

Finding the Frontline in Civil Conflict: Looting and Recruiting in African Refugee Camps

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Bio:

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Abstract:

Despite the recent emergence of subnational civil conflict data, subnational conflict theory remains underdeveloped. For example, why are some locations more conflict prone than others? In addition, refugee studies continue to aggregate refugee flows, ignoring the differences between refugee movements and refugee camp locations. This study seeks to fill these gaps while incorporating theory on transnational rebels. This paper argues that refugee camps provide lootable goods and potential recruits, which facilitates a rebel group's capacity to wage war effectively. Rebel groups can access refugee camps located outside of refugee origin states and take advantage of any available material and human resources. Quantitative analyses using UCDP conflict data exhibit a negative relationship between conflict and the distance from a given grid cell centroid and the nearest refugee camp, diamonds, and gemstones. These findings indicate a need to devote greater attention to refugee camps in order to ameliorate the negative externalities of civil war.

Introduction

In March of 2014, the Sudanese government-supported Rapid Support Forces (RSF) attacked and burned a camp of roughly 3,000 internally displaced persons (IDPs) in Khor Abeche, South Darfur, after pillaging a number of neighboring villages. While most of the residents fled to a nearby peacekeeping compound, the attackers looted the camp, held three individuals hostage for ransom, and killed the son of the local sheikh. During the same week, the Kenyan government ordered all Somali refugees to return to their camps near the border in an attempt to contain the violence from Somali Islamist groups who had allegedly used the refugee camp as a base and carried out attacks against civilians. Despite the common use of displacement camps by rebel and other violent non-state groups as strategic territory, there has been a dearth of cross-national quantitative studies on the role that refugee camps play in the theater of civil war. This paper seeks to fill this gap by merging the literature on transnational rebels, refugees, and subnational conflict. What makes certain areas more prone to violence than others during a civil conflict? How do refugees affect conflict at the subnational level?

Using geographical information system (GIS) mapping to analyze subnational conflict grids and the locations of refugee camps in continental Africa, this paper argues that rebel groups must loot and recruit in order to sustain themselves and pose a legitimate threat to a government. Rebel groups must fight in areas from which they can extract tangible or human resources, since both resources strengthen rebel capabilities. Furthermore, refugee camps near a warring state border are centers for conflict because they provide rebel groups with resources that could support the war effort as well as frustrated displaced persons that are ripe for recruitment. Regression analyses demonstrate that rebel groups are particularly active near refugee camps and locations with other valuable lootable goods. Poorer areas are also particularly prone to conflict.

This evidence provides unique and crucial insight into the strategic motivations of civil war actors. In general, it is valuable to understand the factors that make certain locations more prone to violence in order to focus peacekeeping efforts and to protect the civilians in the area that inevitably suffer because of the conflict. If intergovernmental organizations (IGOs) and conflict mediators can anticipate where conflicts will most likely occur, security forces can focus their efforts on these locations. This can maximize the international resources and efforts dedicated to protecting innocents and minimize the levels of violence in a given conflict.

This paper shall proceed as follows: the next section outlines the existing literature on civil conflict location and how refugees have contributed to conflict. The second section details the theoretical connection between refugee camps and subnational locations of conflict and presents the hypotheses of the study. The subsequent section will discuss the research design and operationalization of variables, followed by the analysis and discussion of the statistical results. The paper concludes with implications for policy-makers and suggestions for future research.

Previous Literature

New subnational conflict data has opened an avenue of conflict research, allowing scholars to understand and investigate why some parts of countries are more conflict prone than others (Tollefsen, Strand, & Buhaug, 2012). Indeed, civil conflicts are by definition subnational events and often do not consume entire states; rather, particular regions tend to be more violent than others (Cederman & Gleditsch, 2009; Buhaug & Lujala, 2005). Though subnational conflict theory remains underdeveloped (see Buhaug & Lujala, 2005), the newly available subnational data allows conflict scholars to better answer some of the most crucial questions in conflict studies, including where fighting occurs in civil war and why.

Grievance and Civil Conflict

The theoretical contributions of state-centric civil war scholarship provide the foundation for subnational conflict theory. Central to the debate in the civil war literature is whether rebels are motivated by greed or grievance (Collier & Hoeffler, 2004; Collier & Sambanis, 2005; Fearon, 2005; Østby, 2008). Gurr's (1970) work has been instrumental in formulating this discussion in support of the grievance hypothesis, as he finds that relative deprivation leads to conflict. Collier and Hoeffler (2004), however, demonstrate that although both grievance and greed models contribute some level of explanatory value to conflict onset, grievance hypotheses have had relatively weak support. Some scholars believe that the relationship between inequality and conflict is simply conditional upon other factors (Koubi & Böhmelt, 2014). Others have attributed the weakness of grievance models to an imprecise conceptualization of inequality (Cramer, 2003). Østby (2008), for example, contends these findings are the result of the literature focusing on "vertical" inequality, or inequality among individuals. This leads him to restructure his unit of analysis to better examine "horizontal" inequality, or inequality between ethnic groups². He argues that in group settings, the effects of grievances as well as group cohesion of the relatively deprived are both enhanced. Østby, Nordås, and Rød (2009) use the UCDP/PRIO localized conflict data in order to test the grievance hypotheses at the regional level. They study administrative districts across 22 African countries and find that conflict is more likely in regions with strong intraregional inequalities and the combined presence of natural resources and relative deprivation. For further discussion on subnational ethnic relationships, economics, and conflict, see Gubler and Selway (2012) and Toft (2012).

