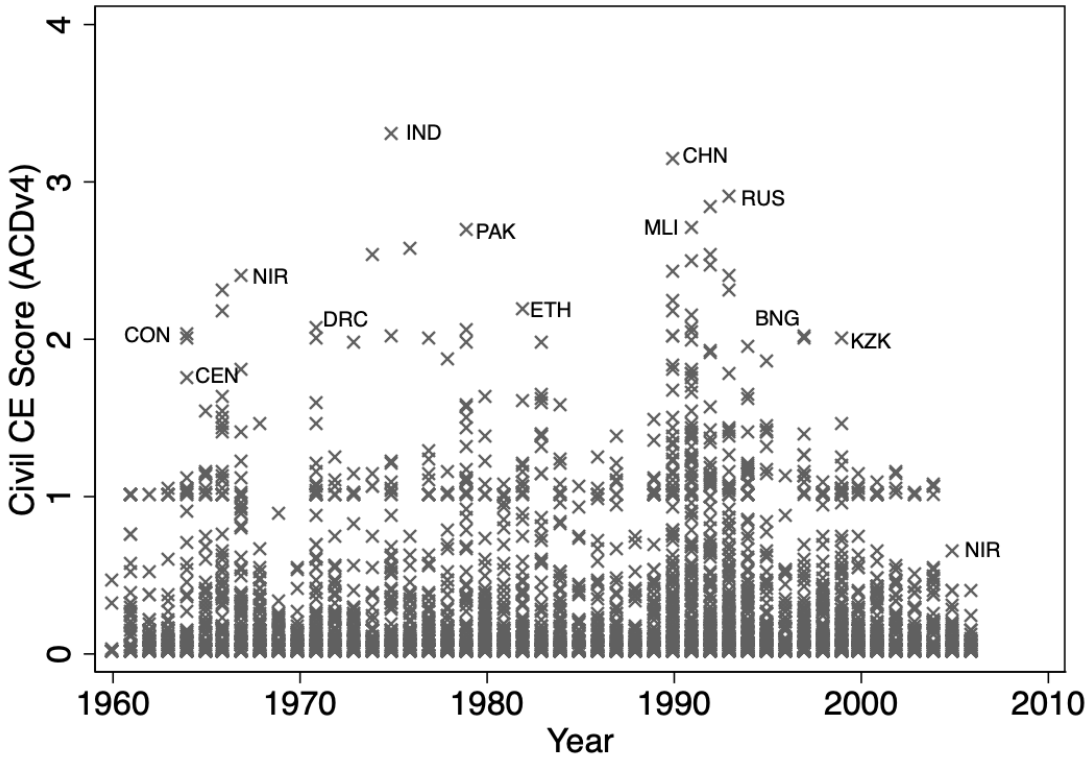
Table 2: Civil Conflict Environment Scores Across Civil War Data (1960-2006)

Statistic	N	Mean	St. Dev.	Min	Max
Civil CE Score (ACD v 4-2012)	5,971	0.142	0.334	0.000	3.291
Civil CE Score (COW)	5,602	0.248	0.529	0.000	9.646
Civil CE Score (Sambanis 2004)	5,208	0.126	0.337	0.000	3.713
Civil CE Score (Fearon & Laitin 2003)	5,024	0.087	0.266	0.000	3.000

Second, Figure 3 illustrates how the CE score captures conflict memory across time in a particular state: India. Here, we see that adding a temporal decay component distinguishes

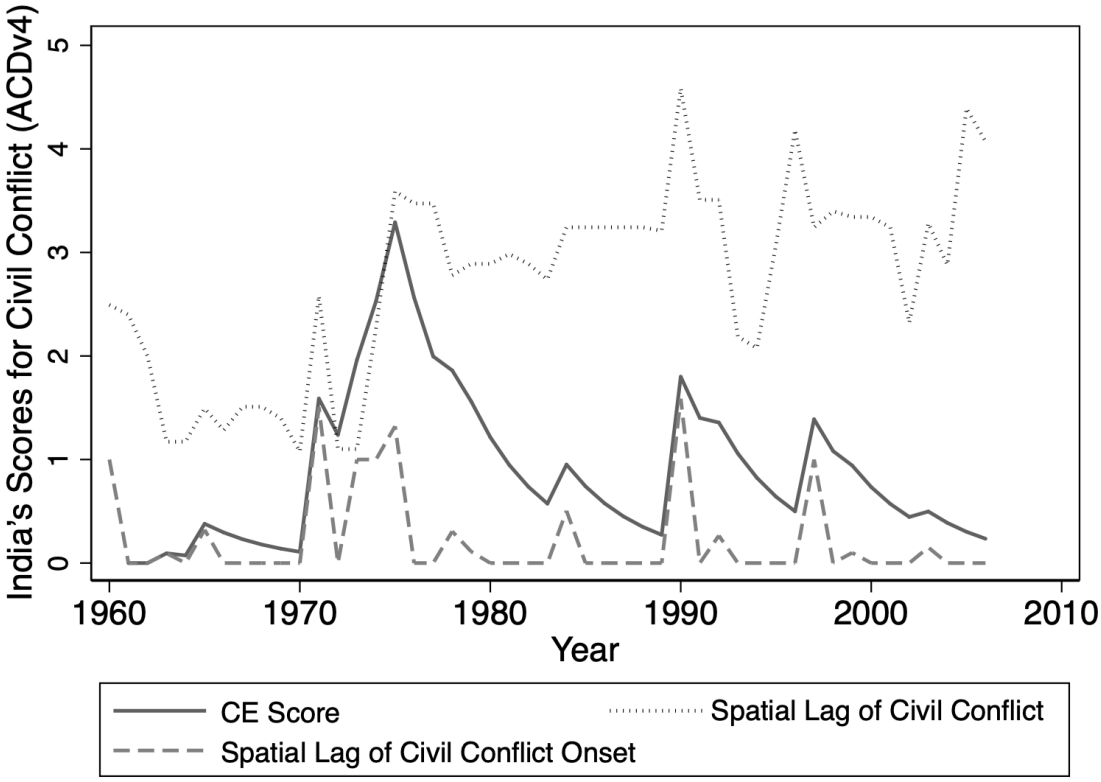
the CE score from basic spatial measures of civil conflict. The short-dashed line represents a spatial lag of all ongoing conflicts (slc_{it}), while the long-dashed line represents a spatial lag of new onsets of civil conflict ($slco_{it}$) in India's neighborhood. The solid line in the figure represents the CE score as specified in equation 2, which incorporates effects of dynamic memory. The CE score prioritizes new information about conflict onset over ongoing violence in a state's neighborhood. However, the speed with which that information decays is shaped both by histories of conflict in the neighborhood and India's own history of internal armed conflict.

