Politics Among Rebels: The Causes and Consequences of Division within Dissident Movements

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1 Introduction

Theories of civil war tend to focus on individual- or group-level motives (e.g. Gurr 1970; Collier and Hoeffler 2004) or opportunities (e.g. Fearon and Laitin 2003) for rebellion, while giving little attention to the organization of dissent into rebel groups. Even those studies which do explicitly consider rebel group formation tend to focus on group attributes and do not consider the possibility that multiple groups might emerge (e.g. Weinstein 2007). Yet, this step in the conflict process is far from straightforward, as 44% of civil conflicts feature at least two rebel groups challenging the government.[1] Over the course of the Chadian Civil War, for instance, 25 distinct rebel groups fought against the government. Conflicts in Afghanistan in the 1980's, Sudan in the 2000's, and Somalia in the 1990's have been similarly complex. Depending on the data source one uses, the ongoing civil war in Syria is contested by at least two dozen, and perhaps as many as 200 armed groups. Even ethnically homogeneous, geographically concentrated movements with common goals, such as the Karen secessionist campaign in Myanmar, often fragment into multiple rebel groups. The existing literature offers many useful insights to the conditions under which

[1] Source: Pettersson and Wallensteen (2015).

civil war will emerge, but it has few explanations of the organization of dissent into specific rebel groups.

While little attention has been given to the causes of multi-dyadic conflict, several studies suggest that such configurations can have deleterious consequences. Conflicts with multiple rebel groups last longer than dyadic competitions (Cunningham 2006; Cunningham, Gleditsch and Salehyan 2009; Akcinaroglu 2012). Cunningham, Gleditsch and Salehyan (2009) find that the presence of multiple government-rebel dyads decreases the likelihood of peace agreements and increases the likelihood of rebel victories, though Findley and Rudloff (2012), find that fragmented rebel movements are often associated with an *increased* likelihood of negotiated settlement. Relatedly, Atlas and Licklider (1999) find that episodes of conflict renewal often occur between formerly allied rebel factions. Finally, conflicts with multiple dyads feature more fatalities than dyadic ones.[2] Clearly, conflicts with multiple rebel groups comprise one of the most severe subsets of civil wars. Thus, understanding the causes of multi-dyadic conflict is of great normative and policy importance.

I seek to resolve this gap in the literature and enhance our understanding of multi-dyadic civil war by addressing two broad questions. First, why do some conflicts feature a multitude of rebel groups, while the majority are contested by just one? Second, how do the factors that shape rebel movements change over time? I argue that understanding the emergence of multiple rebel groups requires consideration of the broader network of dissidents in a conflict. A dissident group's relationships with others are a powerful determinant of its incentives to mobilize individually, or support the efforts of others.

This work extends and addresses a number of existing literatures. In recent years studies of conflict have employed analyses disaggregated on several dimensions, including by actor (e.g. Cunningham, Gleditsch and Salehyan 2009; Pearlman and Cunningham 2011;

[2]Source: my own analysis using data from (Sundberg 2008).

Fjelde and Nilsson 2012). Whereas the existing literature is primarily concerned with the fragmentation of existing actors, this study expands our understanding of multi-dyadic conflict by considering the entry of entirely new actors. Second, examining the relationships between rebel groups sheds new light on debates about the true motives behind rebellion (e.g. Collier and Hoeffler 2004). Finally, it extends the literature on civil war intervention to demonstrate new area in which outside actors can influence conflict — the structure of the warring parties.

I proceed with a more detailed discussion of this project's contributions to the existing literature. Subsequently, I articulate a theoretical framework that establishes the set of dissidents from which rebel groups emerge. Next I offer a theory relating the structure of this dissident network to the number of rebel groups that participate in a conflict, followed by a theory of what shapes the dissident network itself. After detailing a research design for testing these propositions, I provide two pilot studies. The first demonstrates the dissident network approach in the context of the Israel-Palestine conflict. The second uses a panel analysis to identify a link between international support, a factor that I argue is an important determinant of the evolution of the dissident network, and the formation of new rebel groups.

2 Theoretical and Empirical Contributions

As noted at the outset, the primary contribution of this project is to advance our understanding of the causes of multi-dyadic civil wars, a particularly devastating subset of conflict. Though few, if any studies address this phenomenon in its entirety, several literatures explain specific processes that can lead to multiple rebel groups. I first situate this work within those literatures, before discussing the broader contributions.

2.1 Fragmentation

While no existing studies offer a complete explanation for the variation in the number of actors participating in conflict, several works address a subset of the issue, usually focusing on the fragmentation of previously coherent groups. One subset of fragmentation studies suggests that government behavior plays a key role in the unity of dissident movements. For instance, McLauchlin and Pearlman (2012) find that government repression provides occasion for groups to evaluate their current leadership structure. Pre-existing divisions within groups are likely to be exacerbated, leading the group to move toward more factionalized leadership structures. When group members are satisfied, however, conflict tends to lead to even greater unity and centralization of authority. Similarly, Asal, Brown and Dalton (2012) find that groups with previously factionalized leadership structures are at much greater risk of splintering than groups with more consolidated governance. Whereas the preceding studies essentially treat government repression as exogenous to the internal politics of dissident groups, Bhavnani, Miodownik and Choi (2011) present evidence that governments deliberately stoke tensions among their opponents, as they find that the Israeli government increased conflict between Fatah and Hamas by undermining Hamas' control of the Gaza and by tolerating Fatah's relationship with the Jordanian military.

Another group of scholars emphasizes concerns about post-conflict bargaining as the key determinant of dissident group cohesion. Christia (2012) assumes that the winning coalition in a civil war receives private benefits, which might include any rents available to the state, or having some portion of its interests represented in the new government. Thus, rebels have an incentive to form coalitions that are at or only slightly above the minimum size needed to defeat the government, so as to maximize their share of the benefits. Wolford, Cunningham and Reed (2015) develop a similar logic, theorizing that political factions have an interest in joining conflicts so as to maximize the likelihood of their preferences being represented in the post-war government, but the value of fighting decreases as the

number of parties with whom they expect to share power increases. Yet, Christia (2012, Ch. 2) suggests that this incentive to minimize coalition size is moderated by the risk of being outside the winning coalition, as there is a strong possibility of new waves of violence between victorious rebels and rival rebel factions. She thus expects coalitions to change frequently in response to battlefield events, with factions bandwagoning with battle winners and shifting away from losing coalitions. Findley and Rudloff (2012) similarly find fragmentation to be most common among groups that have recently lost battles. This implies that fragmentation is essentially a process of weak actors becoming weaker.

A final category of explanations places the source of rebel group cohesion in underlying social structure. Staniland (2014) argues that insurgent organizations will be most stable when their central leadership is able to exercise both vertical control over its rank-and-file members, and horizontal control over its constituent groups. This is most likely to occur when insurgencies draw from existing organizations with extant social ties of this sort, which might include former anti-colonial movements or ethnic political parties. Organizations are likely to fragment when constituent groups have a high degree of autonomy or control over individual members is limited (Staniland 2014, Ch 2-3). Asal, Brown and Dalton (2012) emphasize similar factors, arguing that organizations with factionalized leadership structures are at risk of fragmentation, while groups with more consolidated power structures will tend to remain cohesive. Finally, Warren and Troy (2015) suggest that group size plays an important role, as small groups are able to police themselves and resolve conflicts, whereas larger groups are more likely to experience infighting.

Each of these studies makes an important contribution to our understanding of conflict complexity, and sheds light on the broader interests and organizational challenges present in rebel movements. Yet, while the fragmentation of existing groups accounts for a substantial portion of multi-dyadic conflicts, other processes are at work in the majority of cases. Indeed, only 26.6%[3] of the rebel groups that join ongoing civil wars splintered from an

[3]These figures are calculated using data on conflict participation from (Pettersson and Wallensteen 2015)

existing group, and only 9.7% are agglomerations of existing groups. Thus, nearly two-thirds of the groups that join conflicts[4] (only 20% of multi-dyadic conflicts have multiple rebel groups from the outset) do not appear to be the product of existing combatants reconfiguring, but rather are the result of an entirely new group of combatants entering the fray. I propose an integrated approach that accounts for both the fragmentation of existing groups, and the entry of new groups to the conflict.

2.2 Contagion

Few, if any, studies directly consider the phenomenon of new rebel groups joining ongoing conflicts. The literature on contagion is perhaps most relevant. Gleditsch (2007) finds that transnational ethnic groups and political and economic linkages between states can provide channels for civil war to spread across international boundaries. Other scholars find that secessionist (Ayres and Saideman 2000) and ethnic (Lane 2016) conflict often spread through processes of contagion, with the rebellion of one group seemingly inspiring those in neighboring areas to take up arms themselves. Such transnational processes might shape opportunities for multiple rebellions to emerge by increasing the availability of weapons, spreading tactical knowledge, or diverting government attention to foreign conflicts. Similarly, transnational motives for conflict may come in the form of grievances becoming clearer and more salient in light of events in neighboring countries, as happened during the Arab Spring, or the expected probability of a successful rebellion shifting upward in response to nearby events. Yet, rebel groups that are themselves transnational, operating in multiple countries (see Salehyan 2007) account for only 10.8% of conflict

and actor attributes from (Uppsala Conflict Data Program 2015). I code a conflict episode as a separate war if it occurs following at least two calendar years of inactivity. Secessionist movements are treated as separate conflicts from bids to overthrow the central government, and separate from each other if they concern different territories.

[4]The pattern is even more stark if one looks at conflict-years, as over 95% of conflict years with multiple government-rebel dyads include at least one rebel group that is neither a splinter organization nor the source of one.

joiners.

In short, while the literatures on group fragmentation and contagion provide important insights to the preferences and organizational needs of rebel groups, these processes only partially overlap with the phenomenon of multi-dyadic conflict.

2.3 Broader Contributions

This project also contributes to a number of larger discussions in the civil war literature. Both the theoretical arguments and empirical results presented here shed new light on a number of ongoing questions.

2.3.1 Collective Action in Civil War

First, I provide further evidence that the organization of rebellion is beset by collective action problems, and that the magnitude of these problems are conditional on the degree to which dissidents are networked with each other. The general existence of free riding problems in civil war has been the subject of debate among civil war scholars. In a rich contribution to civil war theory, Lichbach (1995) argues that the benefits of a successful rebellion are non-excludable, while the individuals who participate face substantial private risk. He concludes that successful rebellions are only likely to emerge when the individuals who participate are provided with private benefits, such as shares of revenues from natural resources or illicit activities. Wood (2003) similarly frames collective action as improbable given the personal risk involved, but finds that support for the insurgency in El Salvador was driven not by private benefits, but rather ideological and emotional commitment to the cause. Kalyvas and Kocher (2007) doubt the existence of collective action problems altogether, noting that in reality free riding is generally not an option. Often, individuals in war zones can choose only between facing a high risk of violence as a civilian, or as a rebel.

To gain leverage on this debate, I adopt the increasingly common perspective that incentives to engage in collective action are conditional on an individual (or group's) relationships with others. The core assumption of this approach is that many non-excludable goods can vary in character, meaning that some individuals will benefit from their existence more than others. In the case of civil war, this means that while overthrowing the government is a public good, the qualities of the new regime are chosen by those who participate in collective action, and may or may not be to the liking of those who free ride. This implies, then, that attractiveness of free riding relative to participating in collective action dependents on who else is participating. Actors should thus prefer to free ride when actors nearby in their social network (assuming networks capture the relevant aspects of interest) have mobilized, and have incentive to engage in collective action when similar actors have not done so (Bramoullé and Kranton 2007). Metternich et al. (2013) apply this perspective to civil war, finding that the level of contribution to public goods (violence against the government) increases as the network of anti-government groups becomes less tightly connected. I extend this literature to show that a dissident group's choice between non-violent and violent tactics is conditional on the closeness of its relationships with other dissident groups. This indicates that in contrast to Kalyvas and Kocher (2007), free riding is possible in civil war, at least at the group level. Additionally, it suggests that ideological similarity can work against collective action, whereas Wood (2003) finds it to be a key force in motivating it.

Evidence that a dissident group's decision to participate in violence in interdependent with the decisions of others also has consequences far beyond the collective action literature. Most theories of civil war concern the decision to resort to violence, yet few account for such interdependencies. For instance, a number of scholars model rebellion as emerging out of escalatory interactions between a government and protest movement, with the government's use of repression being the primary determinant of outcomes (e.g. Lichbach 1987; Moore 1998). Yet, the willingness of protesters to escalate to more risky tactics is

likely dependent on whether other groups have already resorted to violence. Similarly, the grievance model of civil war (Collier and Hoeffler 2004) emphasizes poor economic performance as a motive for rebellion, yet these concerns are likely to be broadly shared and thus particularly susceptible to free riding. Conversely, an ethnic considering violent mobilization in response to horizontal inequalities (see Gurr 1970; Cederman, Wimmer and Min 2010) would likely not be influenced by the strategies of other ethnic groups, as they are pursuing more particularistic benefits.

2.3.2 Rebel Motives

An examination of the relationships between dissident groups is also likely to offer a new perspective on rebel motives. For the last 15 years, the literature on civil war has largely been dominated by debates over whether rebellion is fundamentally political, or done in pursuit of private benefits. The former views civil war as an effort to resolve economic or political inequality (Gurr 1970; Wood 2003; Cederman, Wimmer and Min 2010), and has been labeled as the "grievance" hypothesis (Collier and Hoeffler 2004). The latter is composed primarily of studies emphasizing the "greed" hypothesis (Collier and Hoeffler 2004), which view rebellion as little more than large-scale criminal activity aimed at bringing profits to its members (Mueller 2000; Lujala, Gleditsch and Gilmore 2005; Ross 2004). Others have emphasized non-material private benefits as motive for individual participation in rebellion, such as the ability to act on family disputes or romantic rivalries (Kalyvas 2006).