Absolute poverty has also been found to affect conflict outbreak at the subnational level (Buhaug, et al., 2011); thus, economic grievance certainly cannot be discounted at the local level, especially when household economic status and violence seem to create a vicious circle. As

Justino (2009) explains, households in conflict areas often rely upon local armed groups to protect them, and armed groups utilize the local population to advance strategic objectives. Rebel groups, then, are likely to be more active in poorer areas. Indeed, people living in especially poor areas have a much lower opportunity cost for joining a rebel group.

Still, most of the grievance literature at the subnational level of analysis has followed the Collier and Hoeffler model by studying conflict outbreak (Buhaug, et al., 2011; Østby, et al., 2009), paying less attention to the location of violence throughout a conflict. Studying conflict incidents during a civil war provides deeper insight into the nature of the conflict and the factors that contribute to violent behavior.

Greed and Civil Conflict

Greed theses have yielded more robust results in the scholarship regarding rebel group capabilities and decision calculi. Greed-based theories can be interpreted in two distinct ways. The first is the “conflict as crime” interpretation of civil war onset, wherein rebel groups fight for some form of profit (Collier, 2000; Collier & Sambanis, 2005). Rebellion creates a profitable industry via lootable goods and commodities, so rebellion occurs where there is opportunity for profit. Diamonds, oil, drugs, and other natural resources inherently make states more war-prone if state capacity is low (Buhaug & Rød, 2006; Østby, et al., 2009; Fearon, 2005; also see Fjelde & Nilsson, 2012; Buhaug & Lujala, 2005; Buhaug & Gates, 2002). Civil conflict in Sierra Leone has been commonly attributed to the presence of “blood diamonds,” over which rebel groups and external forces have fought for years. This interpretation assumes a baseline threshold of grievance that accompanies greed, because rational actors must weigh the costs of fighting and possibly dying for profit (Lichbach, 1995). The utility and probability of achieving goals with

violence must be greater than the high probability of death in civil war, so a low opportunity cost of joining a rebellion amplifies the lure of war profits.

Nevertheless, classifying rebels as nothing more than pirates and bandits ignores the utility of achieving political goals in civil conflict; thus, understanding the issue of contention in a civil war provides a more nuanced approach to studying subnational conflict locations. For example, territorial conflict is more likely to occur in sparsely populated areas near the border of a state, whereas conflict over control of the state is more likely to occur near the capital and in densely populated areas (Buhaug & Rød, 2006). The risk of conflict between center and periphery ethnic dyads increases with the distance of the marginalized group from the capital, especially when the dyad is near demographic power parity (Cederman, Buhaug, & Rød, 2009). Clearly, understanding the political goals of particular groups and the nature of specific conflicts offers significant explanatory power regarding the determinants of the location of conflict that cannot be achieved by classifying all rebel groups as profit-seeking bandits.

A second interpretation of the greed hypothesis is that resources are a strategic asset in a zero-sum war. If a rebel group has control of a diamond mine, the rebellion can continue to fund itself, and the state no longer has access to the funds the mine provides. It is no surprise, then, that conflicts are more likely to break out or be more violent in specific locations with natural resources or lootable goods such as gemstones and drugs. Relative material gains are one of the most important aspects of the development of a civil war because the growth of the rebel group in-and-of-itself is one of the greatest determinants of rebel victory. Since governments already maintain a standing army, rebel groups face the challenge of starting with nothing and competing with the state for influence and power (Mason, Weingarten, & Fett, 1999). If a government cannot suppress a rebellion quickly, the rebellion's growth inherently increases its chances of

success in achieving victory or at least some form of negotiated settlement (Mason, et al.,1999; DeRouen & Sobek, 2004). This is consistent with Buhaug and Lujala's (2005) findings that the duration of a conflict increases when there are gemstones and coca cultivation in the conflict zone. Buhaug, Gates, and Lujala (2009) also find that the presence of alluvial diamonds increases the duration of a conflict. Lutable resources obtained by rebel groups help them to develop and fund themselves, increasing the duration of conflict and resulting in continuous relative losses on the part of the government. If a rebellion can sustain itself for an extended period of time, its bargaining leverage increases, which amplifies its ability to achieve its goals against the government.

In sum, rebel groups often fight in locations with resources such as diamonds and gemstones, drugs, etc. in order to acquire resources that could support the war effort (Le Billon, 2001; Ross, 2004), and provide incentives for joining the rebellion via selective incentives (Mason, 2012). Put simply, lootable goods are paramount to rebel groups' war efforts because they strengthen the rebel group's capabilities, increasing the threat the group can impose upon their government counterpart.

Rebel Groups and Strategic Decisions

The civil war literature commonly assumes that rebel groups are rational actors, seeking to maximize their utility while minimizing the costs of doing so. Rebel groups thus act strategically and seek to achieve their goals in the most feasible way possible. This has led most civil war studies after Fearon and Laitin (2003) to incorporate variables reflecting the feasibility of rebellion or strategic decision-making between warring parties. For instance, geographic and terrain-based variables are important controls when studying subnational conflict locations, but only because of the strategic factors associated with specific terrain. Analyses of these variables

that fail to account for rebel group decision calculi may be the cause of the inconsistent findings regarding the effects of terrain and conflict onset or location (Fearon & Laitin, 2003; Buhaug & Rød, 2006; Cederman, Buhaug, & Rød, 2009; DeRouen & Sobek, 2004; Collier & Hoeffler, 2004; Rustad et al., 2008; Buhaug, Gates, & Lujala, 2009).