Figure 2: Conflict Environment Scores, 1960-2006



The armed insurgency in the northeast Indian state of Assam in 1990 illustrates this dynamic by emphasizing the importance of both historical memory and proximate neighborhood violence in catalyzing conflict onset. The armed group that led the 1990 insurgency, the United Liberation Front of Assam (ULFA), was established over a decade earlier in response to externalities from the Bangladesh Liberation War. In 1971, armed conflict between Ben-

Figure 3: India's Conflict Environment Score Compared to Alternative Measures, 1960-2006



gali nationalists in East Pakistan and the military junta in West Pakistan culminated in the independence of Bangladesh. The conflict displaced millions of Bengali people, generating a wave of immigration into Assam (Baruah 1986). The formation of ULFA to protect the indigenous Assamese was motivated by grievances against the Indian state that were exacerbated by this changing demography. In the 1970s and 1980s, however, the ULFA lacked the resources to mobilize a large insurgent movement against the Indian government. The ULFA gradually developed relationships with other neighboring rebel groups, most notably the Kachin Independence Army (KIA), who had been engaged in an active insurgency in neighboring Myanmar since 1961. As Dasgupta (2001) writes, assistance from other active rebel movements "played a vital role in transforming ULFA into a formidable guerilla outfit armed with sophisticated weapons" (p. 60). In effect, civil conflict in Assam was shaped by historical grievances against the Indian state, memories of temporally distant conflict in Bangladesh, and resources from geographic and temporally proximate active insurgencies in Myanmar.

Empirics: Embedding the CE Score in Standard Models of Civil War Onset

By design, the CE score complements current analyses of civil war onset. Our goal is to evaluate our hypothesis without dismissing widely recognized causes of civil war, heeding the advice of Solingen (2012) to "integrate domestic, regional, and global considerations under a common theoretical framework" (p. 640). Modeling exogenous factors is a complement to, not a substitute for, understanding domestic determinants of conflict.

In order to select an empirical strategy, we had two main considerations. First and foremost, we are interested in making our findings more directly comparable to the existing cross-national literature on civil war onset. For example, tools like network analysis are

promising avenues for future conflict research,[8] but they make direct comparisons to what we already know about the onset of civil war difficult.

Second, we are interested in theorizing about spatial dependencies rather than controlling for the effects of spatial autocorrelation. Social Relations Models (SRMs), Exponential Random Graph Models (ERGMs), and advances in spatial econometrics can reveal the data's underlying structure and reduce bias when estimating a specific relationship of interest. For example, isolating the impact of state per capita income on civil war onset may involve the use of a spatial error model to control for omitted variables that are spatially correlated. However, many of these methods do not theorize spatial dependencies and have difficulty managing time dependencies (Cranmer and Desmarais 2011; Dorff and Ward 2013). Because our objective is to think theoretically about time and space rather than to control for spatial and temporal autocorrelation, we evaluate our central hypothesis using a research design that integrates the CE score into more standard models of civil war onset. This strategy directly builds upon the existing cross-national literature on civil war onset. Overall, our analysis suggests that a higher CE score systematically increases a state's risk of civil conflict.

Research Design

We begin with standard probit regression analyses of civil war onset in all country-years from 1960 through 2006, with standard errors clustered by country. Following existing literature, we use a binary dependent variable; country-years experiencing civil war onset are coded as 1 while all others are coded 0. Country-years in which civil wars are ongoing are dropped

[8]For a more thorough discussion of the applications of network analysis to international relations, see Hafner-Burton, Kahler and Montgomery (2009) and Maoz (2015).

from the analysis.[9]

As Hegre and Sambanis (2006) note, the coding for civil war onset is highly inconsistent across various studies.[10] To mitigate the effects of data discrepancies and ensure that our findings are robust across definitions of civil war, we use both the COW and ACD datasets to code our dependent variable.[11] COW codes a civil war using a minimum of 1000 battle deaths while the UCDP/PRIO uses a minimum of 25 battle deaths. The ACD further restricts armed conflicts to those fought over government or territory, and in which at least one party is a state government (Gleditsch et al. 2002).

To control for domestic determinants of civil war, we begin with a very basic model of civil war onset. We first include a state's per capita income. As a proxy for economic well-being and development, per capita income negatively correlates with the risk of civil war (Fearon and Laitin 2003; Sambanis 2004; Collier, Hoeffler and Rohner 2009; Bleany and Dimico 2011), an association that is the most "widely accepted relationship between economic factors and civil war" (Dixon 2009, p.714). We control for per capita income using data from Heston, Summers and Aten (2012).

Second, we control for population size using data from Heston, Summers and Aten (2012). Scholars typically link higher populations to civil conflict (Sambanis 2001; Collier and Ho-

[9]In the appendix, we consider an alternative coding of war onset in which ongoing civil wars are coded as 0 to allow for the occurrence of simultaneous civil wars. However, given that this has the potential to bias the size of the estimated coefficients (McGrath 2015), dropping ongoing conflicts from the analysis is a more appropriate and conservative choice.

[10]Bleany and Dimico (2011) analyze the pairwise correlation for war onsets across five different datasets and find that it ranges from 0.197 to 0.634.

[11]We use the 2010 updates from the COW intrastate war dataset and the 2012 updates from the UCDP/PRIO's ACD. We use the most conservative coding of civil war onset provided by the ACD to avoid coding ongoing conflicts as new civil war onsets. Therefore, a 1 reflects a new civil conflict rather than a new episode of a preexisting civil conflict.

effler 2004; Fearon and Laitin 2003; Reynal-Querol 2002; Salehyan and Gleditsch 2006; Gleditsch 2007). In an analysis of African states, Raleigh and Hegre (2009) demonstrate that conflict increases with population size and in densely populated areas.

Third, we control for level of democracy and regime consolidation using a state's Polity IV score (Gurr 1974; Marshall and Jaggers 2002). Existing research identifies a curvilinear relationship between democracy and conflict: consolidated democracies and autocracies are more resistant to political instability, while weakly democratic or transitioning states are most likely to experience violent conflict (DeNardo 1985; Muller and Weede 1998; Ellingsen and Gleditsch 1997; Regan and Henderson 2002). Therefore, we include both a state's Polity score (which captures the democracy level) and a state's Polity-squared score (to represent consolidation) as controls.

Fourth, we control for ethnic grievances within a state. Scholars use many metrics of ethnic fractionalization and dominance. Early civil war scholarship included a measure of ethnolinguistic fractionalization (ELF) popularized by Easterly and Levine (1997). Critics question this measure's conceptualization and application to conflict onset (Alesina et al. 2003; Fearon 2003; Posner 2004), and many have developed refined indices of ethnic grievance (see Scarritt and Mozaffar 1999; Roeder 2001; Reynal-Querol 2002; Posner 2004; Chandra 2009; Wimmer, Cederman and Min 2009; Chandra 2012) to better operationalize the mechanisms that fuel violence. Our model uses a more theoretically appropriate measure of ethnicity from Salehyan and Gleditsch (2006), which captures the percentage of the population that does not belong to a dominant group, whether religious, linguistic, or racial. Higher values indicate a smaller dominant ethnic minority (Vanhanen 1999).[12]

Fifth, and finally, because multiple civil war onset studies note time dependence issues,

[12]We run alternative models with Fearon and Laitin's (2003) ethnic fractionalization measure and Wimmer, Cederman, and Min's (2009) excluded population measure. The excluded population measure codes access to executive power, or the percentage of the population excluded from executive positions. Results are available in the Online Appendix

we follow Carter and Signorino (2010) and include a cubic polynomial approximation of time. We opt for this method over the time dummies or splines suggested by Beck, Katz and Tucker (1998) because it matches common practice in existing work and avoids quasi-complete separation.