This political-private motive debate has yet to be definitively resolved. A number of scholars have found greater support for the greed hypothesis than for grievance, with the presence of natural resources being a stronger predictor of civil war than economic or political grievances (Collier and Hoeffler 2004). Yet, these findings are not robust across different types of resources or even different measures of the same resource (Dixon 2009).

Furthermore, several scholars have found that political factors such as hierarchical relationships between ethnic groups (Cederman, Wimmer and Min 2010) and poor economic performance (Miguel, Satyanath and Sergenti 2004) exert a strong influence on civil war onset. Other scholars eschew the dichotomy altogether, suggesting that while private benefits are useful to rebel recruiting efforts, this does not preclude the possibility that rebel elites ultimately have political motives (Lichbach 1995; Weinstein 2007). Similarly, Lujala (2010) finds that natural resources are associated with longer conflicts, implying that at least a portion of resource revenues are devoted to fighting rather than private benefits.

One factor that has limited progress on these questions of motive is the fact that the competing theories have been tested almost exclusively on a single outcome — a binary measure of the occurrence of civil war at the national level. Studying the relationships between dissident groups and how they vary is likely to provide insight to underlying rebel motives. For instance, if rebellion is fundamentally about maximizing the profits of its members, the structure of rebel movements should be shaped largely by the natural resources present in a country. As many of the extraction of many of the resources thought to be associated with rebellion is not particularly labor-intensive (for instance, the extraction of alluvial diamonds from river beds), rebels should prefer to keep their groups small so as to maximize the share of profits given to each individual member. In resource-rich areas, we should see highly fragmented rebel movements. Furthermore, the use of violence in such a scenario is likely to be aimed at acquiring and defending access to resources, and if anything is more likely if other groups have adopted violent tactics. If rebellion is a political enterprise, by contrast, there should be possibilities for coalition building and cooperation between rebels, as the primary concern is maximizing the likelihood of defeating the government. Yet, there is also a possibility for free riding, suggesting the decision to resort to violence is interdependent in the direction of becoming less likely as other groups mobilize.

2.3.3 Civil Wars and International Context

Finally, this project advances our understanding of the relationship between civil war and international politics. Evidence that localized international factors influence civil war is abundant. A country's risk of civil war is determined in part by the regime types of neighboring states, the presence of transnational ethnic group, and the occurrence of conflict nearby (Gleditsch 2007). Many rebel groups operate transnationally, directly spreading the risk of violence (Salehyan 2007). Deliberate actions by outside states also have powerful effects on the attributes of civil wars. Civil wars with third party intervention tend to last longer than those without (Balch-Lindsay and Enterline 2000; Regan 2002), particularly when both sides receive support. Yet, the mechanisms by which outside intervention influences the conflict process are poorly understood. Prior studies assumed dyadic competition between a government and single rebel group, and suggested that capability enhancement was primarily responsible for the relationship. While that is certainly a key component of the story, this study suggests that external actors can influence the structure of dissidents as well. This has significant implications for conflict management, as it suggests that persuading outside states to end their involvement in a conflict will be insufficient for its resolution, as intervention may also increase the complexity of the underlying conflict.

The findings here also offer clues to the logic of intervention by outside states. While the determinants of intervention primarily aimed at pacifying conflict have received considerable attention (e.g. Regan 2000), few studies examine the conditions under which more self-interested intervention occurs. The finding that external support tends to produce "spillover" effects whereby the network of dissidents within a conflict begins to resemble the network of supporters provides further support for the notion that support is often given through a proxy war logic (see Salehyan 2010). I then extend that line of thinking to examine the effects of external support on patterns of violence.

3 Theoretical Framework: The Dissident Network

I conceptualize dissidents during periods of civil unrest as comprising a network (for similar approaches, see Zwerman and Steinhoff 2005; Metternich et al. 2013). The nodes of this network are comprised of various organizations, and might include rebel groups, political parties, labor unions, student organizations, ethnic militias, opposition media outlets, and shadow institutions. While I am primarily interested in groups with some willingness to use violence, nonviolent groups also require consideration as they may play important roles in shaping opportunities for violent groups, and their existence may signal the presence of a latent violent group. For instance, an opposition newspaper is highly unlikely to engage in violence itself, but if it expresses negative views of existing rebel groups, this might indicate broader demand for a new rebel group representing different interests. For illustrative purposes, the member organizations of the Palestinian dissident movement are described in Table 1.[5] One can see that there are a number of political parties and militant groups with diverse ideologies. Several governing institutions associated with the Palestinian Authority are also included as they exhibit hostility toward the Israeli government. Similar governing institutions are common among separatist movements, and rare among other dissident movements. While they are unlikely to engage in violence themselves, their inclusion in the network is important as they may play important roles in mediating the relationships between other actors.

The cohesion and integration of the dissident network can vary greatly both across countries and over time. At one extreme, some secessionist movements are represented by a single group exercising tight control over both political and military affairs. At the other, dissidents living under a repressive regime might be unable to organize and be little more than a collection of like-minded individuals. Most cases lie somewhere between, with dissidents split into several organizations that may at times engage in significant

[5]The network is defined using the criteria described in the research design section below.

cooperation, but remain formally separate. In the Palestinian case, for example, Hamas and Fatah co-existed as members of the Palestinian Authority for a time, but became sharply divided following the death of Yasser Arafat in 2004.

In any case, the dissident network has a common interest in obtaining political change, which generally creates an incentive for cooperation. Only in rare cases will a single element of the dissident network be strong enough to defeat the government on its own. At the opposite extreme are cases in which even the totality of dissident capabilities are not enough to defeat the government. Often, however, cooperation between different elements of the dissident network should lead to meaningful improvements in the odds of achieving political change. For instance, a pair of rebel groups may be weaker than the government forces individually, but in combination would have the advantage. Even if forming a coalition does not give dissidents enough strength to topple the government, it may enhance their leverage in a negotiated settlement. Despite this common interest, however, dissidents often fail to cooperate. In the remainder of this section I explore the ways in which dissident interests diverge, presenting a barrier to cooperation.

While dissidents share a common interest in removing the incumbent government, they do not necessarily agree on much else. Some dissidents may prefer that a new government emphasize or favor a certain ethnic or religious identity. This is especially common among groups pursuing secession or regional autonomy, which are nearly always based on particular identities. Yet, even within potential secessionist regions, some dissidents may prefer to reform the central government rather than secede from it. Bids to overthrow the central government can also emphasize one identity group at the expense of others. Dissidents who do not share this identity would oppose such an outcome. For example, Ansar al-Islam sought to restore Sunni dominance in Iraq and was opposed by Shi'a militias such as the Mahdi Army. The dimensions of identity on which dissidents mobilize is also dynamic in some cases. The Arakan separatists in Myanmar share an ethnic identity, but

Group Name	Description
Palestinian Liberation Organization	Originally a violent insurgent group, now recognized as representative of Palestinian people in negotiations, IGOs
Fatah	Secular, relatively moderate political party
Tanzim	Militant wing of Fatah
al-Aqsa Martyrs' Brigades	Militant group with close ties to Fatah
Islamic Jihad	Political wing of radical Islamist insurgent/terrorist group
Al-Quds Brigades	Militant wing of Islamic Jihad
Hamas	Hardliner party that opposes two-state solution, moderate emphasis on Islam
Izz ad-Din al-Qassam Brigades	Militant wing of Hamas
Popular Front for the Liberation of Palestine	Leninist organization that opposes two-state solution
Democratic Front for the Liberation of Palestine	More moderate Leninst organization
Palestinian Legislative Council	Legislature of Palestinian Authority, 1996–2007
Palestinian Preventive Security Agency	Security force of Palestinian Authority
WAFA	News agency of Palestinian Authority
Army of Islam	Radical Islamic group aimed at establishing caliphate in Palestinian territories

Table 1: The Palestinian Dissident Network, 1995–2014

Dimension	Conflict	Example
Ideology	Vision for new government	Free Syrian Army vs. Al-Nusra Front (Syria): secular vs. Jihadist
Identity	Religious / ethnic divides	Arakan separatists (Burma): Muslim vs. Buddhist
Bargaining Orientation	Hardliners vs. moderates	Hamas vs. Fatah (Palestine): acceptance of two state solution vs. not

Table 2: Potential Divisions in the Dissident Network

are divided into factions along Muslim-Buddhist lines. Dissidents can also be divided by geography, class, or sector. Rural dissidents might make land reform their top priority in a post-war government, whereas urban dissidents might care more about welfare or modernization programs. Some dissidents hope to take control of a government with strong centralized authority, while others hope to procure greater regional autonomy as a consequence of the war. Broader left-right ideological divisions may also be present. Even when dissidents largely agree on goals, there are likely to be divisions between hardliners and moderates, who will be more willing to accept compromises and less willing to adopt extreme tactics. Finally, even dissidents who largely agree on questions of policy will still find themselves in competition over the power and private benefits of government (Christia 2012), which are subject to rival consumption.

3.1 Dissident Preferences

Dissidents face a choice between pursuing their interests through peaceful strategies, or resorting to violence. I argue that this calculation is shaped by two underlying preferences, which then interact with features of the dissident network and the broader conflict environment. First, dissidents should prefer an outcome that is as close as possible to their ideal vision of a new government. While a dissident faction might find some benefit if a group with very different priorities succeeding in overthrowing the government, *ceteris paribus* such an outcome is likely to be inferior to overthrowing the government themselves

and prioritizing their own interests. For example, a communist insurgency would experience only modest benefit if other rebels established a new democratic regime in which communists are unlikely to attract significant electoral support. A group hoping to replace a monarchical regime in the Arabian Peninsula with an Islamist one would similarly find little satisfaction if another group succeeded in establishing a military regime. Thus there is a general incentive for dissident factions to mobilize separately any time their interests are not well-represented by existing violent groups.

This incentive is undercut, however, by the second preference. Dissidents should prefer to minimize the costs of advocating for their position. Violent mobilization brings the obvious risk of death or injury on the battlefield, as well as the possibility of harsh punishment if the rebellion fails. In some cases joining a rebellion is also subject to high opportunity costs, if participation in the normal economy remains a possibility or a rebellion prevents one from defend their family. Thus, the free rider problem that has been widely discussed at the individual level in the context of civil war (e.g. Lichbach 1995; Wood 2003) is likely to apply at the group level as well. Dissident factions must weigh the value of pursuing their specific set of interests against the costs of mobilization. The value of separate mobilization is likely to be positive only when a group's interests are substantially different from those of groups that have already mobilized.

3.2 Rebel Movements

Ultimately, a subset of the dissident network may elect to resort to violence. The groups that do so form a rebel movement in parallel to the dissident network. Like the dissident network, rebel movements can vary greatly in structure. In some cases only one dissident organization resorts to violence, resulting in a single, relatively cohesive group. In other cases a single rebel group may form, but encompass several dissident factions. Such groups are likely to have internal divisions and face relatively high risk of fragmentation. It is

also possible for multiple groups of either type to emerge. Rebel movement structure is also likely to vary over time within specific conflicts. Few conflicts have multiple rebel groups in their first year, yet more than 40% have multiple rebel groups at some point. The structure of rebel movements can be altered through several processes, which I outline in the remainder of this section.

3.2.1 Fragmentation

Ideological divides can occur both between separate groups and within a single group. In the former case, a dissident network might include both a radical left student group and a center left labor union. In the latter, a self-determination movement might include members who will accept nothing short of independence, as well as members willing to settle for increased regional autonomy. Ideological divisions between already-separate groups create the possibility that each will engage in violent mobilize separately, rather than forming a single rebel group. Divisions within a single group create the possibility that the group will fragment into multiple successor organizations.

Dissident group members who disagree with their leadership's position on important issues face a difficult choice. Forming a new organization from components of an existing one avoids many of the challenges of building a rebel group from scratch. Whereas new groups must convince recruits to take extraordinary risk in joining the conflict (Lichbach 1995), splinter organizations can recruit from a pool of individuals already participating in the war. Relatedly, rather than having to draw recruits from disparate parts of society, a potential splinter organization may have a well-defined support base within the parent organization. For instance, if a rebel group fractures along religious lines, the recruiting pool for the splinter organization is quite clear. Finally, a splinter organization may be able to retain control of some of the parent group's resources. If the group procures resources through collaboration with civilians, the individual members involved may be able to

continue their relationships with the new organization. Similarly, if a faction of a rebel group controls a segment of the resource extraction process, they might continue to do so under a new organization.

Yet, fragmentation also carries significant risk. The parent organization may engage in reprisals against the splinter organization, hoping to deter further fragmentation. Even if the resulting organizations do not fight, each is weaker and thus less likely to succeed than they were before. In some cases control of a group's resource base is highly centralized, and unlikely to be co-opted by a splinter organization. This might be the case for groups involved in sophisticated resource extraction, such as oil extraction or drug smuggling. Given these dangers, members of existing groups should be risk-averse. In most cases a significant ideological difference or identity-based schism will is required to motivate fragmenting. This effect is contingent on the portability of the existing group's resource base, however. When members can expect to enjoy the same level of resources in a new group, the threshold needed to motivate fragmentation is much lower.