Rational rebel groups also seek a certain level of utility for their actions, so the expected utility assumption leads to the idea that most conflict incidents are driven by some incentive to violently engage with an enemy. Lootable goods provide material benefits to fund the war effort and may provide selective incentives to individual rebels; however, diamond mines and oil-rich areas can be difficult for a rebel group to seize, since governments likely expend a high proportion of resources defending commodities during conflict. For this reason, my paper argues that there are other sources of incentives beyond commodity exports that can contribute greatly to the growth of a rebellion. More specifically, areas near refugee camps, filled with international aid resources and frustrated people ripe for rebel recruitment, should also be centers for conflict.

Refugees and Civil Conflict

Despite the extensive scholarly research on the causes of human displacement (Lischer, 2007; Melander & Öberg, 2007; Adhikari, 2013; Davenport, Moore, & Poe, 2003, Moore & Shellman, 2004), considerably less quantitative work has been devoted to how forced migration may lead to the spread of conflict (Choi & Salehyan, 2013; Salehyan & Gleditsch, 2006). Refugee flows tend to alter ethnic power balances and expand rebel networks, allowing rebel groups to increase the scope of their influence (Salehyan & Gleditsch, 2006; Weiner, 1992; Choucri, 2002; Whitaker, 2003). The effects of the externalities of refugee flows are either limited or bolstered depending on the domestic context of the receiving state (Whitaker, 2003).

These findings have been relatively robust in the scholarly literature, but there remains a need to apply localized subnational conflict data to refugee studies (Salehyan, 2007a). Moreover, while the vast majority of the worldwide refugee population lives in urban or rural centers throughout a host state, many others are forced into refugee camps, often near the border. Quantitative research on effects that refugee camps in particular have on conflict location remain scant in the literature, despite the fact that the distinction between refugees in camps and refugees dispersed into the host state population may have a significant impact on the nature of the relationship between displaced persons and the perpetuation of civil conflict. For instance, Salehyan and Gleditsch (2006) demonstrate a strong relationship between transnational rebels and refugee flows, but they do not acknowledge quantitatively that refugees in the urban centers of a host state may be less likely to involve themselves in the civil conflict of their origin state. Refugees in this situation have a higher opportunity cost for joining a rebellion, and urban centers with a stronger host-state government presence may be more difficult for transnational rebels to access. These refugees differ from those populating displacement camps. The following section outlines the importance of refugee camps to a rebel group, develops a theory regarding the interaction between refugee camps, lootable goods, and rebel groups, and presents the hypotheses of this paper.

Looting and Recruiting: Why Do Rebel Groups Fight Where They Do?

Refugee camps are dynamic locations that may provide rebel groups in a neighbor warring state (or within the same conflict state) the opportunity to sustain and expand a civil conflict. Lootable goods, such as food and medicine, are readily available; rebels can find sanctuary among the ranks of the displaced people, who may share similar frustrations with the government of the conflict state; and the camps themselves are filled with frustrated migrants

who may be vulnerable to rebel recruitment (Salehyan, 2009; Lischer, 2005; Milner, 2009). Rebels within refugee camps can militarize members of the refugee population, giving rise to “refugee warriors” (Zolberg, Suhrke, & Aguayo, 1986; Lebson, 2013; Stedman, 2003) who can aid a rebel group in staging attacks back across the border. Refugee camps that are accessible to rebel groups likely perpetuate conflict nearby because of the material and human resources they provide.

As Mason, Weingarten, and Fett (1999) explain, the threat of a rebel group is a function of how long the rebel group can sustain a conflict—if the government cannot suppress it quickly, a rebel group inherently becomes more threatening and will more likely acquire concessions from the government in the end. It can therefore be assumed that civil conflict is a zero-sum game between a rebel group and a government in which the opposing sides fight over relative gains and losses. Translated to the subnational level, conflict occurs in areas where rebel groups attempt to acquire gains relative to the government and where the government fights to prevent relative losses or regain previous losses.

It is also be assumed that governments and rebel groups are rational actors. Governments prioritize the maintenance of the status quo, while rebel groups have both long-term and short-term interests. While their long-term interest is to obtain concessions from the government, their short-term goal is to survive and expand, which would bolster the threat they pose to the government. In order to fulfill their short term goals, rebel groups must loot and recruit. Looting provides funds and sustenance to a rebel group, and recruitment is key to expanding the scope of conflict activity and strengthening the rebel group as a whole. Thus, rational rebel groups seek ways to finance, sustain, and grow the rebel movement at the lowest cost. This paper argues that accessible refugee camps can provide both lootable goods and spatially clustered potential

recruits to a rebel group. Refugee camps near national borders are more accessible to a (transnational) rebel group, *ceteris paribus*, assuming that civil conflict creates diffuse borders to some degree. In addition, some warring states are contiguous with another conflict state and host refugees in camps from the neighboring conflict. These camps can also be accessed by a rebel group within the host state for lootable goods or forced recruitment. While the vast number of internal displacement camps could add more nuance to this study, data on the location of these camps is scant and particularly hindered by definitional issues regarding the official status of camp residents.