Results: Civil Conflict Across Time and Space

Models 1 and 3 in Table 3 present baseline domestic models of civil war onset, using ACD and COW data, respectively. These baseline models are consistent with the existing literature on civil war onset. Population size and ethnic heterogeneity are positively correlated with civil war onset. Per capita income is negatively correlated with conflict onset; although this variable does not attain statistical significance in some specifications, the direction of the effect remains the same. The coefficients on Polity and its square suggest a curvilinear relationship between democracy and civil conflict onset that has been well documented in the civil war literature. Thus, like others, we find that weak, unconsolidated democracies are the most civil war prone.

Next, Models 2 and 4 (based on ACD and COW civil war data, respectively) add the CE score to the baseline models. Both specifications reveal that a more conflictual environment increases the likelihood of civil war onset. The effects of the CE score are statistically significant ($p<.001$ for both the ACD and COW model). Models 2 and 4 indicate that including the CE score improves the statistical model's fit over models that exclusively rely on domestic determinants of civil war onset.[13]

Using Model 2's results and holding all domestic controls at their median values, Figure 4 plots the predicted probability of civil war onset as the CE score increases. Using ACD data, this plot shows that as the CE score ranges from its minimum value to its maximum

[13]A comparison of Model 2 to Model 1 (baseline) demonstrates that both the AIC and BIC are lower for the conflict environment model; the same holds true when comparing Models 4 and 3.

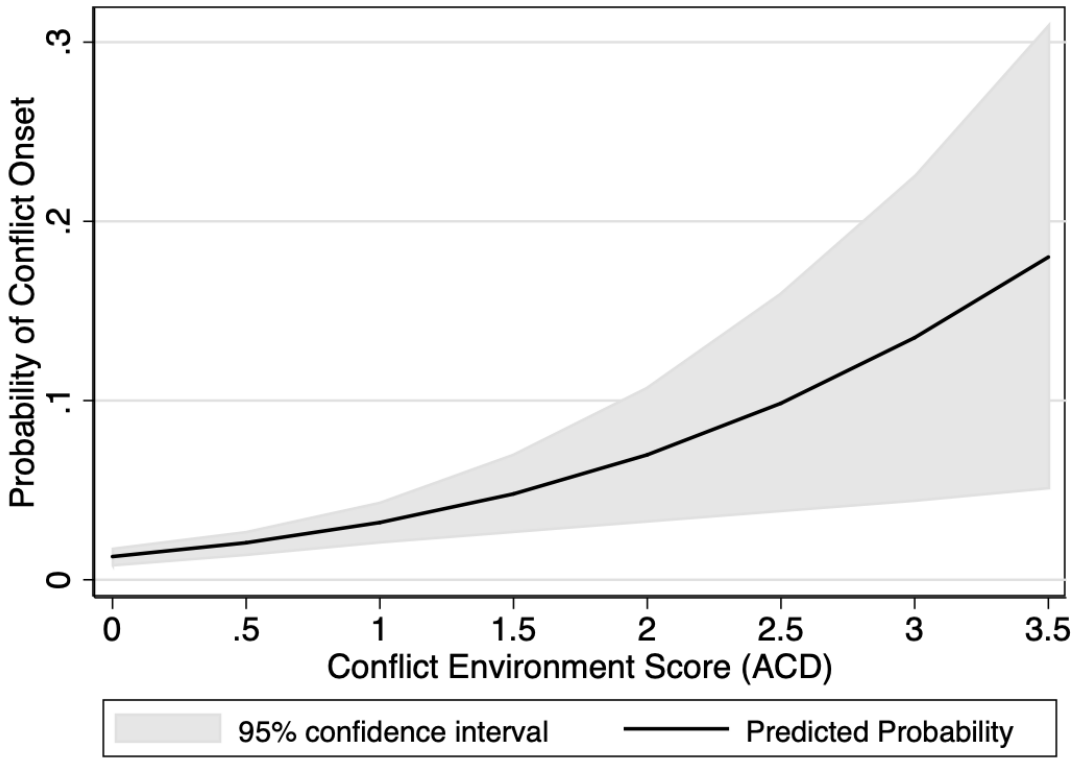
Table 3: Effects of the Conflict Environment on Civil War Onset

	(1) ACD	(2) ACD	(3) COW	(4) COW
Civil CE Score (ACD)		0.385^{***}		
		(0.086)		
Civil CE Score (COW)				0.506^{***}
				(0.054)
Per capita GDP (ln)	-0.209^{***}	-0.176^{***}	-0.112	-0.087
	(0.055)	(0.051)	(0.060)	(0.060)
Population (ln)	0.130^{***}	0.097^{**}	0.196^{***}	0.171^{***}
	(0.038)	(0.035)	(0.042)	(0.047)
Ethnic Heterogeneity	0.007^{**}	0.006^{*}	0.007^{*}	0.005
	(0.003)	(0.003)	(0.003)	(0.003)
Polity Score	0.017^{*}	0.018^{*}	0.003	0.012
	(0.008)	(0.008)	(0.009)	(0.008)
Polity Score, Squared	-0.004^{*}	-0.004^{*}	-0.005^{*}	-0.005^{*}
	(0.002)	(0.002)	(0.002)	(0.002)
AIC	893.098	868.527	1313.467	1199.885
BIC	951.931	933.717	1372.507	1265.303
Observations	5100	5009	5219	5125

Standard errors in parentheses are clustered by country. Control variables lagged one year. Constant and time controls omitted for presentation. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