3.2.2 Expansion

Fragmentation is not the only path to multiple rebel groups. When there are divisions between an existing rebel group and other elements of the dissident network, new groups may enter the conflict. Differing political goals create an incentive for dissident factions to mobilize separately (Wolford, Cunningham and Reed 2015), expanding the conflict. The value of doing so, however, is diminished by several factors. First, as the number of factions with whom a group would have to share power increases, the value of separate mobilization becomes less likely to outweigh the costs of fighting (Christia 2012; Wolford, Cunningham and Reed 2015). Second, as the probability of being in the winning coalition decreases, the value of mobilizing separately rather than participating in a coalition decreases (Christia 2012). Finally, as the magnitude of ideological differences decreases, the value of mobilizing

separately rather than free riding off of other groups diminishes (Lichbach 1995; Metternich et al. 2013). Still, there will be some situations where the preferences of one faction are sufficiently different from existing rebel groups that they have incentive to enter the conflict independently.

Like fragmentation, entering an ongoing conflict is in many ways easier than initiating a conflict during a condition of peace. First, joining a conflict generally occurs in a sharply differing environment than conflict initiation. Initial decisions to launch a rebellion tend to occur amidst some amount of unrest, such as protests or riots, economic turmoil, or conflict in neighboring states. Nevertheless, the decision to initiate a war by definition does not occur during times of outright war, whereas joining decisions generally do.[6] The barriers to entry for a new rebel group are likely to be lower during an ongoing conflict than during peace. While poor economic performance is associated with conflict onset (Collier and Hoeffler 2004), recruiting rebels to initiate a war requires individuals to exit an economy that is at least somewhat functional. During times of war, however, economic activity reduces dramatically (Collier 1999). Thus, the opportunity cost of joining a rebellion is likely to be much lower when a war has already begun. Similarly, while the risk of personal harm makes participation in rebellion more costly than non-participation before a war has begun, once fighting has initiated rebellion becomes relatively less costly as civilians face a high probability of experiencing violence. In fact, in some cases joining a rebel group may be safer than remaining neutral (Kalyvas and Kocher 2007). Finally, whereas the initial formation of a rebellion brings high risks of repression and arrest, once a civil war has begun the government is likely to be preoccupied with the existing group, creating opportunities for new groups to form with relatively little resistance.

In short, the costs of forming a new rebel group during a conflict should be less than the costs of splintering from an existing one. Whereas splintering requires dissidents to leave

[6]This distinction may not hold in the case that civil war violence is highly localized, leaving some areas mostly unaffected by the fighting.

a group that has already organized and may be supplying them with some form of private benefits with the lurking threat of reprisal, the decision to join a conflict is weighed against the value of being a civilian in wartime. Thus in many cases, relatively small ideological differences should be enough to motivate a group to enter an ongoing conflict, and the phenomenon should be more common than fragmentation.

3.2.3 Consolidation

Finally, in some cases rebel movements become less, rather than more complex. There are numerous examples of previously independent rebel groups merging to form a new umbrella organization. For instance, the United Islamic Front for the Salvation of Afghanistan, commonly known as the Northern Alliance, was an amalgamation of several groups including Jam'iyyat-i Islami-yi Afghanistan and Eastern Shura created in 1996 to oppose the Taliban. Consolidation generally occurs after rebel groups have spent some amount of time operating independently. This suggests that the groups either saw value in mobilizing separately, perhaps due to differing interests, or they originated in different geographic areas. The decision to consolidate is thus likely endogenous to conflict dynamics. If over the course of the war dissident interests evolve or are revealed to be similar to one another, they may elect to form an alliance out of a burden-sharing logic (Sandler and Forbes 1980). In other cases, however, alliance formation may reflect a capability aggregation logic. In the Northen Alliance example, member groups merged in response to the strength of the Taliban, which made the prospects of achieving success while mobilizing individually appear grim.

4 Dissident Network Structure and Patterns of Violence

I argue that the structure of the dissident network should be a powerful determinant of the structure of rebel movements. Network ties should tend to capture the similarity of dissident interests, the crucial determinant of whether free rider incentives outweigh the value of mobilization for individual dissident groups. Additionally, in some cases networks indicate the existence of deeper social ties, which promote cohesion within rebel movements.

4.1 Network Ties as a Measure of Preference Similarity

A core assumption of this analysis is that the networked relationship between dissident groups captures the similarity (or dissimilarity) of their preferences (a similar assumption is made by Metternich et al. 2013). This should be the case first because social networks in general tend to exhibit a high degree of homophily, meaning that the individuals or groups comprising the network nodes tend to form relationships on the basis of social similarity. For instance, individuals tend to form networks of friends with whom they share common race, age, religion, educational background, and ideological views (Mcpherson, Smith-Lovin and Cook 2001). Among dissident organizations, homophily is likely to take the form of similar ideological views, ethnicity, religion, and tactical preferences. I code network ties between dissidents whenever they are involved in verbal or material cooperation events,[7] such as verbal endorsement of another group's goals, or collaboration on the battlefield. Cooperation of this sort should be likely to occur among groups with similar interests, and unlikely to occur among dissimilar groups. Furthermore, it is important to note that these ties are defined in this study entirely by the behavior of the dissidents themselves. Thus, network ties should be shaped primarily by the factors that the actors themselves consider to be important dividing lines in the conflict. In an ideological conflict, dissidents are likely

[7] This procedure is discussed in greater detail in the research design section below.

to have close ties with groups holding similar beliefs, and weak or non-existent ties with groups with strongly differing beliefs. In conflicts where ascriptive identities play a central role, network structure is likely to reflect the key dividing lines. Thus, while I cannot make definitive claims about what precisely network ties represent, they should show a strong tendency to capture the most relevant social cleavages in a given conflict.

Networks offer an advantage over alternative approaches to measuring dissident in their ability to capture preference dynamics. Civil wars are often quite long, and change substantially in character over time. For instance, early in the Syrian Civil War dissident groups largely cooperated in their fight against the regime of Bashar al-Assad, with the relatively secular Free Syrian Army often collaborating with Jabhat at-Nusra, an al-Qaeda affiliate.[8] In later years of the conflict, the rise in prominence of the conflict between the Islamic State and US-backed groups appears to have driven a split between secular groups hoping to maintain support from the US, and Islamist groups.[9] The divide between secular and Islamist organizations did not appear to significantly shape dissident relations early in the conflict, while subsequently serving as a primary basis of conflict among dissidents. Similarly, the divide between moderates willing to accept a compromise with the government and hardliners may not be relevant to dissident relations early in a conflict, while driving fragmentation in the later stages when negotiated settlements begin to be discussed. Dissident relations may be endogenous to other conflict dynamics as well, such as the level and form of government repression (McLauchlin and Pearlman 2012). These changes in dissident relations could not be easily captured by *ex ante* measures of dissident group ideology or preferences, whereas they are easily accounted for in a dynamic network approach.

[8]Weiss, Caleb. 2014. "Free Syrian Army continues to cooperate with the Al Nusrah Front, Islamic Front in southern Syria." `http://www.longwarjournal.org/archives/2014/10/free_syrian_army_continues_to.php`

[9]Cambanis, Thanassis. 2016. "The Syrian Revolution Against al Qaeda." `http://foreignpolicy.com/2016/03/29/the-syrian-revolution-against-al-qaeda-jabhat-al-nusra-fsa/`

4.2 Networks and Collective Action

A successful rebellion produces a public good in the form of a new regime. This fact has led many scholars to speculate that participation in civil war is subject to a free rider problem at both the individual (Lichbach 1995; Wood 2003; Bramoullé and Kranton 2007) and group (Metternich et al. 2013) levels. It is true that replacing a despised regime with a more palatable one brings a non-excludable benefit to all who share such an opinion. For instance, Burundian dissidents opposed to President Nkurunziza's bid for an unconstitutional third term would benefit equally regardless of whether they personally participated in his ouster. Similarly, a resident of the Basque region would enjoy the benefits of independence from Spain regardless of whether they joined the ETA secessionist organization. Furthermore, one might expect the free rider problem to be especially acute in civil war, as participation in rebellion is an especially risky form of contribution to a public good. Rebels face the possibility of death or injury on the battlefield, and after the war if they are unsuccessful. Non-participation may avoid these risks, though Kalyvas and Kocher (2007) note that civilians also face significant risk during civil wars. Lichbach (1995) concludes that collective action by dissidents is only likely if rebel groups offer private benefits such as revenues from natural resources or illicit activities to members. Wood (2003), by contrast, finds that strong ideological commitment was sufficient to motivate participation in the FMLN insurgency in El Salvador.

Yet, while the general occurrence of regime change is a non-excludable benefit for all dissidents, facets of the phenomenon create more private and rivalrous benefits. First, there is a distributional conflict over the precise character of the new regime (Metternich et al. 2013). The group(s) that are directly involved in the overthrow of an existing regime should tend to have disproportionate influence in shaping the new regime, though this may be contingent on the peace process. The new government will be most valuable to the former dissidents to whom it is closest it terms of ideology. For example, a communist

insurgency would find much less benefit from free riding on a group hoping to establish a democratic-capitalist regime than it would leading a successful revolution of its own. Second, the individuals who hold positions of power are likely to receive private benefits (Christia 2012; Wolford, Cunningham and Reed 2015). Individuals may have opportunities to engage in corruption and or rent-seeking behavior, perhaps by pocketing a cut of oil revenues. Power itself is also likely to carry much value for the individuals who hold it, allowing them to shape policy. Individuals who played major roles in defeating the government should often have an advantage in obtaining these positions, though this is not guaranteed to be the case if elections occur quickly after the war.

These more particularistic benefits should work in opposition to the free rider problem, with free riding becoming less attractive as one's ideological and social distance from other dissidents increases. Bramoullé, Kranton and Amours (2014) model an individual's optimal contribution to a public good as being interdependent with the efforts of those in its social network. They find that the aggregate level of effort contributed is determined solely by the lowest eigenvalue of the network, which corresponds to the general level of social cohesion or fragmentation observed. Large lowest eigenvalues represent tight networks, which tend to have equilibria in which most or all actors contribute small amounts of effort, hoping to free ride off of their many closely-related fellow players. Small lowest eigenvalues correspond to sparse networks, and tend to have equilibria in which many players give maximal efforts as they do not benefit from the effort of other players. Metternich et al. (2013) find empirical support for these results, showing that the aggregate level of anti-government violence produced by Thai dissidents decreases as the dissident network becomes more tightly connected.

While Metternich et al. (2013) show that the structure of the dissident network affects the amount of violence it produces, they do not analyze the number of groups contributing to this violence. When preference diversity overpowers free rider incentives, dissidents should

tend to form multiple rebel groups, rather than collaborate in a single, large group. Joining an existing group requires a dissident faction to navigate the internal politics of the group, winning influence for its priorities. Rebel groups tend to be either strongly hierarchical or lacking in institutions (Staniland 2014), making them either unwilling or unable to credibly promise to accommodate a new faction's demands. Joining a group temporarily, and later breaking away to pursue separate interests may be a solution to this problem, though such a strategy does not guarantee a seat at the table in peace negotiations. The alternative of separate mobilization, meanwhile, is often relatively attractive. Groups that establish a significant presence on the battlefield stand a good chance of being included in the post-war peace process. Participants in such negotiations can often wield significant influence, as any sufficiently large group can act as a veto player (Cunningham 2006). Although peace agreements that lack the involvement of some combatants are not uncommon, a rebel group that threatens to continue fighting can often exert significant leverage over those who wish to maximize the chances for peace. Even if a group is not able to secure its goals in peace negotiations, having already mobilized for violence, it retains the option of continuing to fight, including against other rebel groups.

It should be noted that some scholars make the opposite prediction regarding network connectivity and collective action (e.g. Marwell, Oliver and Prahl 1988). Kuran (1991) expects dissidents to find strength in numbers, preferring to mobilize only when a sufficient number of like-minded individuals are also participating in collective action. Gould (1993) addresses network structure more explicitly, arguing that individuals who are tightly networked with people who are already participating in collective action will feel pressure to join as well, as they wish to avoid violating norms of fairness. Yet, it is not clear that such mechanisms translate from the individual level to the group level. For instance, while individuals are indeed likely to find strength in numbers, it is not necessarily the case that a rebel faction will find its security significantly enhanced by partnering with another rebel group. Similarly, individual-level norms against free riding (Gould 1993) may not operate

between groups.

In summary, I expect that dissidents will have an incentive to participate in conflict when their preferences differ substantially from those of existing violent groups. Given the frequently unaccommodating structure of many rebel groups, and the fact that decision rules in peace negotiations tend to grant considerable power to individual groups, dissidents should tend to form distinct rebel groups from dissidents with other preferences. When their preferences are similar to other dissidents, however, free riding is likely. As I argued at the outset of this section, the degree of preference similarity should be captured by the volume of network ties between dissident organizations. Networks with many ties should have similar interests, while networks with few ties should have more heterogeneous preferences.

H1: The number of rebel groups participating in a conflict should vary inversely with the density of ties in the broader dissident network.

The effect of networks can vary beyond the general level of connectivity. Two networks with the same total number of ties could have very different structures. For instance, ties could be evenly distributed across a network, with each node being tied to one or two other nodes. Alternatively, the ties could be heavily concentrated in one region of the network, with a densely connected community of ties, and many other nodes with few or no connections to other ties. In the former case, each member of the dissident network has limited ability to free ride, as they are connected to one or two other groups. In the latter case, free rider incentives are heterogeneous, as members of the tight cluster have great ability to free ride due to their many links to other groups, whereas the groups that share no connections with other nodes are completely unaffected by the behavior of other groups. Thus, it is necessary to account for clustering in addition to network density. The current measure of clustering most preferred by network analysts is modularity (Newman and Girvan 2004). This measure applies an algorithm to the network to sort nodes into

communities, returning the maximum number of communities detected in the process.