Successful looting is paramount to sustaining a rebel group in a zero-sum war against a government. The funds received in return for lootable goods sold on the market may be used to purchase new weapons or provide selective incentives to rebel soldiers. Sustaining the rebellion also requires access to food and medicine for the soldiers. These resources may not be as readily available in impoverished areas; however, food and medicine from international donors are stored in relatively high quantities near refugee camps. For this reason, armed groups often raid warehouses near refugee camps that are filled with aid resources and equipment that can be used in the war effort, such as communications equipment and vehicles (Lischer, 2005). Since refugee camps can provide tangible resources that can support a rebel group's operations,

H₁: As the distance between a given location and the nearest refugee camp decreases, the likelihood of conflict incidence increases.

This is not to discount the impact of other lootable resources; refugee camps are but a sufficient, not necessary, condition for conflict. Access to gemstones and alluvial diamonds, for example, provides a resource that rebel groups may sell on the market in order to accumulate funds. Given the high market value of diamonds and gemstones,

H_{2a}: As the distance between a given location and the nearest diamond deposit decreases, the likelihood of conflict incidence increases.

H_{2b}: As the distance between a given location and the nearest gemstone deposit decreases, the likelihood of conflict incidence increases.

In both cases, these resources represent assets that serve as proxies for the relative gains or losses of a state/rebellion. A state should fight to maintain its assets and to prevent the rebellion from growing by taking them. A rebel group will fight for resources because they are fundamental to a rebel group's survival and ability to threaten the government.

Successful recruitment is inherently necessary for a rebel group to survive and is also important if the group is to pose a legitimate threat to a regime. Recruitment is a constant struggle, since taking up arms against a sitting government is a difficult collective action problem to overcome (Lichbach, 1995). Refugee camps, however, are often filled with people who are living in relatively squalid conditions and are frustrated at its origin government (Salehyan & Gleditsch, 2006). The latter condition provides a political motive for a refugee to militarize, while the former results in a low opportunity cost for joining a rebel group. If a rebel group can easily access a refugee camp, then the opportunity cost for a refugee to militarize further decreases because he does not have to overcome the collective action problem of actually starting a violent movement. In other words, it is much easier to join a rebel group than to start one. Rebel groups, therefore, have a strong incentive to access refugee camps and recruit from their population, given that the government of the warring state has no control of camps beyond its borders (Salehyan & Gleditsch, 2006; Salehyan, 2009). Rebel groups are intuitively more active near locations from which they can recruit because they can use the recruited population to stage attacks nearby. Thus,

H₃: As the distance between a given location and the nearest refugee camp decreases, the number of conflict incidents in that location increases.

This paper does not claim that rebel groups cannot recruit in places other than refugee camps.

However, refugee camps have yet to be studied in the quantitative literature on civil conflict.

These hypotheses simply reflect the idea that refugee camps are important sufficient conditions for rebel group expansion.

Rebel groups should also be more active in areas that provide valuable resources, both because they will fight harder to obtain the resources of the area than in some other random location and because access to these resources allows rebel groups to provide selective incentives to their recruits. It is therefore posited that

H_{4a}: As the distance between a given location and the nearest diamond deposit decreases, the number of conflict incidents in that location increases.

H_{4b}: As the distance between a given location and the nearest gemstone deposit decreases, the number of conflict incidents in that location increases.

Finally, poor areas often see more violence during a civil war because rebel groups maintain a relationship, either symbiotic or a vicious circle, with households in especially poor areas. As Justino (2009) explains, households in conflict areas may draw on local armed groups to protect them, and armed groups utilize the local population for mobilization (and possibly militarization) support. Participation in a conflict, according to Justino (2009), is a function of household vulnerability to poverty and to violence; thus, poorer households are more likely to participate in a rebel movement. This leads to a final hypothesis:

H₅: The poorer an area in a conflict zone is, the greater the number of conflict incidents in that area.

Research Design

This section outlines the regression models used to test the proposed hypotheses and the operationalization of the aforementioned theoretical concepts. Since civil conflicts are inherently subnational events, this study analyzes the effects of the explanatory variables on the likelihood of conflict in subnational units. The unit of analysis is based on the PRIO-GRID unified spatial cell data (Tollefsen, Strand, & Buhaug, 2012). PRIO-GRID data was chosen because of the comprehensive set of variables available through PRIO that are geocoded in the same spatial area. Each PRIO grid cell is 0.5x0.5 latitude/longitude lines, which translates to approximately 50 square kilometers at the equator. Admittedly, using grid cells reduces the resolution and precision of the unit of analysis compared to using specific events; however, as will be explained herein, the conceptualization of rebel activity as a proxy for rebel recruitment and capability is better captured by using conflict incidents rather than battle deaths. Moreover, using individual events as the unit of analysis may improve the precision of the data, but the validity of the measure would be lost and the variable simply would not vary.

Due to time and resource constraints, and because of the high level of contiguous conflict on the continent, the spatial domain of this study is limited to continental Africa. Madagascar and the African islands are eliminated from the study because the separation between them and the nearest country by water prohibits free movement of refugees. Using ArcGIS and Quantum GIS software, the African continent is divided into PRIO-GRID cells, each of them containing a centroid with unique latitude and longitude coordinates. The temporal domain of the sample consists of the years 2000 to 2008. 2008 is the end year because the subnational data contained within the PRIO-GRID dataset ends in that year. Unless otherwise specified, all subnational data was obtained from the PRIO-GRID dataset. Since conflicts are constantly changing, the locations

of refugee camps also change. Because of the very limited availability of data on the location of refugee camps, it was necessary to keep the temporal domain relatively limited. Therefore, the year 2000 was chosen so that the data on refugee camp locations would be as accurate as possible. The level of conflict in Africa during these years is certainly high enough to produce accurate results. The units under observation are also spatially small, so robust inferences can still be made from the large sample size.