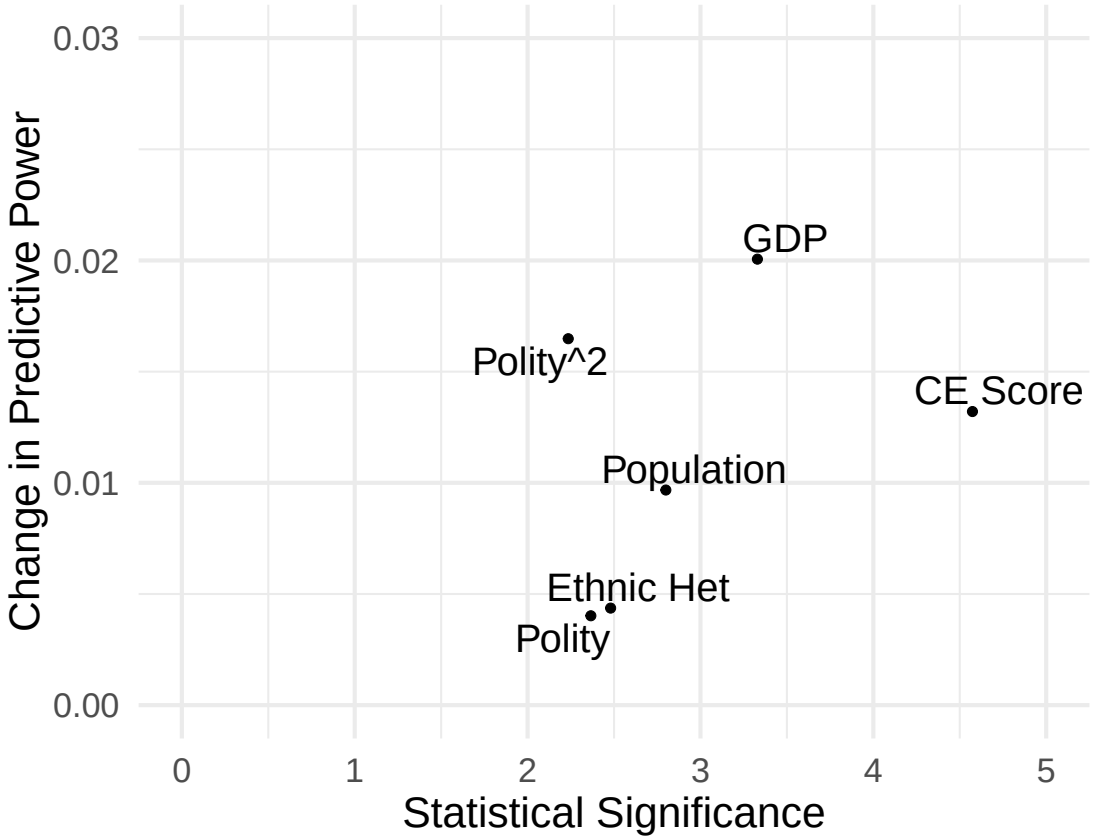
value, the predicted probability of civil war onset ranges from approximately 1 percent to close to 20%. In extraordinarily conflictual environments, then, the likelihood of civil war onset is substantially larger than in environments marked by peace.

Figure 4: Predicted Probabilities of Civil War Onset



Following the recommendation of Ward, Greenhill and Bakke (2010), we also plot the predictive and statistical significance of the variables in Model 2 of Table 3. In Figure 5, we provide a two-dimensional view of the role each variable plays in the overall analysis. The vertical axis represents the change in in-sample predictive power of the overall model when each variable is included to the otherwise full model. The horizontal axis represents the absolute value of the z-score for each variable, denoting a consistent measure of statistical significance. Given that variables in models of rare events (like civil war onset) have very low predictive power, we caution against interpretating the results as definitive. Nevertheless, the CE score performs well relative to common domestic determinants of conflict, with only per capita income and regime consolidation having greater in-sample predictive power.

Figure 5: Predictive vs. Statistical Significance: Domestic Determinants



Alternative Measures of Neighborhood Effects

While Table 3 reveals that the relationship between conflictual environments and civil war onset is robust across civil war datasets, we acknowledge that researchers have used alternative measures of neighboring conflict. In this section, we assess whether our CE score outperforms traditional measures of regional or neighborhood violence.[14]

First, we generate spatial lags of both civil conflict and civil conflict onset using the same data we used to construct the CE score. We keep the 950 kilometer minimum distance threshold and use the same distance-degraded formula in order to weight closer conflicts more heavily than conflicts that are farther away.

Second, we explore the effects of neighborhood civil war in contiguous states (Hegre and Sambanis 2006; Buhaug and Gleditsch 2008; Braithwaite 2010*a*). We use Buhaug and Gleditsch's (2008) dichotomous variable to indicate the existence of a neighbor at war, reconstructing their variable to be consistent with an updated version of UCDP's Armed Conflict Dataset (Themner and Wallensteen 2013).

Third, we test a variable measuring the presence of regional conflict. If conflict diffuses via mechanisms beyond physical contagion, we expect that states with regionally-based ties will be similarly susceptible to conflict. Post-communist Eastern Europe during the 1990s and the Middle East/North African region during the late 2000s illustrate why we should not assume that conflict-ridden, non-contiguous states in the same region are independent. We generate a variable to capture the number of regional participants in civil conflict, basing our coding of region on Fearon and Laitin's work (2003) and the Minorities at Risk Project (Minorities at Risk Project 2009).

Finally, we consider how neighborhood economic conditions influence the onset of civil war. The "conflict trap" hypothesis popularized by Sambanis and his co-authors (2003) suggests that relatively poor countries are spatially grouped. Following Braithwaite (2010*a*),

[14]These measures are all generated with ACD data. Alternatives with COW data are available in the Online Appendix.

we include the average income of a state's neighbors as a measure of neighborhood GDP.

Table 4: Regional and Neighborhood Effects on Armed Conflict

	(5) ACD	(6) ACD	(7) ACD	(8) ACD	(9) ACD
Spatial Lag of Conflict	0.007				
	(0.044)				
Spatial Lag of Conflict Onset		0.249**			
		(0.087)			
Neighborhood Civil War			−0.074		
			(0.102)		
Regional States in Conflict				0.035	
				(0.021)	
Neighborhood GDP (ln)					−0.071
					(0.084)
Per capita GDP (ln)	−0.208***	−0.200***	−0.212***	−0.166*	−0.184*
	(0.055)	(0.055)	(0.056)	(0.068)	(0.075)
Population (ln)	0.128***	0.122**	0.134***	0.130***	0.124**
	(0.036)	(0.038)	(0.039)	(0.037)	(0.040)
Ethnic Heterogeneity	0.007**	0.007**	0.007**	0.007**	0.007*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Polity Score	0.017*	0.018*	0.016*	0.016*	0.018*
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Polity Score, squared	−0.004*	−0.004*	−0.004*	−0.003	−0.004
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
AIC	895.074	890.815	894.673	891.502	850.843
BIC	960.444	956.185	960.043	956.820	914.798
Observations	5100	5100	5100	5074	4427

Standard errors in parentheses are clustered by country. Control variables lagged one year.
Constant and time controls omitted for presentation. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4 replicates the analyses by adding each of the five alternative neighborhood measures to the baseline model of civil war onset. The results for traditional neighborhood measures mimic the mixed empirical support these variables have in the existing literature. As noted earlier, we believe this mixed support is in part because these variables do not take into account the spatial *and* temporal processes of diffusion. Importantly, consistent with Buhaug and Gleditsch (2008), Model 5 shows that a spatial lag of conflict is *not* a significant predictor of conflict onset. However, as shown in Model 6, a spatial lag of conflict *onset* has