Modularity is a separate dimension of network structure from density — modular networks with low and high density of ties have different implications for free riding — and thus its effect should be modeled as an interaction with, rather than an alternative to density. At all levels of tie density, greater modularity should be associated with higher numbers of rebel groups. Modular, low-density networks are likely to have many nodes with few or no connections to others. Modular, high-density networks are characterized by clusters with many internal ties, but few ties between clusters. In this case free riding should be rampant due to the volume of ties, but as the number of other groups that any dissident is connected remains relatively small, more groups should mobilize than in cases where ties are evenly distributed. Thus, the interaction of dissident network density and modularity should have a positive relationship with the number of rebel groups that mobilize.

H2: The number of rebel groups participating in a conflict should vary positively with the interaction of density and modularity in the broader dissident network.

As assumption in the preceding discussion is that the possibility of participation in peace negotiations offers a strong incentive for dissident factions to participate in violence on an individual basis. This assumption is potentially testable, as it is often possible to identify periods in which negotiation is likely. The Integrated Crisis Early Warning System (ICEWS, described in greater detail in the research design section below) codes instances in which actors call on others to accept mediation, settle disputes, or de-escalate conflicts. If dissident factions mobilize independently to maximize their leverage in post-war bargaining, we might then expect the number of who are violently active to increase as calls to end the conflict increase.

H3: The number of rebel groups participating in a conflict should increase as calls for conflict resolution increase.

4.3 Networks and Social Context

While it is widely accepted that network structures tend to reflect ideological similarity, not all network ties are created equal. Some reflect nothing more than fleeting alignments of convenience. Even if the dissidents in such a coalition have some degree of shared interest, they are generally unlikely to have a long history of interpersonal connection and the level of trust that often accompanies it, nor are they likely to have strong institutions to cement the relationship. In other cases, however, deep social connections are embedded in networks. These might include family or clan ties, shared Church or Mosque membership, political party membership, or longstanding cooperation over agricultural work. When network structure reflects these sorts of ties, individual-level connections are likely, formal institutions often coordinate behavior, and informal institutions such as norms against shirking (Gould 1993) provide enforcement. Network ties with these attributes are likely to be both more stable and less likely to lead to free riding. Indeed, Staniland (2014) finds that the structure of the social networks from which insurgent movements emerge is a powerful determinant of both movement structure and stability.

I have limited ability to distinguish between the horizontal ties between elites and vertical ties between elites and local communities discussed by Staniland (2014), nor do I have the ability to observe the ties within existing organizations. Still, cases at either extreme — a high density of both horizontal and vertical ties, or an absence of both types of ties — are likely to be reflected in the structure of the networks I observe. Thus it is possible to test the proposition that the initial structure of the dissident network is disproportionately influential in shaping rebel movements relative to the structures that form later in the conflict. Following Staniland's logic, rebel groups that emerge out of tightly networked social structures should exhibit greater capacity to withstand internal divisions, as well as greater ability to co-opt smaller dissident groups. Thus, networks that are dense prior to the start of a conflict should lead to conflicts with fewer rebel groups

than conflicts that emerge out of looser dissident networks.

H4: The density of the dissident network at the beginning of a conflict should be inversely related to the number of rebel groups that participate in the conflict.

5 Outside Relationships and Dissident Network Dynamics

While the knowledge that there is a general relationship between dissident network structure and the number of rebel groups that emerge is useful, it also begs the question of what shapes the dissident network. Furthermore, what explains changes in the dissident network over time? I expect that relationships between dissidents and outside actors, and particularly support from outside states, play an important role in shaping relations between dissidents. In the remainder of this section I discuss three mechanisms by which outside relationships might affect the dissident network.

5.1 Signaling

While virtually all dissident coalitions are likely to contain some underlying ideological divisions, the contours of these differences are not always obvious at the start of a conflict. Dissidents organize initially on the basis of a shared desire to replace the government, and perhaps a few central grievances. Some organizations declare a comprehensive ideological platform from the start, including many communist and Islamist movements. Many, however, offer few clues to their preferences beyond removing the government or securing regional autonomy. For example, the Revolutionary United Front in Sierra Leone articulated few ideological positions or policy preferences, despite gaining control of the country's government for roughly a year. In some cases, rebel elites may even deliberately obfuscate their ideological leanings in hopes of co-opting as much of the dissident network as possible.

Even when some information about their preferences is available, the rebel coalitions that form initially may benefit from a "honeymoon effect." Such dynamics have been shown to imbue various social entities with a temporary boost in favorable views. For example, U.S. presidents tend to experience their highest approval ratings in their first few months in office (Erikson, Mackuen and Stimson 2002). Even some citizens who voted against the president seem to overlook their reasons for doing so and temporarily offer their approval. A similar logic suggests that newly democratized regimes may be better able to withstand economic crises than their more established counterparts (Bernhard, Reenock and Nordstrom 2003). We might then expect that opinion toward rebel groups exhibits similar patterns. In this line of thinking, new rebel groups receive considerable goodwill, perhaps as a reward for standing up to the government, or by offering a new and exciting direction for the country. Dissidents may overlook some of their disagreements with the rebel elite, projecting what they wish to see on the group. In the scenarios discussed thus far, rebels should enjoy strong support until or unless their true preferences begin to be revealed, clarifying to those with differing preferences that they are not well-represented by the group.

One process that may reduce uncertainty about dissident preferences is the procurement of support from outside states. External support tends to come from either a major power such as the US or USSR/Russia, or a neighboring state. While states often have ambiguous preferences regarding foreign civil wars, their broad alignments and values tend to be easily observable. Politically active individuals are likely to have opinions about such states, which will be ascribed to the non-state actors supported by said states. Actors that hold negative views of the supporting state are likely to adopt a less favorable view of their client states. Rebel groups may also be required to commit to certain positions or tactics in order to attract, or as a condition of, receiving support. For instance, a Syrian rebel group would be much more likely to receive support from the U.S. if it were to disavow jihadism.

In other situations the divisions among rebel groups may be well known prior to any outside involvement. This is especially likely among groups that have been previously active, or are comprised of pre-existing non-violent groups. Yet even in this scenario a rebel group may be able to achieve significant unity. This could be done through an institutional compromise, such as granting leadership positions to members of multiple factions. Alternatively, dissidents may simply agree to set aside their own differences until they have defeated the government. The addition of an outside state's interests may disrupt such equilibria. For example, the Karen National Union members share the goal of self-determination for the Karen people of Burma, but fragmented during the Cold War when some factions wished to pursue support from the US while others sought help from China.

In short, support from outside states should sow divisions among dissidents. In some cases outside support acts as a heuristic for dissidents assessing a rebel group's ideology and goals, making latent divisions more salient. In other cases outside intervention may deliberately manipulate a rebel group's alignments, creating tension. External support should thus promote the sorting of dissident networks into more ideologically homogeneous clusters. This places existing dissident coalitions at an increased risk of fragmentation, and can lead previously non-violent groups to enter the conflict, under a similar logic to fragmentation. Many factions of the dissident network may remain non-violent at the start of a conflict, assessing whether they can free ride off of existing groups. External support should tend to clarify the existing rebel group's positions, and increase the likelihood that members of the dissident network with substantially different preferences will mobilize. The preceding logic suggests that the effect of support should be fairly rapid, with updates to beliefs about group ideology coming immediately following the receipt of external support. While mobilizing support for a splinter organization and especially for the mobilization of an entirely new group may take time, the desire to do so should come quickly. Thus, we should expect the effect of external support to exhibit clear temporal patterns,

with increases in modularity (polarization) of the dissident network occurring shortly after the initiation of external support to one or more members.

H5: The modularity of the dissident network should tend to increase after existing groups receive support from outside actors.

5.1.1 Resource Distribution

Signaling dissident preferences is the only mechanism that might link relations with outside states to the structure of the dissident network. The resources that derive from external support may also shape relations between dissidents. External support is only likely to be given when the patron has its own agenda in a conflict. Providing support gives the patron leverage over its clients, and support may be contingent on assisting the patron in achieving its goals. For instance, the US has provided external support to numerous rebel and dissident organizations, at various times aimed at combating communism, the drug trade, or terrorism. A neighboring country to a civil war may offer support to combatants in hopes of supporting co-ethnics at the expense of other groups. In such cases, relations between dissident groups may again deteriorate when one or more groups receives external support, but in a process driven by the recipient group as a condition of receiving support, rather than in response to updated assessments of group goals.

External support may also change rebel behavior in more general ways. Salehyan, Siroky and Wood (2014) find that rebel groups with external support are significantly more likely to target civilians than those without. They suggest that as rebels become less dependent on the local population for material support, they become less constrained in dealing with them. Similarly, Weinstein (2007) finds that rebel groups with large natural resource endowments are likely brutalize civilians, while groups without are likely to collaborate with them. While patron states who care about human rights, such as democracies, have some ability to reign in their rebel agents, in the aggregate external support increases rebel

violence against civilians as even well-meaning supporters have difficulty enforcing their directives due to principal-agent problems (Salehyan, Siroky and Wood 2014).

This process creates a pathway through which external support can provoke division within a rebel movement that is distinct from the ideological mechanism discussed above. Resources from external patrons, civilians, and the natural environment are somewhat interchangeable from the standpoint of rebel leaders, as each provides the materials or revenue needed to fight a war. From the standpoint of rank-and-file group members, however, these resource bases are not equally valuable. Rebel groups that rely on natural resources for revenue often provide members with a share of the profits (Weinstein 2007). While the monetary value of civilian support may be comparatively lower, rebel soldiers are also likely share in many of the benefits such as food and shelter. External resources, by contrast, tend to be comprised largely of weapons, war materiel, and logistical support. Such resources may enhance a group's fighting capability, but provide fewer private benefits to individual members than natural resources or civilian support. It is likely that the receipt and distribution of external resources is more centralized compared to other resource bases. Thus, any private benefits that can be accrued from external support are likely to go disproportionately to rebel elites, and provide limited incentive for rebels to remain in the group.

While external support may bring few benefits to individual members, its behavioral consequences can provoke their opposition. Weinstein (2007) suggests that natural resources lead groups to victimize civilians from an early time in their history. By contrast, external support is not always present early in a group's existence, and often begins suddenly at a later date. Thus, many groups foster collaborative relationships with civilians prior to receiving external support. The decision to turn away from civilian collaboration as external resources flow in may not be unanimous for rebel groups. Rebel leaders or their external sponsors may order increased violence against civilians as a means of increasing

bargaining leverage (Downes 2006). For rebel soldiers, such an order may require them to turn on civilians with whom they had previously collaborated, and in some cases their family, neighbor, or co-ethnics. In such cases, a substantial portion of a rebel group's membership is likely to oppose the changes that accompany external support.

Civilian victimization can also increase the probability that new groups will join the conflict. As the level of violence against civilians increases, incentives for individual dissidents to free ride diminish (Kalyvas and Kocher 2007). As the level of safety associated remaining neutral in a conflict decreases, so does the relative risk of participating in rebellion. Yet, dissidents facing violence from existing rebel groups will likely prefer not to join their attackers. Instead, they should prefer to join different groups, or form new ones if none exist. Thus, rebel violence against civilians should lead to a general increase in the number of rebel groups, as it provides incentives for both the splintering of the group engaging in violence, and for the formation of new groups.

To disentangle the potential mechanisms linking external support to dissident network structure, I propose two hypotheses. First, the signaling mechanism implies that any relationship with outside actors, regardless of the level of material support provided, should act as a heuristic for evaluating a dissident group's ideology and goals. Thus, we should see little difference in the effects of verbal and material cooperation with outside actors.

H6: Material cooperation between dissident groups and outside actors should be more likely than verbal cooperation to increase the modularity of the dissident network.

Additionally, it is easily possible to test the proposition that the link between material support and changes in the dissident network is civilian victimization, as data civilian fatalities resulting from civil conflict are available for the post-Cold War era.

H7: The modularity of the dissident network should increase with the level of rebel violence against civilians.

5.1.2 International Network Spillover

The preceding hypotheses examine the effect of any external support on the dissident network. Yet, it is likely the case that the specific identify of the state or organization providing support conditions its effects. Furthermore, it is often the case that multiple outside states intervene in civil wars. The relationship between these outside actors is likely to shape the effects of support as well. To account for these dynamics, I extend the dissident network framework to include a parallel network of external actors. This network is made up of all actors from outside the state that interact with either a dissident organization or the government. It is important to account for actors that align with the government in the external network (whereas the government and pro-government actors are not included in the dissident network) as the presence or absence of such ties is likely to shed light on the motives of the actors supporting dissident organizations. When both the government and dissidents are receiving support, supporters may be acting on a proxy war logic, with goals that are aimed at each other as much as the particular conflict in which they are contending. Support that is more one-sided, by contrast, is more likely to have goals specific to the conflict. The structure of this external network is then defined by the level of conflict or cooperation between its members. One might find a highly polarized external network, with one cluster of states supporting the government and a rival cluster supporting the largest rebel faction. In other cases the network might be highly fragmented, with several states that lack close ties each supporting a different actor in the conflict. Occasionally, outside actors may form a tight network, intervening overwhelmingly on one side of the conflict.

The structure of the external actor network should influence the structure of the dissident network through a process of spillover. In social network theory, spillover is a process through which the structure or content (norms, tactics, events, etc.) of one network shape those of another through an overlap in membership, or ties between networks. It is essen-

tially a process of contagion through social ties. For instance, the U.S. peace movement adopted many of the tactics of the feminist movement in the 1980's, due at least in part to the considerable number of individuals who belonged to both (Meyer and Whittier 1994). Papachristos et al. (2015) show that individuals who share close social ties with gang members face an increased risk of being gunshot victims, regardless of whether they themselves are gang members. At the level of the international system, Maoz (2011) finds that the network of IGO memberships exhibits spillover effects on the network of alliance ties, with the latter tending to follow the structure of the former.