After eliminating all cells that are not part of continental Africa, the sample population size is 147,490 grid cell-years. In order to reduce the vast number of irrelevant cells, all cells that were not within a conflict zone according to PRIO-GRID were dropped from the population, leaving 19,310 cell-years to be observed. PRIO-GRID conflict zones were derived by creating spatial areas that contain all point-level conflict incidents data in a given conflict, finding the center of that area, and calculating a radius from the center point to the furthest conflict incident from that center point. All cells that were included within the area of the circle with the calculated radius were included in the sample population of this study.

Not all cells within a PRIO-GRID conflict zone actually experienced conflict, but accounting for the non-conflict cells within a conflict zone allows a cell with zero incidents to impact the strength of the explanatory variables while also controlling for a certain level of spatial autocorrelation. Cells within a conflict zone likely experience conflict nearby, so they are naturally more prone to conflict. This can only improve the accuracy of the regression results because it takes into account the cells that are at risk of conflict due to spatial factors but still do not experience conflict, allowing the dependent variable to vary more freely.

Dependent Variables

To test the first set of hypotheses, a dummy variable representing conflict *incidence* is used, based on the UCDP/PRIO conflict data. A civil conflict according to UCDP/PRIO is defined by at least 25 battle deaths in a year. To measure the dependent variable in this study, a 1 is coded in a cell if at least one event occurs in that cell during a UCDP/PRIO defined civil conflict. A zero in a cell signifies that no conflict events occurred in that cell during that conflict year.

The dependent variable under examination in the second set of hypotheses is the number of conflict incidents during each grid cell-year in a civil conflict. Rebel groups can be more active in a particular location if they have greater mobilization capacity and resources. As refugee camps are posited to provide recruits and resources to a rebel group, rebel groups should be able to engage in multiple operations near them. The number of incidents within a grid cell best captures the capability of a rebel group in an area because it demonstrates the group's ability to be actively engaged in the civil conflict. Rebel groups can fight more intensely in certain areas if they have the capability to do so.

Independent Variables

The primary independent variable of this paper is the distance between the nearest refugee camp and the centroid of a given cell. Raster maps were taken from the UNCHR to locate the major refugee camps in Africa. Using Quantum GIS software, the raster maps themselves were georeferenced, which allowed for the georeferencing of specific points on the raster image to a vector map of Africa. Georeferencing is the designation of a unique latitude and longitude point to some data point. In order to georeference a map, multiple points on the image are georeferenced, which allows for the map itself to be overlaid upon a vector map (in this case, of continental Africa). Each major refugee camp was then pinpointed in ArcGIS with a latitude and longitude point. Figure 1 depicts the refugee camps, diamonds, and conflict incident locations in

Africa from 2000 to 2008. It must be noted that the data available on refugee camp locations was fairly crude, so the precision of the georeferencing was limited. Several refugee camp locations in a few countries, such as Zambia and Malawi, were approximated because the raster images were either poor or unavailable. In addition, this study can in no way claim to have georeferenced all refugee camps in Africa, but assumes that the major refugee camp locations were noted on the raster maps provided by the UNHCR. There were also a few minor variations in refugee camp notations on individual country maps. All points that signified “refugee camps” or “refugee settlements” were georeferenced. There were also a number of points representing “refugee locations;” these points, however, were not included in this study because it is unclear whether these locations have large numbers of refugees or if they represented only small populations of displaced persons. There were also a few shaded areas on the UNHCR maps (in countries such as Ivory Coast and Guinea) that represent “refugee areas.” Since these areas likely contained great numbers of refugees who simply had not been placed in camps, one point was georeferenced in the approximate center of these few areas if there was no refugee camp point noted on the map within the area. The use of grid cells as units of analysis reduces the resolution of an area to a degree, which helps to account for the potentially low level of precision in georeferencing refugee camps.

The distance between each cell centroid and the nearest refugee camp was calculated with ArcGIS. The same process was used to calculate the distance between the centroid of a given cell to the nearest diamond deposit and to the nearest gemstone deposit. The georeferenced diamond data is taken from the Gilmore, Gleditsch, Lujala, and Rød (2005) dataset, which includes latitude and longitude points for diamond deposits. The gemstone data is taken from Lujala, 2009 and includes a range of valuable gemstones including emeralds, rubies, and

sapphires. These distance variables were not normally distributed, so each was transformed to adjust the distribution—the distances to the nearest refugee camps were logged, and the square root was taken of the distances to the nearest diamonds and gemstones.

In order to test H_5 , the economic state of each cell is measured by the Gross Cell Product (GCP) per capita. GCP is conceptually similar to the GDP of a country but at the individual cell level. Therefore, the aggregate GCP of an entire country equals the GDP of that country. Data was available for a number of years at five-year intervals, so the GCP per capita data from 2005 was used. This data was not normally distributed, so the square root of the variable was calculated.

Control Variables

A number of controls are also included in the regression models. The first is the population of each cell, which is particularly salient when conducting analysis at the subnational level. Because the cells are so small, there are some cells that have no population. Conflict is unlikely to occur in areas with no population because there is no population to fight. The cell population data is logged so that it becomes normally distributed.