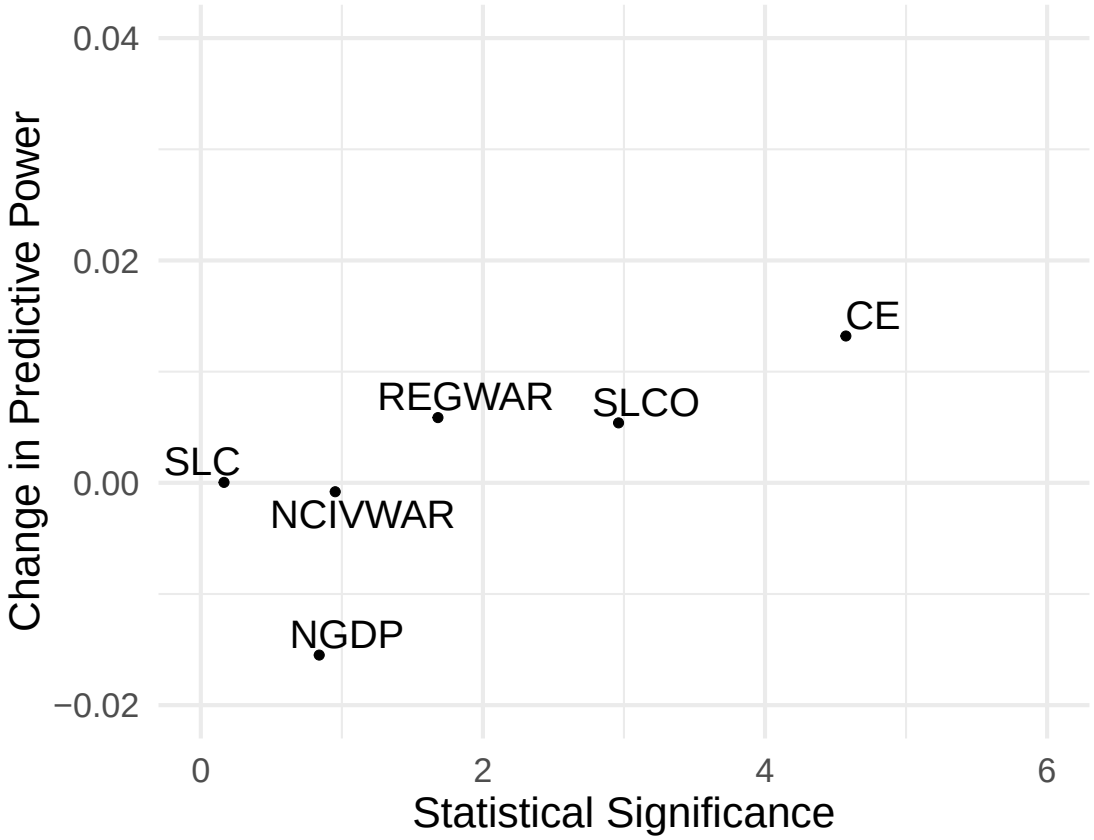
a positive and statistically significant relationship with civil war onset. The coefficients on the remaining three neighborhood measures (Models 7-9) fail to attain statistical significance at conventional levels.

To complement Table 4, in Figure 6 we plot the statistical significance and the in-sample predictive power of each of the alternative neighborhood measures. These measures correspond to the five different models in Table 4: the naive spatial lag of conflict (SLC), the spatial lag of conflict onset (SLCO), an indicator for neighborhood civil war (NCIVWAR), an indicator for regional civil wars (REGWAR), and neighborhood GDP (NGDP). Once again, the CE score performs well in comparison to other aggregate measures traditionally used in standard models of civil war onset. It also has better in-sample predictive power than the only other statistically significant measure of neighborhood conflict — a spatial lag of civil war onset (SLCO) — although, again, we would caution any over-interpretation of these results given the rarity of civil war onset.

Additional Robustness Checks

To further verify our findings, we complete several robustness checks which are available in an Online Appendix. First, we examine different spatial and temporal lags. In particular, we relax the 950-kilometer threshold within our CE score (see equation 1), extending it to include all conflict within 2,000 kilometers of the focal state. Second, we evaluate the robustness of our findings with an alternative coding of the dependent variable (civil war onset) that allows us to capture armed conflicts that are happening simultaneously. Third, we explore the effect of additional neighborhood variables on the Correlates of War dataset. Fourth, we run alternative models on both civil war datasets that include different operationalizations for ethnic diversity (Roeder 2001; Alesina et al. 2003; Wimmer, Cederman and Min 2009), democracy (Marshall and Jaggers 2002), and political instability (Fearon and Laitin 2003; Cederman, Wimmer and Min 2010). Fifth, while previous research has suggested that contagion may be limited to separatist conflicts with transnational ethnic ties, we show that

Figure 6: Predictive vs. Statistical Significance: Neighborhood Measures



the substantive effect of the CE score holds across both civil wars involving territory and those that are center-seeking. In fact, the CE score is an even better predictor of civil war onset in center-seeking conflicts than in separatist conflicts.

Finally, we replicate three existing analyses from the literature on civil war onset and add our CE score to these models. Because of inconsistencies in the coding of civil war onset, we regenerate the CE score based on the civil war data used in each of the original analyses. In particular, we select the first systematic cross-national studies of civil war onset (Fearon and Laitin 2003) and civil war contagion (Buhaug and Gleditsch 2008), as well as a more contemporary study of neighborhood conflict and civil war onset (Bara 2018). In all cases, adding the CE score improves the explanatory power of the models without substantially changing the significance of other key variables.

Conclusion

The claim that a state's surroundings affect its propensity for civil war is conceptually intuitive, but thus far the empirical evidence has been mixed. While understanding specific diffusion mechanisms continues to be an important pursuit, our analyses suggest that aggregate measures of neighboring conflict deserve a second look. Our research presents an example of a complementary, ecological approach to understanding diffusion that facilitates theorizing about the dynamics of conflict processes across time and space.

This research suggests that violent conflict environments increase the likelihood of civil war onset. Diffusion spurs new cases of civil war and lingering memories of violence contribute to the spread of conflict. Our approach offers researchers flexibility in incorporating conflict environments into an explanation of civil war that complements domestic determinants of violence by incorporating information about a state's geopolitical security.

Similarly, understanding conflict environments can help states craft more effective conflict management policies. When civil war states become surrounded by a hostile neighborhood,

conflict management strategies may need to insulate civil war states from neighboring pressures, or offer regional, rather than state-specific, conflict resolution techniques. But if a civil war state exists within a peaceful neighborhood, conflict managers can focus their resources on domestic determinants of resolution success. In sum, increases in CE scores warn conflict managers about the heightened risk of civil war, and management strategies can be attuned to the civil war state's conflict environment without losing focus on domestic parameters or specific factors such as ethnic ties to rebelling kin in nearby states.