I expect a similar dynamic to occur between the external actor and dissident networks. While the two networks will have little or no overlap in membership,[10] there are often significant connections between dissidents and outside actors, creating opportunities for the external network to influence the dissident network.[11] As noted above, outside actors often provide material support to dissident groups. The recipient organization may be required to adopt the priorities of the donor, either as an explicit condition of receiving support, or by their own accord in hopes of attracting maximum support. As a result, the donor essentially leads the recipient groups to become a parallel node in the other network. Other outside actors may then decide to become involved in the conflict themselves, with their decision of whether to act and what group to support being contingent on their relationship with the initial donor. An outside state with close ties to the initial supporter may choose to free ride, or to contribute further resources to the same recipient group. An outside state with weak or negative ties to the initial supporter, however, is likely to support a different dissident group. As the recipient organization aligns with the donor, the dissident network begins to further mirror the polarized structure of the outside actor network. In conflicts where dissidents receive considerable external support, the dissident network should closely resemble the network of outside supporters.

[10]The only case in which they might is if a transnational organization such as al-Qaeda has a local presence in the dissident network, but also a broader international presence.

[11]The reverse is also possible, but beyond the scope of this project.

	DV	IV	Direction
H1	# rebel groups	dissident network density	$\downarrow$
H2	# rebel groups	dissident network density X modularity	$\uparrow$
H3	# rebel groups	calls for resolution	$\uparrow$
H4	# rebel groups	initial network density	$\downarrow$
H5	dissident network modularity	external support onset	$\uparrow$
H6	dissident network modularity	external material support	$>$ verbal support
H7	dissident network modularity	rebel violence against civilians	$\uparrow$
H8a	dissident network density	external network density	$\uparrow$
H8b	dissident network modularity	external network modularity	$\uparrow$

Table 3: Summary of Hypotheses

H8a: The lagged density of the external support network should have a positive relationship with the density of the dissident network.

H8b: The lagged modularity of the external support network should have a positive relationship with the modularity of the dissident network.

6 Research Design

6.1 Primary Data Source

Social network data is constructed from the Integrated Crisis Early Warning System (ICEWS) (Boschee et al. 2015; O'Brien 2010). ICEWS is a DARPA-funded initiative aimed at developing predictive models of both international and internal conflicts. The publicly available component of the project is an event data set covering the entire world for the period 1995–2014, with new data being released on a 12 month delay. The ICEWS data is machine-coded, using natural language processing[12] to identify politically relevant events described in news articles. ICEWS draws on 281 print media sources, including large news agencies such as *Agence France-Presse*, *BBC*, *Reuters*, and *The New York Times*, local newspapers from

[12]JABARI, a commercial variant of Phil Schrodt's Text Analysis By Augmented Replacement Instructions (TABARI) program (Schrodt 2011) is used to parse the articles.

a variety of countries including *Al Raya* (Qatar), *El Cronista* (Argentina), and *The Egyptian Gazette*, and a number of national news agencies. When necessary, articles are translated to English before being coded. The software parses the first half of articles to look for events, which are coded using the Conflict and Mediation Event Observation (CAMEO) coding scheme (Schrodt and Yilmaz 2007). The coding scheme captures several pieces of information in the form of "who did what to whom." CAMEO offers a major advantage over alternative datasets in that it includes a wide range of cooperative and conflictual behaviors, whereas most event data includes only conflict. Furthermore, it captures the direction of the event, whereas most event data does not distinguish between the initiator and target of an action. These attributes make it ideally suited to identifying network ties. Finally, CAMEO events are translated to the Goldstein Scale (Goldstein 1992), which places events on a continuous scale ranging from material conflict (-10 to -5), to verbal conflict (-5 to 0), to verbal cooperation (0 to 5), to material cooperation (5 to 10), allowing for easy summarization of relationships between actors.

ICEWS includes roughly 13.5 million events over the period 1995–2014, spanning 281 countries and territories. Importantly for this study, ICEWS is perhaps the only dataset that captures a significant number of interactions *between* rebel groups and other dissidents. Still, the dataset has several flaws and limitations. First, it covers a limited temporal domain. In fairness, this problem is common to most of the major events datasets, and ICEWS boasts a larger spatial domain than most of its competitors.[13] This problem could be addressed in part by employing a dataset that use the same coding scheme and covers the Levant for the period 1979–2015 (Schrodt 2015). Beyond this, however, the only options might be constructing networks from original data or building sparse networks from less granular conflict data such as the UCDP Dyad-Year data. Second, while the methodology of coding

[13]The ACLED data covers only Africa for the period 1997–2015, the SCAD data covers Africa and Central America for the period 1989–2014, and the UCDP GED data covers Africa, the Middle East and Asia for the period 1989–2014. Only the Cline Center's SPEED data offers significantly greater coverage, spanning the entire world for the period 1945–2014. Unfortunately, SPEED currently lacks sufficient detail to perform analyses disaggregated by actor.

events from news articles is very refined, procedures for identifying duplicate events resulting from a story being covered by multiple media outlets are lacking. This problem can be mostly resolved, however, by removing observations that have identical source and target actors, dates, and CAMEO interaction codes. Third, the project was originally intended to predict conflict onset at the country level, and is not ideally suited to being disaggregated by subnational actor. Whereas some datasets match events to a fixed universe of actors with unique identifiers, ICEWS provides the most precise names discernible from the source article. Often, this results in a level of granularity beyond what most scholars would prefer. For instance, the source actor in a verbal cooperation event might be listed as "George Habash" rather than the "Popular Front for the Liberation of Palestine." This sort of problem can be resolved by recoding individuals to their groups. More problematic are the underspecified cases in which actors receive generic names such as "Rebel" or "Insurgent," usually resulting from news reports that do not specify a specific actor. In approximately 25% of interactions between dissident groups, one or both actors are unidentified. It may be possible to develop a simple algorithm that identifies the group involved in unattributed events using the event date, spatial coordinates, target, and event type. Events that are classified with a high degree of certainty could then be recoded. For instance, an insurgent group operating in Northeastern Nigeria in 2014 could likely be classified as Boko Haram with a high degree of certainty. Alternatively, one could simply drop the unattributed cases and still be left with millions of observations. However, this will very likely introduce bias into the sample, with smaller groups being especially likely to be unidentified. Finally, ICEWS contains a few imbalances in sampling, with the few years having fewer events than subsequent years. However, beginning in the late 1990's the number of events per year is quite stable, with variation that is consistent with the level of conflict worldwide. ICEWS also oversamples countries that receive extensive coverage in English-language media. Any politically-relevant event in the Western World or East Asia is likely to be captured, while data in locales including most of Africa is comparatively sparse. It is crucial to note that this

sparseness is relative to itself in other countries, however, as ICEWS captures more events than any other dataset. While these imbalances are problematic for analyses involving the volume events, they are less concerning for the present application, which summarizes the character of events rather than their frequency.

6.2 Constructing the Dissident Network

In theory, one approach to measuring dissident interests would be to hand code groups on the basis of manifestos and public statements. Yet, this would require identifying not only the interests of rebel groups, but also those of *potential* rebel groups. Finding sufficient information on such groups across a variety of conflicts is unlikely. Furthermore, these groups are likely to be so great in number that coding data for each of them would be quite arduous. Networks have been used to measure interest similarity in a variety of contexts, including the US Congress (Andris et al. 2015).

To construct a dissident network from the ICEWS data, I draw heavily on the methodology of Metternich et al. (2013), but also depart from their approach in several ways. The first step in this process is identifying the dissident groups in a given country. While ICEWS provides a "sector" code providing a generic categorization of actors (e.g. rebel, terrorist, etc.), these codings lack a clear conceptual scheme and several thousand sector values appear in the data. Thus, I follow Metternich et al. (2013) in defining dissidents behaviorally. I code any group as a dissident any time it has more conflictual than cooperative interactions with the government in a period (i.e. the mean Goldstein score of its interactions with the government is less than zero). The group then remains in the dissident network until either it experiences a period of at least 18 months in which it does not appear in any events, or it experiences a period in which its interactions with the government are more cooperative than conflictual. This is a somewhat more permissive definition that that of Metternich et al. (2013), who remove groups from their anti-government networks after six months

of no conflictual interactions with the government. Yet, that approach likely excludes such actors as rebel groups that retreat to remote areas, or that agree to ceasefires without demobilizing. These groups very likely continue to be opposed to the government, and remain active as organizations, and thus belong in the dissident network. This approach identifies virtually all rebel groups and militias as dissidents, as well as many opposition political parties and NGOs, and a few opposition media organizations.

Once the nodes in the dissident network have been identified, it is necessary to define the ties between them. Whereas Metternich et al. (2013) code binary network ties between dissident groups whenever they have cooperative events in a period. Yet, this approach ignores a great deal of variation among actors with no cooperative relationship. Many of these dyads are groups that simply never interact. Yet these cases are treated in an identical manner to dissident dyads that are in conflict with one another. To capture this difference, I employ a signed network, with network ties taking a positive value when the mean Goldstein score for a period is positive (signifying a relationship that is more cooperative than conflictual), and a negative tie when the mean Goldstein score for a period is negative (signifying a relationship that is more conflictual than cooperative). Second, even if the cleavages between dissidents are likely to evolve over time, it is unlikely that such relationships change on a monthly basis. Additionally, for many dissident dyads, interactions are few and far between. Yet, the existence of cooperation in one month and the absence of any interaction the next is unlikely to be indicative of a real change in the underlying relationship. Thus, rather than redefining network ties each month, I use the most recent monthly average of interactions for which there is data, only coding the end of a relationship after 12 months of no interaction.

6.3 Constructing the External Support Network

The external support network is constructed using similar rules to the dissident network. Any outside state or organization that has interacted with at least one member of the dissident network in the past 18 months is included. Both cooperative and conflictual relationships with dissidents are likely to contain useful information about a dissidents group's underlying preferences, and thus both are included. As with the dissident network, ties within the external network are defined by the interactions captured by ICEWS. Outside actors that have more cooperative interactions than conflictual ones receive a positive tie, while actors that have more coflictual than cooperative relations receive a negative tie.

6.4 Case Selection

ICEWS covers many countries and periods that do not experience significant levels of civil conflict. While it captures many types of information not found in other datasets, ICEWS does not include information about fatalities, meaning that outside data is needed to define conflict periods using traditional fatality-based measures. I thus use the UCDP/PRIO Armed Conflict Data (Pettersson and Wallensteen 2015) to define the sample. UCDP codes a civil conflict as occurring in any year in which fighting between a non-state actor and the government produces at least 25 fatalities in a calendar year. 68 countries experienced a conflict meeting this threshold during the period 1995–2014, and there are 536 total country-years with conflict. The year prior to conflicts is included as well to calculate network attributes.

6.5 Dependent Variable

Number of Rebel Groups The dependent variable in this study is, the number of rebel groups active in a conflict. The measure is constructed from the ICEWS data after the

recodings of actor names discussed above has occurred. It consists of the number of non-state groups engaged in material conflict against the government in a given period (I plan to conduct analyses using both monthly and yearly data). Events falling into this category range from destruction of property to non-lethal assaults to suicide bombings to organized battles. This measure does not account for the emergence of new rebel groups; it simply counts the number of groups active against the government in a given year. It is easily possible to construct alternative specifications of this measure, for instance by including only lethal conflict events, or counting only groups that are involved in a certain number of conflict events. Setting the threshold at any material conflict with the government produces considerable variation. For instance, as many as nine Palestinian groups and as few as zero are engaged in violence against the Israeli government at various times, with the average falling between two and three.

Alternative Measures One potential criticism of using ICEWS to measure the number of rebel groups in a conflict is that it is largely dependent on media characterizations of which organizations should be treated as independent, and which are merely factions of larger groups. The UCDP Dyadic Conflict Data is human coded, and defines groups separate groups where an organization itself uses a separate name from other actors. A measure of the number of rebel groups present in a given period constructed from the UCDP data should therefore provide enhanced confidence in the validity of the results.

Given that the theory proposed above expects greater numbers of rebel groups to mobilize against the government as dissident preferences become more diverse, it may be useful as an alternative DV or as an extension to assess the network ties between the groups that participate in violence in a given period. For instance if the broader dissident network shows a low density of ties, indicating diverse interests, the emergence of multiple rebel groups would only be consistent with the theory if said groups were not closely networked. Accounting for the network connections between violent groups, perhaps by dividing the

number of groups by the level of connectivity (the proportion of actual ties relative to possible ties) would "penalize" the violent group count as the level of connectivity between them increases.

Dissident Network Density *H8a* predicts that the density of the dissident network will tend to reflect that of the external support network. This concept is captured by the edge density of the network, which is the total number of actual ties divided by the total number of possible ties.

Dissident Network Modularity *H8b* predicts that the modularity of the dissident network will tend to reflect that of the external support network. Measuring this concept first requires the application of a community detection algorithm to the network. I employ the walktrap algorithm, which begins by treating every network node as a separate community, then aggregates them based on a random walk over network ties. Modularity is the sum of the probability of a tie in the network actually falling in a cluster minus the probability of a tie falling into a cluster randomly. The modularity score under this method is the highest modularity value observed between the step in which every node is a community, and the entire network is a single community.

6.6 Explanatory Variables

Dissident Network Density *H1* predicts that the degree of connectivity of the dissident network will shape the structure of violence against the government.

Dissident Network Modularity *H2* predicts that modular networks, with two or more distinct "communities" of dissidents, should be especially likely to be produce multiple rebel groups.

Calls for Conflict Resolution *H3* argues that the logic of a dissident group engaging in violence individually is driven in part by the value of participation in the peace process.

It also suggests that calls for conflict resolution by actors within or outside the conflict may serve as a leading indicator that the peace process is likely to begin, providing an impetus for groups to mobilize. ICEWS captures many events in which an actor calls for a conflict to be resolved. The CAMEO coding scheme has separate codes for instances in which an actor calls on others to settle a dispute, to negotiate, and to accept mediation. Roughly 9,000 events of this type appear in the data.