Civil war literature since Fearon and Laitin (2003) has emphasized the importance of terrain variables, since rebel groups may be more active in rougher areas where there is less government control and access. Both mountains and forests are controlled for in this study; each is represented with unique binary variables. A 1 represents a cell with more than 40 percent coverage, and a 0 signifies less than 40 percent coverage for each variable.

To control for democracy, the Polity IV score of each state is generalized to each grid cell within the state's borders. This variable is somewhat limiting because it is state-level. The levels

of democracy in a country, however, indicate a population's ability to interact with their government in non-violent ways.

Finally, the models control for urban areas with the travel time (in minutes) from each cell centroid to the nearest urban center (more than 50,000 people). The benefit of this measure is that it is a direct indicator of the average time it would take for a person/group to reach a city, or for anyone in a city to reach a given area. In addition, while all other distance measures in this study are Cartesian distances (as the crow flies), this measure takes into account the roads between the cell and the nearest urban center. Cities represent an area where governments likely have more control, so capable rebel groups may target them if the rebels wish to hinder their government enemy. This measure is logged in order to transform it into a normal distribution. The data was taken from the PRIO-GRID dataset (Tollefsen, Strand, & Buhaug, 2012).

Methods of Analysis

This study employs a logistic regression to test the likelihood of conflict occurring in a given grid cell (H1, H2a, and H2b). As the distance between a given grid cell centroid and the nearest refugee camp, diamonds, or gemstones decreases, there should be a greater likelihood that conflict occurs in that cell. In order to test the hypotheses regarding recruitment (H3, H4a, H4b, and H5), an ordinary least squares regression is employed. An OLS regression model was chosen because the dependent variable has a continuous distribution.

Unfortunately, it can be difficult to resolve any potential endogeneity issues when examining refugee camp locations as opposed to aggregated refugee flows. Conflict certainly leads to both refugee flows and refugee camps in neighboring states, so distinguishing the effects of refugees on conflict locations must be addressed. Most of the refugee literature employs time lags for refugee flow variables, but refugee camp locations cannot simply be lagged. Previous

literature, however, has demonstrated that refugees have adverse effects on civil conflict in the origin (and sometimes the host) state via transnational rebel groups (Salehyan, 2009; Salehyan, 2007b; Salehyan & Gleditsch, 2006). Thus it can be assumed that if refugee host states also host rebel groups from a contiguous neighbor, rebel groups can use these transnational bases to stage attacks back across the border. Using refugee flow data from the UNCHR and transnational rebel base data from Salehyan (2008), a Chi-square test confirms this thesis. The results of the Chi-square are presented in Table 1. The test shows that there is a high probability that the relationship between refugee host states contiguous to conflict and states that host rebel groups from a contiguous conflict is not due to chance. This demonstrates that rebel groups often hide in refugee populations. The following section will present the results of the relationship between rebel group activity and refugee camps.

Results

The results of the logistic regression on conflict incidence are presented in Table 2. The entire model is significant at the .001 confidence level and explains approximately 9 percent of the variance of the dependent variable, according to the pseudo r-squared. The distance between a given grid cell within a conflict zone is negatively correlated with the likelihood of conflict occurring within that cell; thus, conflict is more likely to occur in areas near refugee camps. Diamond location is also significant in the hypothesized direction at the .001 confidence level. Interestingly, while H1 and H2a are both supported, the odds ratios of the variables in the model suggest that the refugee camp variable has a greater substantive effect on the likelihood of conflict than the lootable resource variables. This suggests that refugee camps may be more valuable to a rebel group than resources that can be mined and sold on the market. In fact, the

impact that the distance to the nearest diamonds have on conflict incidence is minute relative to almost all of the other significant variables in the model. H2b is not supported, since the distance between a cell centroid and the nearest gemstone deposit has no significant relationship with the likelihood of conflict in that cell. This may be a reflection of the fact that the gemstone variable included locations for a wide variety of gemstones, many of which may be of low market value or too difficult to loot.

Though most of the primary independent variables are significant, the strongest explanatory variable in the model is the GCP per capita of each cell. This provides strong support for the proposition that violent events are more likely to occur in poorer areas during a civil conflict. The model also shows that conflict events are more likely to occur near urban centers. In addition, the cell population variable had a positive and significant relationship with conflict, as did the polity score variable. The latter result is particularly strange, but is probably due to a number of coding issues. First, each cell-level polity score is generalized to be the same as the polity score of the cell's country. This may be somewhat inaccurate because democratic rights and values may be felt differently in different areas of a given country. Second, the distribution of the polity scores in the sample population is skewed strongly to the left-center of the normal distribution relative to the distribution of global polity scores. The minimum and maximum score in the Africa sample is -7 and 8 respectively, with a median value of -3. Since conflict is more likely toward the middle of the polity distribution, *ceteris paribus*, the data distribution for Africa skews the effects of the variable on conflict likelihood at the cell level.

H3, H4a, H4b, and H5 were all tested and strongly supported in the second model presented in Table 3. The F-test illustrates that the model is highly significant, though it only

explains about 4% of the variance. The coefficients for the explanatory variables of H3, H4a, and H4b are all somewhat small relative to the constant, but all are highly significant at the 99 percent confidence interval and move in the predicted direction. The refugee camp distance variable maintains the strongest impact on the number of conflict incidents relative to the diamond and gemstone distance variables. The number of conflict events in a cell increase by 1 for every 5 logged kilometers between the centroid of the cell and the nearest refugee camp.