While the work herein moves the literature forward, future research is warranted along both theoretical and empirical lines. We must continue to think theoretically about how, when, and where the negative externalities of conflict persist across longer period of time. We view our measures and models as a baseline. Scholars seeking a more nuanced historical context for a particular state or part of the world can build upon this platform. For example, some states have cultivated an institutional sensitivity to nearby threats that may affect the duration of the impact of historical violence. Serbia leverages the fourteenth century Battle of Kosovo in poetry, song, and film to institutionalize the memory of hostile neighbors. For Czechs it is the battle of Bila Hora in 1620. Such "chosen traumas" (Volkan 2011, p. 88-89) can make states more susceptible to reacting to neighboring violence with internal violence. Quantifying the existence and impact of these institutionalized memories would be difficult on a large-N scale, but these examples illustrate some of the many ways qualitative research can improve upon baseline quantitative analyses to extend our conceptualization of conflict environments.

References

Alcock, Norman Z. 1972. *The War Disease*. Oakville, Ontario: CPRI Press.

Alesina, Alberto, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat and Romain Wacziarg. 2003. "Fractionalization." *Journal of Economic Growth* 8:155–194.

Ayres, William R. and Stephen Saideman. 2000. "Is Separatism as Contagious as the Common Cold or as Cancer? Testing International and Domestic Explanations." *Nationalism and Ethnic Politics* 63(3):91–113.

Ban, Ki-Moon. 2012. Report of the Assessment Mission on the Impact of the Libyan Crisis on the Sahel Region. Technical report United Nations Security Council.

Bara, Corinne. 2018. "Legacies of Violence: Conflict-specific Capital and the Postconflict Diffusion of Civil War." *Journal of Conflict Resolution* 62(9):1991–2016.

Baruah, Sanjib. 1986. "Immigration, Ethnic Conflict, and Political Turmoil: Assam, 1979-1985." *Asian Survey* 26(11):1184–1206.

Beck, Nathaniel, Jonathan N. Katz and Richard Tucker. 1998. "Taking Time Seriously: Time-Series Cross-Section Analysis with a Binary Dependent Variable." *American Journal of Political Science* 42(4):1260–1288.

Black, Nathan. 2013. "When Have Violent Civil Conflicts Spread? Introducing a Dataset of Substate Conflict Contagion." *Journal of Peace Research* 50:751–759.

Bleany, Michael and Arcangelo Dimico. 2011. "How Different Are the Correlates of Onset and Continuation of Civil Wars?" *Journal of Peace Research* 48(2):145–155.

Bosker, Maarten and Joppe de Ree. 2014. "Ethnicity and the Spread of Civil War." *Journal of Development Economics* 108:206–221.

Braithwaite, Alex. 2010*a*. *Conflict Hot Spots: Emergence, Causes, and Consequences*. Aldershot: Ashgate.

Braithwaite, Alex. 2010*b*. "Resisting Infection: How State Capacity Conditions Conflict Contagion." *Journal of Peace Research* 47(3):311–319.

Bremer, Stuart. 1982. "The Contagiousness of Coercion: The Spread of Serious International Disputes, 1900-1976." *International Interactions* 9(1):29–55.

Buhaug, Halvard and Kristian Skrede Gleditsch. 2008. "Contagion or Confusion? Why Conflicts Cluster in Space." *International Studies Quarterly* 52:215–233.

Carmignani, Fabrizio and Parvinder Kler. 2017. "The Spillover of War in Time and Space: Exploring Some Open Issues." *Applied Economics* 49(3):273–288.

Carter, David B. and Curtis S. Signorino. 2010. "Back to the Future: Modeling Time Dependence in Binary Data." *Political Analysis* 18(3):271–292.

Cederman, Lars-Erik, Andreas Wimmer and Brian Min. 2010. "Why Do Ethnic Groups Rebel? New data and analysis." *World Politics* 62(1):87–119.

Cederman, Lars-Erik, Kristian Skrede Gleditsch, Idean Salehyan and Julian Wucherpfennig. 2013. "Transborder Ethnic Kin and Civil War." *International Organization* 67:389–410.

Cederman, Lars-Erik, Luc Girardin and Kristian Skrede Gleditsch. 2009. "Ethnonationalist Triads: Assessing the Influence of Kin Groups on Civil Wars." *World Politics* 61(3):403–437.

Cederman, Lars-Erik and Manuel Vogt. 2017. "Dynamics and Logics of Civil War." *Journal of Conflict Resolution* 61(9):1992–2016.

Chandra, Kanchan. 2009. A Constructivist Dataset on Ethnicity and Institutions. In *Measuring Identity: A Guide for Social Scientists*, ed. Rawi Abelal, Yoshiko Herrera, Alastait Iain

Johnston and Rose McDermott. Cambridge, UK: Cambridge University Press chapter 8, pp. 250–278.

Chandra, Kanchan, ed. 2012. *Constructivist Theories of Ethnic Politics*. Oxford, UK: Oxford University Press.

Chelin, Richard Philippe. 2018. "From the Islamic State of Algeria to the Economic Caliphate of the Sahel: The Transformation of Al Qaeda in the Islamic Maghreb." *Terrorism and Political Violence* pp. 1–20.

Collier, Paul and A. Hoeffler. 2004. "Greed and Grievance in Civil War." *Oxford Economic Papers* 56:563–595.

Collier, Paul, Anke Hoeffler and Dominic Rohner. 2009. "Beyond Greed and Grievance: Feasibility and Civil War." *Oxford Economic Papers* 61:1–27.

Collier, Paul, Nicholas Sambanis, Marta Reynal-Querol, Håvard Hegre, Lani Elliott and Anke Hoeffler. 2003. *Breaking the Conflict Trap: Civil War and Development Policy*. Washington, DC: World Bank and Oxford University Press.

Costalli, Stefano and Andrea Ruggeri. 2015. "Indignation, Ideologies, and Armed Mobilization: Civil War in Italy, 1943–45." *International Security* 40(2):119–157.

Cranmer, Skyler J and Bruce A Desmarais. 2011. "Inferential Network Analysis with Exponential Random Graph Models." *Political Analysis* 19(1):66–86.

Crescenzi, Mark and Andrew Enterline. 2001. "Time Remembered: A Dynamic Model of Interstate Interaction." *International Studies Quarterly* 45(3).

Crowther, William. 1998. "Ethnic Politics and the Post-Communist Transition in Moldova." *Nationalities Papers* 26(1):147–164.

Danneman, Nathan and Emily Hencken Ritter. 2014. "Contagious Rebellion and Preemptive Repression." *Journal of Conflict Resolution* 58(2):254–279.

Dasgupta, Anindita. 2001. "Small Arms Proliferation in India's Northeast: A Case Study of Assam." *Economic and Political Weekly* 36(1):59–65.

DeNardo, James. 1985. *Power in Numbers: The Political Strategy of Protest and Rebellion*. Princeton, NJ: Princeton University Press.

DeVotta, Neil. 2009. "The Liberation Tigers of Tamil Eelam and the Lost Quest for Separatism in Sri Lanka." *Asian Survey* 49(6):1021–1051.