External Network Density *H8a* predicts that through processes of spillover, the density of the external actor network should influence the density of the dissident network, with the latter increasing its resemblance to the former. I calculate a measure of the edge density for the external network in an equivalent manner as for the dissident network.

External Network Modularity *H8b* predicts that the modularity of the external network will spillover to the dissident network as well. Again the measure is calculated in an identical that of the dissident network.

6.7 Control Variables

Dissident Network Size While I expect the structure of the dissident network to shape mobilization patterns, it is also likely the case that larger networks produce more rebel groups. I therefore control for the number of nodes in the dissident network.

Conflict Intensity The number of active rebel groups is also likely tied to conflict dynamics. While it is unclear whether the number of rebel groups is a cause or consequence of conflict intensity, the two phenomenon appear to be related (Akcinaroglu 2012). First, I include a count of the total number of material conflict events between dissidents and the government captured in the ICEWS data. Second, as ICEWS does not include fatality counts, I include the total number fatalities resulting from fighting between the government and rebels, as measured by the UCDP Battle-Related Deaths Data (Sundberg 2008).

Politically-Relevant Ethnic Groups One factor that could lead dissidents to form multiple rebel groups instead of a single one is ethnic diversity. Numerous scholars have found that co-ethnics are able to cooperate effectively, while diverse groups often struggle to do so (e.g. Habyarimana et al. 2007). Beyond that, dissidents may simply have interests that are unique to their ethnic group, incentivizing mobilization along ethnic lines. I include a measure of the number of ethnic groups experiencing discrimination from the Ethnic Power Relations Data (Vogt et al. 2015), as well as the total number of politically-relevant ethnic groups.

Population One might imagine that the number of rebel groups is at least in part a function of the size of the country. This would be especially likely if some factor placed a constraint on the size of rebel groups, as might be the case if rebels sought to maximize shares of resource revenues. Thus, I include a measure of country population from the World Development Indicators (The World Bank 2015).

Area Similarly, countries with larger geographic areas might offer more opportunities for multiple rebel groups to operate. For instance, larger countries may have more natural resource deposits, or more rough terrain that provides a haven for insurgents (see Fearon and Laitin 2003). The data again come from the World Development Indicators.

Democracy Wolford, Cunningham and Reed (2015) find that democratic states tend to have more rebel groups than others. This might be the case as the interests of political groups are more easily identifiable in an open system, and individuals with similar interests are already organized into parties and interest groups. I include a binary indicator of whether the conflict-year occurs in a democratic state using data from the Polity IV project (Marshall, Jaggers and Gurr 2012).

Finally, the presence of natural resources may shape the structure of rebel movements. Weinstein (2007) finds that the attributes of individual rebel groups are powerfully shaped by whether they formed in the presence of natural resources, with groups that have

significant access to resources being more likely to abuse civilians. It may be that these sorts of groups are also more likely to invite challenges from other groups of dissidents. Alternatively, resources could create incentives for rebel groups to remain small, so as to maximize the share of resources distributed to each member. For these reasons, I control for the presence of a number of natural resources previously shown to be associated with conflict. Each of these measures is aggregated into a binary indicator of whether the resource is present in a country.

Secondary Diamonds: Diamonds are one of the most prominent forms of natural resources known to be used by rebel groups, including those in Sierra Leone and Angola. Secondary diamond deposits are those present on the earth's surface, and often found in river beds or rock formations. Whereas the extraction of primary diamonds requires sophisticated mining equipment, secondary diamonds are thought to be easily "lootable" by rebel groups, as their extraction requires only simple tools (Lujala, Gleditsch and Gilmore 2005). Geocoded data on secondary diamonds comes from the Diamond Dataset (Gilmore et al. 2005; Lujala, Gleditsch and Gilmore 2005). The data cover the entire world, and lists lootable diamond deposits in 40 countries, with 884 total deposits. Each of the resource variables is aggregated to a binary indicator of whether the resource is present in a country.

Gemstones: Precious gems other than diamonds are included in GEMDATA (Lujala 2008). The data includes 1,022 sites where gemstones have been discovered, spanning 53 countries. The gems included are: ruby, sapphire, emerald, aquamarine, heliodor, moganite, goshenite, nephrite, jadeite, lapis lazuli, opal, tourmaline, periodit, topaz, pearl, garnet, zircon, spinel, amber, and quartz.

Placer Gold: Placer gold is considered to be easily lootable, as it is found primarily in riverbeds and is easily extractable. The data comes from GOLDATA (Balestri 2012), and includes 550 locations with lootable gold in 48 countries.

Onshore Oil Deposits: Oil has also provided a source of financing for some rebel

groups, including the Islamic State in Iraq and Syria. PETRODATA (Lujala, Rød and Thieme 2007) lists 424 onshore geocoded oil deposits with known production in 85 countries.

Drugs: Numerous rebel groups procure funds by controlling the drug trade. DRUGDATA (Buhaug and Lujala 2005) provides geocoded polygons of areas in which the cultivation of coca bush, opium poppy, and cannabis are known to occur.

6.7.1 Models

To test my hypotheses, I follow an approach common among studies of network effects (e.g. Maoz 2011; Metternich et al. 2013; Papachristos et al. 2015) by using the network measures as covariates in standard regression models. Advantages of this approach over methods specific to network analysis are that it easily allows for the use of control variables, and it facilitates conventional hypothesis testing. Furthermore, I am ultimately interested in conflict-level outcomes separate from the dissident network, rather than group-level phenomena where the interdependence between units would require special consideration. The dependent variable for the first four hypotheses is the number of rebel groups active in a given period. As this is a count variable, poisson or negative binomial regression will be used. The dependent variables for the remaining six hypotheses are network attributes. Both network measures — edge density and modularity — are probabilities, and thus fractional probit regression is used.

For robustness, I also test the last six hypotheses using an exponential random graph model (ERGM). The ERGM approach recognizes that there is a certain amount of randomness in the formation of social networks. In this study for example, the presence of a cooperative tie between two groups in one month and the absence of one in the next is not necessarily indicative of a change in the underlying relationship. Instead, the two groups may not have interacted purely by chance. ERGM seeks to resolve this by treating any social network as one of many possible realizations. This allows the researcher to perform

statistical inference on a variable, testing whether it produces a different network structure than would emerge by chance.

6.8 Qualitative Case Studies

To bolster the evidence produced by the two quantitative analyses described above, I will conduct qualitative case studies of multiple rebel movements. The quantitative studies provide a greater level of disaggregation than many large-N studies of rebellion, but also lacks information about the rebel groups beyond their network connections. I am not able to speak to the effects of the size, structure, or history of the group. Furthermore, the quantitative studies do not capture any information about the individuals participating in the rebellion, nor the connections between them beyond those that occur through group membership. One might imagine that the relationship between two dissident faction varies greatly depending on whether their members lack any intergroup connections, or whether many connections in some other network, perhaps coming from the same village. Case studies can also address the limited temporal domain of the quantitative analyses, illuminating, for example, whether external support had different effects during the Cold War.

One set of cases that is likely to provide useful evidence are the separatist movements of Burma. 11 different groups have attempted to secede since the country became independent in 1948. Comparing separatist movements in the same country has the advantage of holding several factors constant. These groups have similar goals (aside from the specific territory involved), they are fighting against the same government, they share similar colonial histories, and they have been active in roughly the same time periods. Yet, they show significant variation on the dependent variable, with some movements such as the Kokang and Karenni producing a single violent group, while the Arakan movement has been represented by seven violent groups, and the Shan by eleven. There is also significant

variation on potential explanatory factors. Some of these groups are homogenous on many dimensions, while contain religious or linguistic divisions. Some groups have relationships with outside states or the country's communist insurgency, while others are isolated. There is variation in institutional structure as well, with some movements having robust political wings that engage in local governance, while other are comprised only of violent groups.

A potential technique for analyzing these cases is qualitative comparative analysis (QCA) (Ragin 2000). QCA requires cases to be coded on the variables of interest, and identifies patterns in a manner similar to quantitative analysis. Where it departs from statistical approaches is in its focus on the precise form of the relationship between variables. For example, QCA is often used to identify necessary and sufficient conditions, or more complex causal chains. The Burmese separatist movements should provide an adequate number of cases for QCA, and the amount of information available on them should be sufficient to code the variables of interest. Alternatively, this analysis could take the form of a more open-ended qualitative case study. In this case, the focus would be on compensating for the weaknesses of the qualitative analysis, with an emphasis on tracing the processes through which rebel structures emerge and change.

7 Pilot Study: The Palestinian Dissident Network

To demonstrate the feasibility of the empirical approach, and the plausibility of the theoretical arguments, I provide a case study of the Palestinian dissident network. This analysis does not fully implement all elements of the research design outlined in the preceding section. I have not created a network for every month of the conflict, instead creating snapshots for a few key junctures. I also do not include negative ties (conflictual events) in the networks presented here, instead recording a tie any time two dissident groups interact, and the mean interaction is more cooperative than conflictual.

Figure **??** illustrates the Palestinian dissident network in September 2000, the beginning of the Second Intifada.[14] There were eight groups in the dissident network in that month, most having ties to at least one other group. A closed triad (three nodes all having connections with each other) sits at the center of this network, with Fatah, Hamas, and the PLO as members. The connection between Fatah and the PLO is entirely unsurprising, given Yasser Arafat's leadership of both organization. It is also makes sense for Hamas to be connected with the PLO, given that the latter serves as the *de facto* Palestinian government for many purposes. The connection between Hamas and Fatah is surprising given the state of their relations in later years, but can be attributed to Arafat's efforts to build unity among Palestinians. Islamic Jihad is tied to Fatah, the Popular Front for the Liberation of Palestine is tied to the PLO, and the Democratic Front for the Liberation of Palestine is connected to Hamas. Thus all of the non-official dissident organizations share at least one connection to another organization. Only WAFA, the official radio station of the Palestinian Authority, and the Palestinian Legislative Council,[15] the legislature of the Palestinian Authority, are not connected to other actors. The edge density of the network at this point was 0.21, meaning that 21% of all possible ties within the network were actualized. The modularity of the network is 0.16, meaning that there is slightly more clustering of ties than one would expect in a random network. The number of armed groups appearing in the conflict was 3 in September 2000, 4 in the two following months, and between 1 and 3 groups for the seven months after that.

The number of armed groups peaked at 7 on three occasions. The dissident network in one of these periods (October 2007) is plotted in Figure 2. The network has similar membership as it did in September 2001, but has one more node and one fewer tie. Thus, the density is somewhat lower, at 0.14. In addition, the ties that do exist are more clustered

[14]Only events occurring prior to the official start of the Intifada on September 28, 2000 are used to measure network ties.

[15]The actors falling under this heading are Palestinian legislators who are not clearly aligned with Fatah or Hamas.

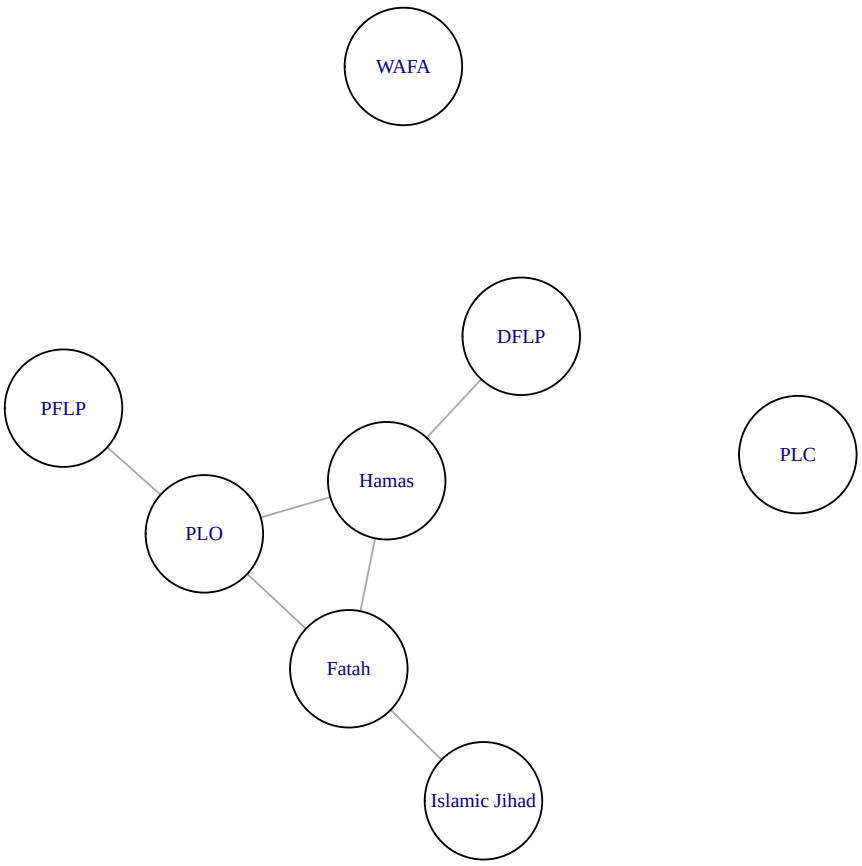


Figure 1: The Palestinian Dissident Network at the Start of the Second Intifada

than before, resulting in a higher modularity score of 0.30, indicating that the two clusters have slightly more internal ties than one would expect of ties were randomly distributed in the network. This network was constructed entirely from interactions that occurred after the death of Yaser Arafat, and aligns with the popular conception that the Palestinians became more factionalized after his passing (although Fatah and Hamas themselves continued to have some amount of cooperation). These two periods are consistent with my theoretical expectations. The earlier period features a network that is comparatively dense and non-modular. Relatively few groups resorted to violence around this time. In the later period, the number of ties in the network was comparatively sparse, and modularity was high. 7 groups engaged in violence that month, and the figure was generally high for several months before and after.