The travel time between a cell and the nearest urban center is also highly significant and negatively related to the dependent variable, and the GCP indicator remains the most powerful explanatory variable in the model, moving in the hypothesized direction. Indeed, the GCP variable produces the only coefficient in the model with a value greater than the constant. This variable, however, is able to directly capture the effects of unique cell characteristics on the dependent variable measured at the cell level. The strength of the coefficients of the other independent variables is slightly biased because they capture spatial relationships between points of interest that are not necessarily located within the observed cell unit.

The polity score control and the logged cell population are also positive and significant in explaining the number of conflict incidents in a cell. Forests were insignificant in both models, indicating that high levels of forest cover are unrelated to both conflict occurrence and the number of violent incidents in an area. Mountainous terrain, on the other hand, was highly significant and positive in both the logistic and OLS regression analyses.

Analysis and Discussion

The absence of explicit subnational conflict theory has left much of the empirical findings in the civil conflict literature rather lacking. This paper has argued that theory at this level of analysis cannot simply be generalized from conflict onset and intensity theses at the state

level; rather, the study of subnational conflict necessitates a more localized analysis and should be studied within the framework of rebel group decision calculi. Though H2b was not supported, it is clear that a) lootable goods increase the likelihood of conflict nearby, and b) refugee camps can be re-conceptualized as another source of lootable goods.

Unfortunately, refugee camp raids are not limited to the theft of material resources. Terror acts are often committed against refugee populations. Women and children are often raped, and young men and children of both sexes are forcibly recruited into the raiding party as warriors or sex slaves. Refugee camps can satisfy these terrible demands of some rebel groups and government forces, especially when the conflict country is unstable and poor. Refugee camps are therefore especially prone to conflict when host state is also experiencing civil conflict.

Camps in these situations must receive an increased level of international attention and support, because forced migrants often have to flee to the nearest location that can satisfy their short-term demands. However, the humanitarian dilemma that refugee camps pose also cannot be ignored. Most of the resources stored near refugee camps are donated by IGOs, non-governmental organizations (NGOs), and other states. Despite the good intentions of the aid donors, these aid resources may be looted by rebel factions, contributing to conflict duration and contagion. For example, during the civil conflict in Zaire, Kabila's rebel forces stole thousands of gallons of fuel and some vehicles from UNCHR and NGO depots (Lischer, 2005). Host governments may also be violent towards refugee populations, especially amidst civil conflict. For at least a decade, the Sudanese government has supported the Janjaweed militia, which frequently pillages villages and refugee camps in Darfur.

Other rebel groups use refugee camps as sanctuary (Salehyan, 2007b), using aid resources to assist in rebel regrouping. Militants that hide within refugee populations may have special relationships with the refugee community leadership, leading to food misappropriation and taxes that are used to fund the war economy (Lischer, 2005). If the origin government suspects rebel mobilization in refugee camps across the border, it is not uncommon in Africa for that government to either directly attack the refugee camps or do so with proxy warriors. The South African Defence Force attacked and killed 600 Namibian refugees in 1978 on the grounds that the refugees were supporting the armed opposition to South African control of Namibia (Milner, 2009). During the Rwandan genocide, Rwandan forces invaded the DRC and attacked refugee camps that were hosting militants.

Still, rebel groups cannot simply seek refuge if they are to legitimately challenge a regime; rather, they must engage in heavy recruiting to facilitate growth, which is easier in areas where the population has a low opportunity cost to join the rebellion. The regression results of this paper provide support for grievance theses, indicating that rebel activity (conflict incidents) is greater in poorer areas and near refugee camps, both of which contain populations living in relatively impoverished conditions. Rebel group presence in an impoverished area also reduces the collective action barriers of mobilizing a rebel movement because joining a group is less costly than creating one. Rebel groups, in turn, require expansion in order to challenge the government, so recruiting at the least possible cost is ideal. Recruitment feasibility is therefore a function of the characteristics of both the rebel group and the specific population to be recruited. Conflict should occur more often near these rebel recruitment sources because rebel factions do not have to travel long distances from their base, and government forces should be targeting areas wherein rebel factions are strong.

Selective incentives also provide rebels with a means to increase the utility of joining their group. Resources like diamonds and gemstones can be provided to members of local rebel group factions, but may not easily be provided to members of a rebel group located at a further distance from the source of the valuable good. Furthermore, the spatial location of a selective incentive source impacts the ability of a rebel group to use the particular resource to recruit. Recruiting from an area far away from a source of selective incentives like diamonds is more difficult because a) transporting the resource may be difficult and costly; b) the local population is more reliant upon the resource; and c) information about the resource is less available in areas farther from the source. More incidents occur near these selective incentive resources because rebel groups that have control of these areas are stronger and governments seek to attack centers of rebel group power.

The conclusions drawn from this analysis are also consistent with the urban center variable results. Conflict is more likely to occur and happens more frequently in areas near cities because cities are more likely to be government power centers. Rebel groups are more active near cities in order to gain ground and momentum against their enemy. Interestingly, mountainous areas have a similar relationship with conflict occurrence as that of urban centers in both models, but forests remain insignificant. Moreover, this study can only provide limited evidence regarding the effect of terrain on conflict location because rough terrain is supported by the mountain variable but not the forest variable.

In sum, the availability of subnational (grid cell) data allows researchers to more deeply investigate the decision calculi of the warring parties in a given civil conflict. More generally, disaggregated measures allow for civil conflict scholars to disaggregate civil conflict as a whole.

Indeed, since civil conflict is inherently a subnational event, recent subnational level analyses have rendered some state-level studies of civil war rather archaic.