DiCarlo, Rosemary A. January 26, 2012. Remarks by Ambassador Rosemary DiCarlo, U.S. Deputy Permanent Representative to the United Nations. In *United Nations Security Council Briefing on Peace and Security in Africa*.

Dixon, Jeffrey. 2009. "What Causes Civil Wars? Integrating Quantitative Research Findings." *International Studies Review* 11(4):707–735.

Dorff, Cassy and Michael D Ward. 2013. "Networks, Dyads, and the Social Relations Model." *Political Science Research and Methods* 1(02):159–178.

Easterly, William and Ross Levine. 1997. "Africa's Growth Tragedy: Policies and Ethnic Divisions." *Quarterly Journal of Economics* 112:1203–1250.

Elbadawi, Ibrahim and Nicholas Sambanis. 2002. "How Much War Will we see? Explaining the Prevalence of Civil War." *Journal of Conflict Resolution* 46(3):307–334.

Ellingsen, Tanja and Nils Petter Gleditsch. 1997. Democracy and Armed Conflict in the Third World. In *Causes of Conflict in Third World Countries*, ed. Ketil Volden and Dan Smith. International Peace Research Institute pp. 69–81.

Fearon, James. 2003. "Ethnic Structure and Cultural Diversity by Country." *Journal of Economic Growth* 8:195–222.

Fearon, James D. and David D. Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *American Political Science Review* 97(1):75–90.

Forsberg, Erika. 2013. "Do Ethnic Dominoes Fall? Evaluating Domino Effects of Granting Territorial Concessions to Separatist Groups." *International Studies Quarterly* 57:329–340.

Forsberg, Erika. 2014*a*. "Diffusion in the Study of Civil Wars: A Cautionary Tale." *International Studies Review* 16:188–198.

Forsberg, Erika. 2014*b*. "Transnational Transmitters: Ethnic Kinship Ties and Conflict Contagion 1946-2009." *International Interactions* 40(2):143–165.

Gartner, Scott Sigmund and Gary M Segura. 1998. "War, Casualties, and Public Opinion." *Journal of Conflict Resolution* 42(3):278–300.

Gates, Scott, Håvard Hegre, Mark P. Jones and Håvard Strand. 2006. "Institutional Inconsistency and Political Instability: Polity Duration, 1800-2000." *American Journal of Political Science* 50(4):893–908.

Gleditsch, Kristian Skrede. 2002. *All International Politics is Local: The Diffusion of Conflict, Integration, and Democratization*. Ann Arbor, MI: University of Michigan Press.

Gleditsch, Kristian Skrede. 2007. "Transnational Dimensions of Civil War." *Journal of Peace Research* 44(3):293–309.

Gleditsch, Kristian Skrede and Michael D. Ward. 2001. "Measuring Space: A Minimum-Distance Database and Applications to International Studies." *Journal of Peace Research* 38(6):739–758.

Gleditsch, Nils, Håvard Strand, Mikael Eriksson, Margareta Sollenberg and Peter Wallensteen. 2002. "Armed Conflict 1946-2001: A New Dataset." *Journal of Peace Research* 39(5):615–637.

Gurr, Ted Robert. 1974. "Persistence and Change in Political Systems, 1800-1971." *American Journal of Political Science* 74:1482–1504.

Hafner-Burton, Emilie M., Miles Kahler and Alexander H. Montgomery. 2009. "Network Analysis for International Relations." *International Organization* 63:559–592.

Harvey, Mary R. 1996. "An Ecological View of Psychological Trauma and Trauma Recovery." *Journal of Traumatic Stress* 9(1):3–23.

Harvey, Mary R. 2007. "Towards an Ecological Understanding of Resilience in Trauma Survivors: Implications for Theory, Research, and Practice." *Journal of Aggression, Maltreatment & Trauma* 14(1-2):9–32.

Hegre, Håvard, Håvard Mokleiv Nygård and Ranvieg Flaten Ræder. 2017. "Evaluating the Scope and Intensity of the Conflict Trap: A Dynamic Simulation Approach." *Journal of Peace Research* 54(2):243–261.

Hegre, Håvard and Nicholas Sambanis. 2006. "Sensitivity Analysis of Empirical Results on Civil War Onset." *Journal of Conflict Resolution* 50(4):508–535.

Hegre, Håvard, Tanja Ellingsen, Scott Gates and Nils Petter Gleditsch. 2001. "Towards a democratic civil peace?" *American Political Science Review* 95:33–48.

Heston, Alan, Robert Summers and Bettina Aten. 2012. "Penn World Table Version 7.1, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania.".

Hill, Stuart and Donald Rothchild. 1986. "The Contagion of Political Conflict in Africa and the World." *Journal of Conflict Resolution* 30(4):716–735.

Houweling, Henk and Jan Siccama. 1985. "The Epidemiology of War, 1816-1980." *Journal of Conflict Resolution* 29(4):641–663.

Kadera, Kelly. 1998. "Transmissions, Barriers, and Constraints: A Dynamic Model of the Spread of War." *Journal of Conflict Resolution* 42(3):367–387.

Kaufman, Stuart J. 1996. "Spiraling to Ethnic War: Elites, Masses, and Moscow in Moldova's Civil War." *International Security* 21(2):108–138.

Kaufman, Stuart J. and Stephen R. Bowers. 1998. "Transnational Dimensions of the Transnistrian Conflict." *Nationalities Papers* 26(1):129–146.

Konaev, Margarita and Kirstin JH Brathwaite. 2017. "Dangerous Neighborhoods: State Behavior and the Spread of Ethnic Conflict." *Conflict Management and Peace Science* 36(5):447–468.

Krcmaric, Daniel. 2014. "Refugee Flows, Ethnic Power Relations, and the Spread of Conflict." *Security Studies* 23:182–216.

Kuran, Timor. 1998. Ethnic Dissimilation and its International Diffusion. In *The International Spread of Ethnic Conflict: Fear, Diffusion, and Escalation*, ed. David A. Lake and Donald Rothchild. Princeton, NJ: Princeton University Press.

Lai, Brian and Dan Reiter. 2005. "Rally 'round the Union Jack? Public Opinion and the Use of Force in the United Kingdom, 1948–2001." *International Studies Quarterly* 49(2):255–272.

Li, Mengyao, Bernhard Leidner, Hyun Euh and Hoon-Seok Choi. 2016. "The Contagion of Interstate Violence: Reminders of Historical Interstate (But Not Intrastate) Violence Increase Support for Future Violence Against Unrelated Third-Party States." *Personality and Social Psychology Bulletin* 42(8):1003–1024.

Linebarger, Christopher. 2015. "Civil War Diffusion and the Emergence of Militant Groups, 1960–2001." *International Interactions* 41:583–600.

Maoz, Zeev. 2015. "How Network Analysis Can Inform the Study of International Relations." *Conflict Management and Peace Sciencec* 29(3):247–256.