This pattern is robust to changes in the measurement of network ties. Using shorter or longer periods results in differing network sizes, but the density and modularity remain similar. Excluding groups such as the Palestinian Legislative Council, and coding permanent ties between the political parties and their militant wings also does not change the results. Furthermore, the severity of the conflict, at least in terms of the total number of conflictual events captured by ICEWS, was not vastly different between these periods, as there were 6 total conflict events in September 2000, and 9 in October 2007 (see Figure 4).

While there is no guarantee that this relationship will hold across the full set of observations, nor after the complete methodology is implemented, this pilot study is generally quite promising. It clearly demonstrates that it is possible to construct social networks from the ICEWS data that rate highly in terms of face validity, and the results are consistent with my core hypotheses. One concern raised by the study is that the size of the dissident network in terms of the number of nodes is fairly small and lacking in ties. While measures like edge density are so simple that they perform well regardless of sample size, it is less clear whether modularity measures are robust at this scale. Additionally, the Palestinian

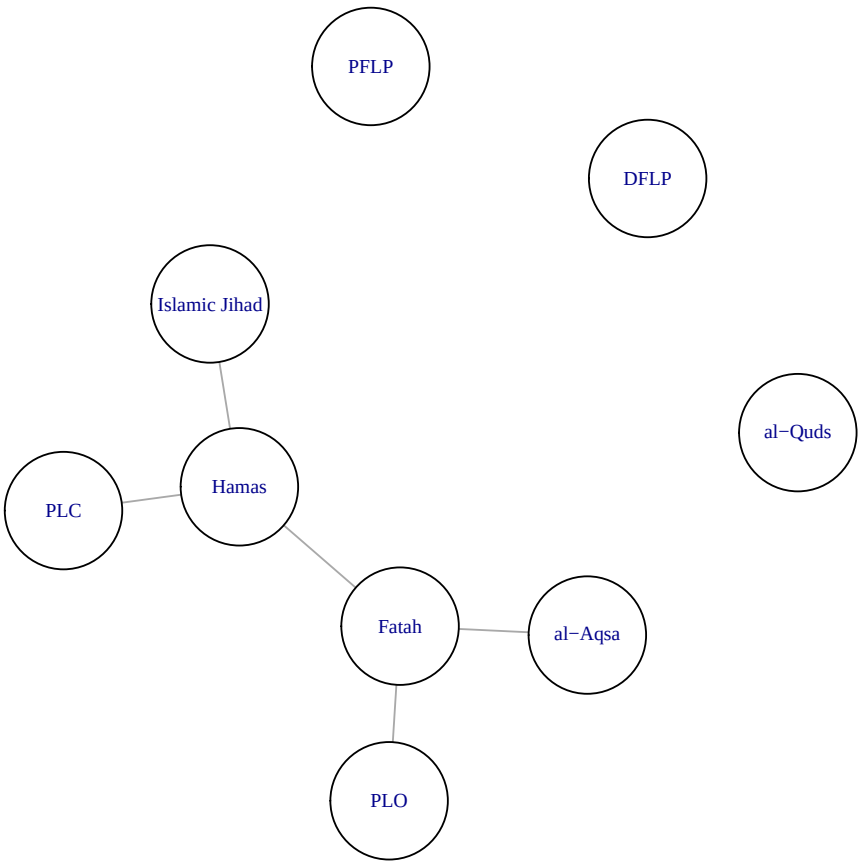


Figure 2: The Palestinian Dissident Network at in October 2007

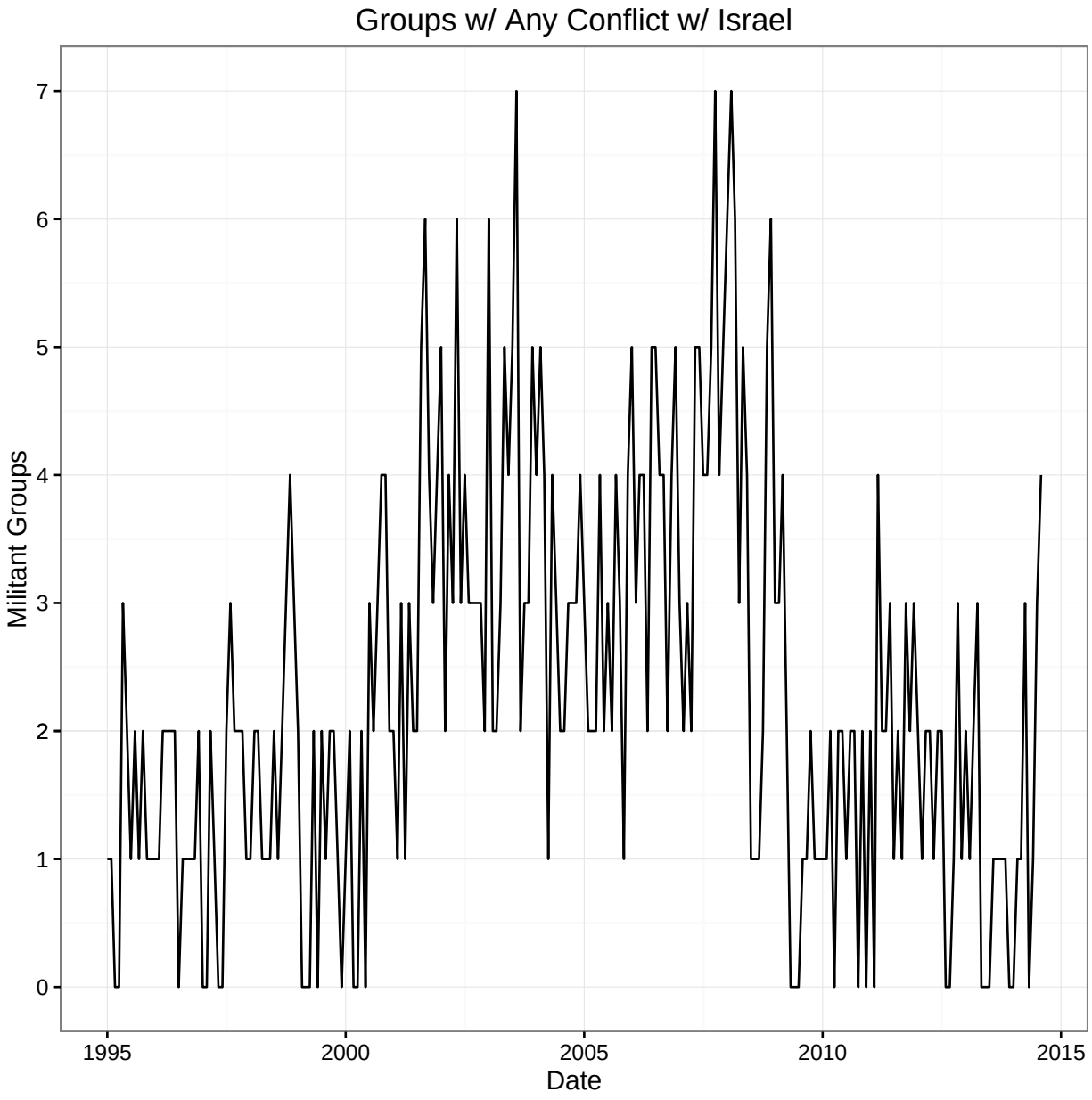


Figure 3: Palestinian Dissident Groups Using Violence, 1995–2014

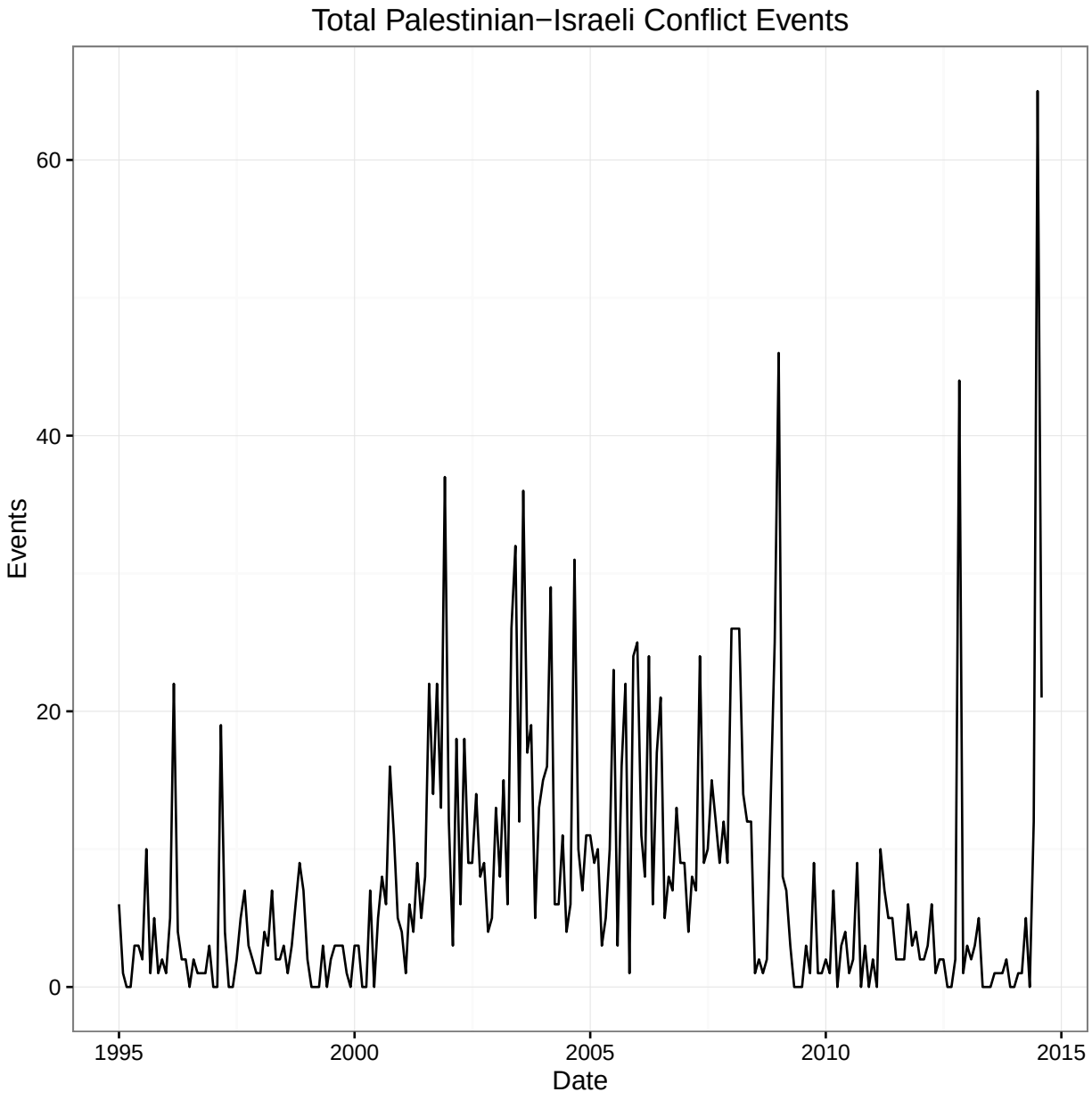


Figure 4: Total Palestinian-Israeli Conflict Events, 1995–2014

case is one of the more data-rich conflicts in the ICEWS data, raising the possibility that even if these concerns prove to be minor in this case, they may be problematic in others.

8 Pilot Study: External Support

I have yet to construct the external actor network needed to test the spillover effect predicted by *H8a* and *H8b*. I can, however, provide a preliminary and indirect test of *H5*, which expects greater dissident network modularity following the provision of external support to one or more members. I also do not have a completed dissident network at this time, and instead test the second order outcome — increases in the number of rebel groups.

8.1 Research Design

8.1.1 Dependent Variable

New Rebel Group Entries In the conflict-year analyses I include all new rebel groups that enter the conflict in the dependent variable. This is so partly for pragmatic reasons, as the number of splinter organizations is quite small ($n = 33$) in the period for which yearly external support data is available (1975–2010). Also, the theoretical logic above suggests that new groups considering joining the conflict should be affected by external support in a similar manner to factions within existing groups. Thus, I code a count of the total number of new groups entering the conflict in a given year. This measure is constructed from the UCDP Dyadic Conflict data (Pettersson and Wallensteen 2015), with a group being included in the count the year of their first conflict against the government (i.e. groups that have previously been active against the government are excluded). Out of 1,355 conflict-years, there are 152 cases of one group entering the conflict, 19 cases of two groups entering, and five cases of three groups entering.

8.1.2 Explanatory Variables

External Support Onset For one measure of external support I include all forms of support measured by the UCDP External Support Data (Themnér 2011). Specific forms of support include troops, access to territory, access to military or intelligence operations, weapons, materiel and logistics, training and expertise, funding and economic support, intelligence, other, and unknown. I code a binary indicator as 1 for any year in which a pre-existing rebel group receives any form of support for the first time (groups coded as having support starting in 1975 are considered to be censored). All sources of support are included. Most support is provided by states, but in a few cases intergovernmental organizations such as NATO are the donors. I code only the first instance of support as an onset event (i.e. a group already receiving support would not be coded as experiencing support onset if it began receiving support from a new donor).

Military Support Onset I also consider a measure consisting solely of military support, including the categories of access to territory, access to military or intelligence operations, weapons, materiel and logistics, and training and expertise.

8.1.3 Control Variables

The control variables used in this analysis are described in the project-wide research design presented in Section 6.