By extension, this analysis has opened a number of theoretical avenues for deeper investigation. The value of distance variables in this study demonstrates the importance of the spatial elements of civil war. Since valuable resources like diamonds or poor areas for recruitment are not necessarily clustered in a designated area in a country, rebel group movements seem to be defined by specific spatial characteristics. Rebel groups may be more “factionalized” in countries where the resources they need are “spatially fractionalized.” This study has argued that mobilization and militarization of a rebel group are more likely in subnational areas with these resources; however, a particular resource that is valuable to a rebel group in general is considerably less valuable to the group if it is far away. Furthermore, a rebel group is not necessarily unitary, but may consist of unique factions that have more or less influence and power in specific subnational locations. The resources within a short radius of one rebel faction may be less valuable in the short term to another rebel faction (even of the same rebel group) located on the other side of the country. In addition, some civil conflicts have more than one rebel group, each of which may have more power over distinct areas within a warring state. For more on violence between rebel groups within the same civil conflict, see Fjelde and Nilsson (2012).

Clearly, distance to particular resources is a cost that must be included when examining the genesis and behavior of a rebel group. Incorporating these spatial elements into civil war literature will foster deeper analysis and a more advanced understanding of the nature of civil war.

Conclusion

This paper has sought to fill gaps in the refugee and civil conflict literature by analyzing the subnational elements of both while incorporating theory on transnational rebel group behavior. Quantitative analyses of African refugee camps and subnational civil conflict events have demonstrated that conflicts tend to occur near lootable goods, in poor areas, and near refugee camps. A rebel group must loot and recruit in order to pose a legitimate threat to the government, and refugee camps can provide both lootable and human resources. Transnational rebel groups in Africa utilize refugee camps to further their cause, taking advantage of the squalid conditions in the camps and the resources provided by international aid donors.

A severe humanitarian dilemma has resulted from the relationship between transnational rebel groups and refugee camps. Aid resources from foreign donors fuel rebel groups, perpetuating the spread of conflict and reducing the security of refugee populations within camps. IGO security measures must be taken to better protect refugee camps from looting, and international organizations and refugee host states must work together to prevent rebel mobilization and refugee militarization in camps. One potential solution is for IGOs to provide increased support for host states willing to integrate refugees into their populations rather than keeping them in camps long-term.

Due to data constraints, this study has a number of limitations that can be translated into avenues for future research. First, the refugee camp location data is scant and somewhat unreliable. With the emergence of GIS technology in the political science literature, there is now a demand for accurate georeferenced data. The refugee camp data used in this project was by no means comprehensive, as there are likely many refugee camps in Africa that were not projected on UNHCR raster maps. Luckily, even an underestimated number of refugee camps provided significant results, so more comprehensive data may yield even stronger evidence in support of

theories posited in this project. Second, IDP camps were not included in this study's dataset, despite the possibility that they may have similar effects on rebel group behavior. Third, host state behavior toward refugees should be studied cross-nationally. Since some refugees are placed in camps and others are integrated into societal institutions, the variance in host state behavior offers a rich set of new research questions. Fourth, ethnic ties between refugee camp populations, rebel groups, and host state ethnic identities should be incorporated into future analyses. Furthermore, there must be continued efforts to produce new subnational data so that political scientists can better understand the nature of civil conflict. Only with more comprehensive data and increased attention to violent behavior at the subnational level can civil conflict scholars truly delve deeply into finding the frontline of civil wars.

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Table 1: Refugee and Transnational Rebel Host States

Refugee Host to Contiguous Conflict	External Rebel Base Host		
	0	1	Total
0	160	31	191
1	136	96	232
Total	296	127	423

Pearson $\chi^2(1) = 31.5359$ Pr = 0.000

Table 2: Logistic Regression Results: Conflict Incidence

Independent Variable	β (Se_{β})	Odds Ratio	P> t
Nearest Refugee Camp Distance	-0.373*** (.027)	.668 (.019)	.000
Nearest Diamonds Distance	-0.009*** (.002)	.991 (.002)	.000
Nearest Gemstones Distance	.001 (.004)	1.00 (.003518)	.831
GCP/capita	-13.507*** (1.955)	1.36e-06 (2.66e-06)	.000
Cell Population	.052*** (.006)	1.053 (.006)	.000
Forest	.081 (.189)	1.084 (.205)	.669
Mountains	.727*** (.094)	2.068 (.195)	.000
Polity	.058*** (.008)	1.060 (.008)	.000
Urban Center (Travel Time)	-1.049*** (.036)	.350 (.013)	.000
N= 19,310 Log Likelihood= -6777.404*** Pseudo R ² = 0.0916			

Note: ***p<.001

Table 3: OLS Regression Results: Number of Incidents

Independent Variable	β (Se_{β})	P> t
Nearest Refugee Camp Distance	-.165*** (.027)	.000
Nearest Diamonds Distance	-.016*** (.002)	.000
Nearest Gemstones Distance	-.031*** (.003)	.000
GCP/capita	-6.143*** (1.705)	.000
Cell Population	.042*** (.007)	.000
Forest	-.176 (.179)	.326
Mountains	.736*** (.094)	.000
Polity	.044*** (.008)	.000
Urban Center (Travel Time)	-.763*** (.032)	.000
N= 19,310 F-test= 92.21*** R ² = 0.041		

Note: ***p<.001

Appendix B: Map

Figure 1: Refugee Camps, Diamonds, and Conflict in Africa