Marshall, Monty G. and Keith Jaggers. 2002. "Polity IV Project: Political Regime Characteristics and Transitions, 1800-2002." College Park, MD: Center for International Development and Conflict Management, University of Maryland. URL: http://www.cidcm.umd.edu/inscr/polity/index.htm (April 28, 2015) .

McGrath, Liam F. 2015. "Estimating Onsets of Binary Events in Panel Data." *Political Analysis* 23:534–549.

Minorities at Risk Project. 2009. *Minorities at Risk Dataset.* College Park, MD: Center for International Development and Conflict Management. Retrieved from http://www.mar.umd.edu/ on: October 1, 2019.

Mosse, George L. 1979. "National Cemeteries and National Revival: The Cult of the Fallen Soldiers in Germany." *Journal of Contemporary History* 14(1):1–20.

Mosse, George L. 1991. *Fallen Soldiers: Reshaping the Memory of the World Wars.* Oxford, UK: Oxford University Press.

Most, Benjamin A. and Harvey Starr. 1980. "Diffusion, Reinforcement, Geopolitics, and the Spread of War." *American Political Science Review* 74(4):932–946.

Mueller, John E. 1970. "Presidential Popularity from Truman to Johnson." *American Political Science Review* 64(01):18–34.

Muller, Edward N. and Erich Weede. 1998. "Rebellion, Violence and Revolution: A Rational Choice Perspective." *Journal of Peace Research* 35:43–59.

Murdoch, James C. and Todd Sandler. 2002. "Economic Growth, Civil Wars, and Spatial Spillovers." *Journal of Conflict Resolution* 46(1):91–110.

Phillips, Brian J. 2015. "Civil War, Spillover and Neighbors' Military Spending." *Conflict Management and Peace Science* 32(4):425–442.

Posner, Daniel N. 2004. "Measuring Ethnic Fractionalization in Africa." *American Journal of Political Science* 48(4):849–863.

Rabasa, Angel, John Gordon, Peter Chalk, Audra K. Grant, K. Scott McMahon, Stephanie Pezard, Caroline Reilly, David Ucko and S. Rebecca Zimmerman. 2011. The Tuareg Insurgency in Mali, 2006-2009. In *From Insurgency to Stability, Volume II*. Santa Monica, CA: RAND Corporation pp. 117–156.

Raleigh, Clionadh and Håvard Hegre. 2009. "Population Size, Concentration, and Civil War: A Geographically Disaggregated Analysis." *Political Geography* 28(4):224–238.

Regan, Patrick M. and Errol A. Henderson. 2002. "Democracy, Threats, and Political Repression in Developing Countries: Are Democracies Internally Less Violent?" *Third World Quarterly* 23(1):119–136.

Reynal-Querol, Marta. 2002. "Ethnicity, Political Systems, and Civil Wars." *Journal of Conflict Resolution* 46(1):29–54.

Roeder, Philip G. 2001. "Ethnolinguistic Fractionalization (ELF) Indices, 1961." http://pages.ucsd.edu/~proeder/elf.htm (October 15, 2018) .

Saideman, Stephen and R. William Ayres. 2000. "Determining the Causes of Irredentism: Logit Analyses of Minorities at Risk Data from the 1980s and 1990s." *Journal of Politics* 62(4):1126–1144.

Salehyan, Idean. 2007. "Transnational Rebels: Neighboring States as Sanctuary for Rebel Groups." *World Politics* 59(02):217–242.

Salehyan, Idean. 2008. "The Externalities of Civil Strife: Refugees as a Source of International Conflict." *American Journal of Political Science* 52(4):787–801.

Salehyan, Idean and Kristian Skrede Gleditsch. 2006. "Refugees and the Spread of Civil War." *International Organization* 60:335–366.

Sambanis, Nicholas. 2001. "Do Ethnic and Nonethnic Civil Wars Have the Same Causes? A Theoretical and Empirical Inquiry." *Journal of Conflict Resolution* 45:259–282.

Sambanis, Nicholas. 2004. "What is a Civil War? Conceptual and Empirical Complexities." *Journal of Conflict Resolution* 48:814–858.

Sarkees, Meredith Reid and Frank Wayman. 2010. *Resort to War: 1816-2007*. CQ Press.

Scarritt, James R. and Shaheen Mozaffar. 1999. "The Specification of Ethnic Cleavages and Ethnopolitical Groups for the Analysis of Democratic Competition in Africa." *Nationalism and Ethnic Politics* 5:82–117.

Schultz, Kenneth A. 2001. *Democracy and Coercive Diplomacy*. Cambridge, UK: Cambridge University Press.

Siverson, Randolph M. and Harvey Starr. 1990. "Opportunity, Willingness, and the Diffusion of War." *American Political Science Review* 84(1):47–67.

Small, Melvin and David J. Singer. 1982. *Resort to Arms: International and Civil Wars*. Beverly Hills, CA: Sage.

Solingen, Etel. 2012. "Of Dominoes and Firewalls: The Domestic, Regional, and Global Politics of International Diffusion." *International Studies Quarterly* 56:631–644.

Themner, Lotta and Peter Wallensteen. 2013. "Armed Conflicts, 1946-2012." *Journal of Peace Research* 50(4):509–521.

Togo: 1960-Present. 2018. Dynamic Analysis of Dispute Management (DADM) Project at University of Central Arkansas.
URL: *http://uca.edu/politicalscience/dadm-project/sub-saharan-africa-region/togo-1960-present/*

Vanhanen, Tatu. 1999. "Domestic Ethnic Conflict and Ethnic Nepotism: A Comparative Analysis." *Journal of Peace Research* 36(1):55–74.

Volkan, Vamik D. 2011. "Transgenerational Transmissions and Chosen Traumas: An Aspect of Large-Group Identity." *Group Analysis* 34(1):79–97.

Ward, Michael D, Brian D Greenhill and Kristin M Bakke. 2010. "The Perils of Policy by P-value: Predicting Civil Conflicts." *Journal of Peace Research* 47(4):363–375.

Ward, Michael D. and Kristian Skrede Gleditsch. 2008. *Spatial Regression Models: Quantitative Applications in the Social Sciences*. Los Angeles, CA: Sage Publications.

Weidmann, Nils B. 2015. "Communication Networks and the Transnational Spread of Ethnic Conflict." *Journal of Peace Research* 52(3):285–296.

Weidmann, Nils B., Doreen Kuse and Kristian Skrede Gleditsch. 2010. "The Geography of the International System: The CShapes Datset." *International Interactions* 36(1):86–106.

Wimmer, Andreas, Lars-Erik Cederman and Brian Min. 2009. "Ethnic Politics and Armed Conflict: A Configurational Analysis of a New Global Dataset." *American Sociological Review* 74(2):316–337.

Wood, Elisabeth Jean. 2008. "The Social Processes of Civil War: The Wartime Transformation of Social Networks." *Annual Review of Political Science* 11(1):539–561.

Wright, Thomas C. 2001. *Latin American in the Era of the Cuban Revolution*. Westport, CT: Praeger Publishers.