8.1.4 Model

As the dependent variable in this analysis is a count, I use poisson regression. As the data are in panel format, and thus susceptible to serial and spatial autocorrelation, I include fixed effects for both the conflict and year.

8.2 Results

Results for the first panel analysis are reported in Table 4. Model 1 employs a measure of any external support onset, measured at the current year and with one and two lags. The contemporaneous effect of support onset is statistically significant at the 99.9% level, and has a large substantive effect. An existing rebel group receiving external suThpport for the first time increases the expected number of groups entering the conflict by slightly more than 4. The first lag of the support measure is not statistically significant, while the second lag is significant at the 90% with a more modest effect size, increasing the expected number of entrants by 1.5. A number of control variables are not statistically significant. Models 1 and 2 include indicators for whether the country was democratic, the number of ethnic groups facing discrimination, the year of the conflict episode, and the logged population and area of the country. Of these, only population is significant, with a weak negative relationship with the number of entrants. Model 2 also includes indicators for the presence of several lootable natural resources — gold, diamonds, oil and drugs. None of these measures approach statistical significance.

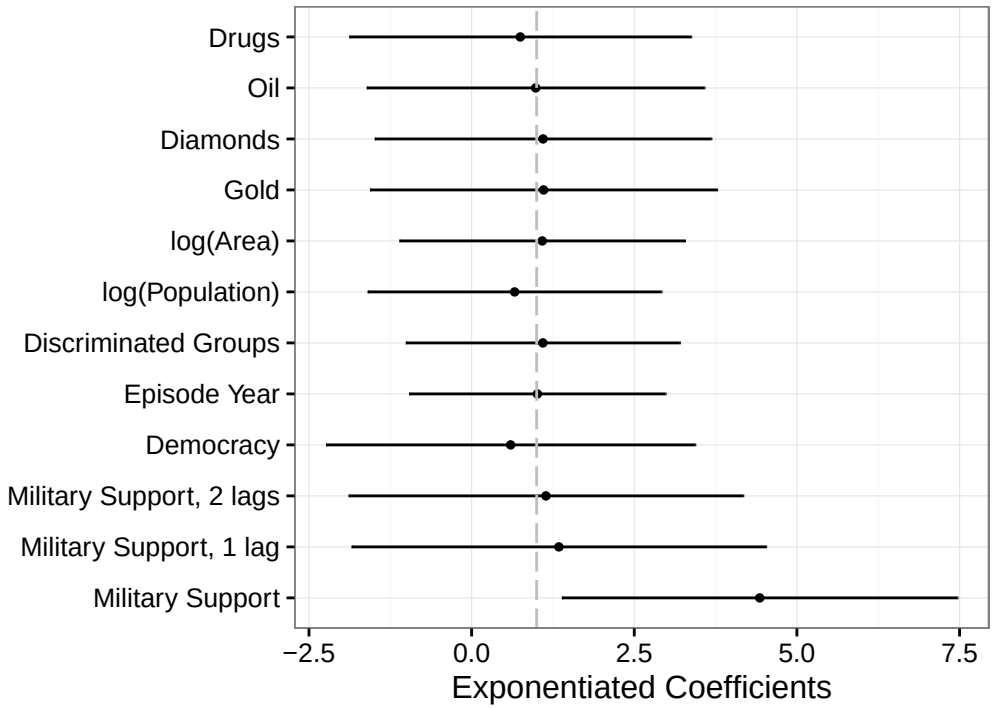
Models 3 and 4 measure the effect of military support, including assistance in the form of weapons, war materiel, training, intelligence, and use of foreign territory. Military support performs in a very similar manner to the aggregate support measure, with a significant contemporaneous relationship, and the lagged measures being non-significant. The substantive effect is similar, with the onset of military support increasing the the expected number of entrants by 4.4 (see Figure 5 for all substantive effects from Model 4). The control variables perform in largely the same way as in Models 1 and 2. Population again has a significant, negative relationship. Episode year is significant in Models 3 and 4, but very weak substantively. No other controls, including the resource variables, are significant.

Models including fatality measures are reported in Table 4. Due to data availability,

	Model 1	Model 2	Model 3	Model 4
(Intercept)	2.84^{*}	2.15	4.40^{**}	3.82^{*}
	(1.45)	(1.70)	(1.59)	(1.79)
All Support	1.42^{***}	1.43^{***}		
	(0.18)	(0.19)		
All Support, 1 lag	0.31	0.31		
	(0.32)	(0.33)		
All Support, 2 lags	0.44	0.44		
	(0.25)	(0.25)		
Democracy	-0.51	-0.51	-0.44	-0.51
	(0.32)	(0.33)	(0.35)	(0.37)
Episode Year	0.01	0.01	0.01^{*}	0.01^{*}
	(0.00)	(0.01)	(0.00)	(0.01)
Discriminated Groups	-0.02	-0.01	0.06	0.09
	(0.06)	(0.07)	(0.06)	(0.07)
log(Population)	-0.37^{**}	-0.33^{*}	-0.48^{***}	-0.41^{**}
	(0.12)	(0.13)	(0.13)	(0.14)
log(Area)	0.11	0.10	0.12	0.08
	(0.08)	(0.11)	(0.09)	(0.11)
Gold		0.14		0.10
		(0.31)		(0.31)
Diamonds		-0.04		0.09
		(0.27)		(0.28)
Oil		-0.17		-0.02
		(0.28)		(0.28)
Drugs		-0.21		-0.29
		(0.28)		(0.29)
Military Support			1.39^{**}	1.49^{***}
			(0.42)	(0.44)
Military Support, 1 lag			0.27	0.29
			(0.48)	(0.49)
Military Support, 2 lags			0.17	0.13
			(0.43)	(0.44)
Log Likelihood	-266.06	-265.63	-263.27	-262.58
Num. obs.	646	646	620	620

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table 4: Fixed Effects Poisson Models of Rebel Group Entries, 1976–2010



Simulations based on Model 8. Lines represent 95% confidence intervals.

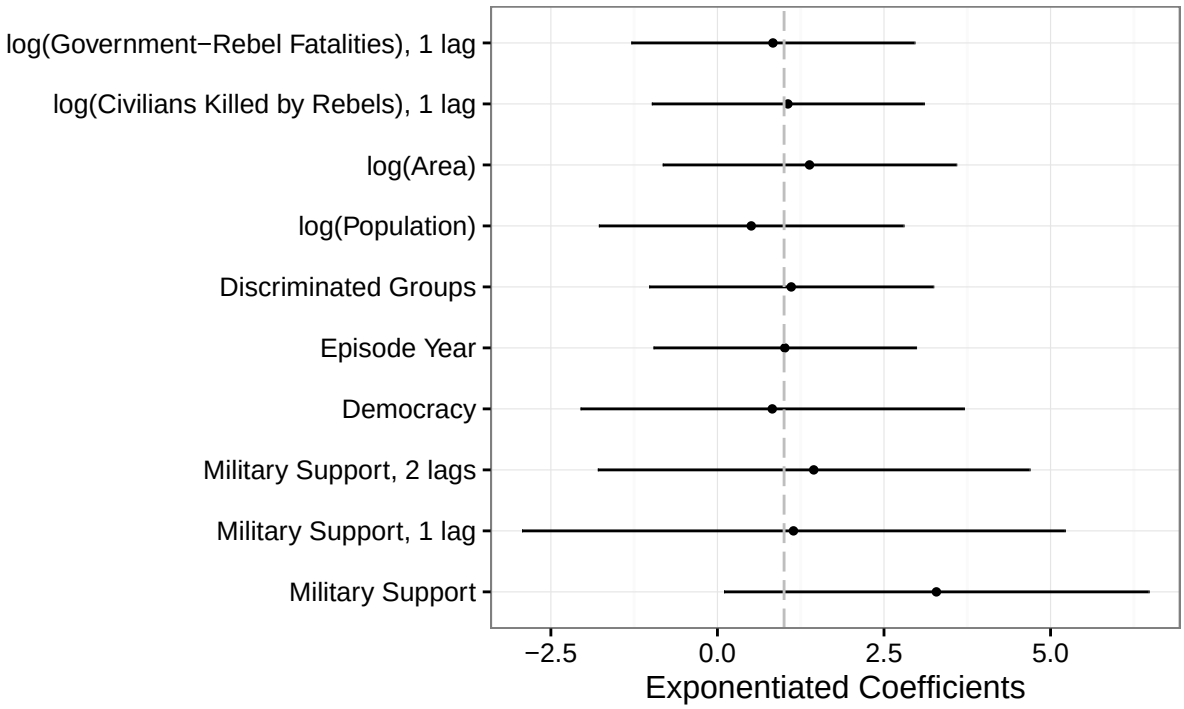
Figure 5: Substantive Effects, 1976–2010

these analyses cover only the period 1989–2014. Model 5 employs the comprehensive measure of all external support, while Model includes only military support. The results are not substantially changed by the inclusion of the fatality measures. The contemporaneous effect for each of the support measures is significant, though with slightly smaller substantive effects. The lagged measures are not significant. Population continues to have a significant, negative relationship, while area has a weak positive relationship in the fatality models. As before, no other controls are significant. The measure of total fatalities resulting from government-rebel fighting in the prior year is not statistically significant in either model, nor does it alter the performance of the other variables. The measure civilians killed by rebel groups in the prior year is significant at the 90% level in Model 5, and the 95% level in Model 6. Contrary to *H2*, the coefficients are negative in each model, though the substantive effects are weak. Complete substantive effects for these models are plotted in Figure 6.

	Model 5	Model 6
(Intercept)	4.42^{**}	6.10^{***}
	(1.59)	(1.78)
All Support	1.28^{***}	
	(0.21)	
All Support, 1 lag	-0.01	
	(0.40)	
All Support, 2 lags	0.55	
	(0.28)	
Democracy	-0.35	-0.19
	(0.35)	(0.38)
Episode Year	0.01	0.01^{*}
	(0.00)	(0.01)
Discriminated Groups	0.02	0.10
	(0.08)	(0.08)
log(Population)	-0.52^{***}	-0.68^{***}
	(0.14)	(0.15)
log(Area)	0.25^{*}	0.32^{**}
	(0.10)	(0.12)
log(Civilians Killed by Rebels), 1 lag	0.05	0.06
	(0.04)	(0.04)
log(Government-Rebel Fatalities), 1 lag	-0.15	-0.18^{*}
	(0.08)	(0.08)
Military Support		1.19^{*}
		(0.49)
Military Support, 1 lag		0.13
		(0.73)
Military Support, 2 lags		0.37
		(0.50)
Log Likelihood	-205.66	-196.72
Num. obs.	496	468

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table 5: Fixed Effects Poisson Models of Rebel Group Entries, 1989–2010



Simulations based on Model 10. Lines represent 95% confidence intervals.

Figure 6: Substantive Effects, 1989–2010

8.2.1 Discussion

I expect that the provision of external support to a member of the dissident network will ultimately lead to more rebel groups entering the conflict, as the network becomes more modular. The models in Tables 4 and 5 are consistent with this notion, as the entry of new rebel groups to the conflict coincides with the initiation of external support for existing rebel groups. Some caveats apply, however. I find robust support for only a contemporaneous effect, meaning that I cannot rule out the possibility that external support comes in response to an increase in the number of rebel groups, rather than the reverse. The fact that the second lag of the support measures are generally significant at the 90%, however, lends some support to my hypothesized temporal ordering. Alternatively, the two phenomena could be spuriously related, instead each responding to some underlying factor. For instance, both may increase as the conflict reaches a general crescendo. I have attempted to address these concerns by controlling for the year of the conflict episode. Running the

analyses only on conflict years that are not the first in an episode, also produces similar results. Furthermore, I control for trends in the general intensity of the conflict. The lagged measure of total government-rebel fatalities does not alter the performance of the external support measures. Including contemporaneous fatality measures, and even reverse lags does not alter their performance either. Finally, I have included a number of other controls beyond those reported in the final analyses, including alternative measures of ethnic diversity, geographic attributes such as urbanization and mountainous terrain, economic attributes, and the same rebel group attributes that appear in the group-level analyses. The relationship between contemporaneous support and new group formation is robust to all of these. Thus, I cannot reject the null hypothesis of no relationship between external support and increases in the number of rebel groups. This is suggestive of support for the theory, though I acknowledge that the multiple interpretations of the finding are plausible.

H7 attempts to establish a more precise mechanism by which external support is related to the entry of new rebel groups, hypothesizing that support allows rebels to become more violent towards civilians. This in turn might provoke strife within the group. Contrary to my expectations, the measure has a statistically significant, negative relationship with the entry of new rebel groups. This suggests that increased violence against civilians is not the mechanism relating external support to the entry of new rebel groups. However, such a relationship might be more complex than the current models allow. Further work should test civilian fatalities as a mediation effect situated between external support and rebel group entry.

In summary, I find a robust temporal relationship between the onset of external support for existing rebel groups, and the entry of new rebel groups to the conflict. I do not find evidence that external support explains the cross-sectional variation in the probability of rebel group splintering, nor do I find evidence that rebel violence against civilians is the link between external support and the entry of new groups. The fact that the natural

resource variables do not predict the entry of new groups in a panel framework, along with the fact that relatively non-fungible military support performs similarly to a comprehensive measure of support that includes financing, perhaps suggests that the relationship is not driven by material resources. One remaining explanation is that external support activates political conflict with the dissident network. This could be ideological conflict, as external support clarifies the recipient group's preferences. Alternatively, it could alter internal power structures in such a way that fragmentation and separate mobilization are incentivized. Another possible explanation is that external support is distributed in a way that incentivizes (or fails to disincentivize) the fragmentation of dissident movements into multiple rebel groups, while other resources are not.

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