Weakening the Enemy
A Disaggregated Study of Violence against Civilians in Africa[1]

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Abstract

While case-based narratives from civil wars often stress the ethnic dimension of civilian atrocities, cross-national studies have found limited evidence in support of such contentions. Addressing this debate, we argue that warring actors often use ethnic affiliation to identify groups of suspected enemy supporters when individual wartime affiliations are not known. Since warring actors depend on their civilian constituencies for support, collective targeting of the enemy's co-ethnics becomes a strategy for weakening the enemy's capacity. Armed actors are thus more likely to engage in civilian abuse in areas where the enemy's ethnic constituency resides. To examine this argument, we combine new geo-referenced event data on violence against civilians in African conflicts, 1989-2009, with spatial data on the location of the warring actors' ethnic constituencies. The analysis shows that the number of civilians killed by both governments and rebel groups are higher in areas inhabited by the enemy's ethnic constituency.

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Introduction

Armed conflicts frequently go hand in hand with massacres and abuse of civilian populations. Popular accounts of civilian atrocities for example from Darfur and the Nuba mountains in Sudan or the conflict in Burundi often testify to the salience of ethnic divisions (see e.g. Human Rights Watch 2003, 2004, 2012) and several qualitative and single case studies emphasize the crucial role of ethnicity in accounting for patterns of wartime civilian abuse (see e.g. Horowitz 1985; Posen 1993; Kaldor 2001; Kaufman 2006; Sullivan 2012). Yet the empirical record of linking patterns of civilian victimization to ethnicity remains mixed at best. Indeed, existing cross-national studies have found little evidence of an ethnic dimension of violence against civilians (Valentino, Huth, and Balch-Lindsay 2004; Valentino, Huth, and Croco 2006; Wood 2010; Azam and Hoeffler 2002; Kim 2010; Querido 2009). However, these studies rely on overly aggregated research designs that are inappropriate for capturing the ways in which ethnicity could be associated with violence against civilians. The question of how ethnicity affects patterns of civilian victimization during civil wars is thus still debated in the existing literature.

Addressing this discrepancy between case studies and large-n studies, we propose a strategic explanation for the salience of ethnicity in influencing wartime patterns of civilian abuse. It is well established that civilian populations generally play a critical role in underpinning the fighting capacity of warring actors (e.g. Kalyvas 2006). Often, the warring actors draw civilian support from intra-ethnic networks (Fearon, 2006; Cederman, Wimmer, and Min 2010; Wucherpfennig et al. 2012). We argue that these ties between warring actors and civilian constituencies translate into war-time incentives for targeting the civilian constituencies of the adversary, and that ethnicity provides a criterion for *collective* targeting when individual wartime affiliations are not known. Since ethnic affiliations can often be ascertained through

visible cues, or inferred more indirectly because ethnic populations frequently live geographically concentrated in distinct areas, ethnicity allows for collective sanctioning of suspected enemy collaborators – through association – even when individual sympathies remain private information. Based on this argument we expect warring actors to engage in more civilian killings in areas inhabited by the enemy's ethnic constituencies.

To evaluate this argument we use geo-referenced event data from the Uppsala Conflict Data Program on direct and deliberate attacks on civilians in armed conflicts in Sub-Saharan Africa between 1989 and 2009 (Sundberg and Melander 2013). Utilizing Geographic Information System (GIS) tools, we combine data on the location of civilian killings with data on the settlement patterns of the ethnic groups from which the warring actors mobilize their support. This disaggregated research design reduces the gap between the level of aggregation of the data and the level at which the proposed theoretical mechanism unfolds. Our results suggest that ethnicity affects wartime patterns of civilian abuse. Both governments and rebels target more civilians in those areas where the adversary's co-ethnics reside, compared to areas with their own co-ethnics, as well as areas with no constituencies of any of the warring parties.

We provide a novel empirical test of the role of ethnicity in explaining patterns of wartime civilian abuse. Whereas the findings may not be at odds with popular conceptions about the significance of ethnicity, such patterns have not previously been corroborated by systematic cross-country comparisons. The article also contributes with a theoretical argument that moves beyond the reference to ancient hatred and inter-ethnic animosity that has dominated popular accounts of such violence. Violence is not caused by ethnic divisions *per se*. Instead, our argument ties in with a growing literature in comparative politics holding that ethnicity is salient

for explaining social outcomes because it is functional in terms of "mobilizing people, policing boundaries, and building coalitions" (Eifert, Miguel, and Posner 2010: 494).

The paper is organized as follows. After situating our study in the relevant literature on ethnicity and wartime violence, we develop a theoretical argument suggesting that warring actors have incentives to strategically target civilian co-ethnics of the enemy as a means to deny the enemy a civilian support base. We then move on to present our research design and data, before discussing the results of the empirical analysis. The final section offers some conclusions.

Ethnicity in Civil War Violence

How does ethnicity affect patterns of civilian victimization during civil wars? Whereas the term ethnic conflict often seems to connote extreme violence and high levels of civilian casualties, empirical studies of the role of ethnicity in explaining variations in civilian targeting are still scarce and the evidence is mixed at best. Much of the relevant literature addresses the question only indirectly by examining the role of ethnicity in determining the location and intensity of civil war violence more generally – not civilian atrocities *per se*.

Several studies examine how ethnic configurations, such as group settlement patterns, account for regional variations in the occurrence of fighting along ethnic lines (e.g. Toft, 2002; Melander 2009; Weidmann 2011, 2009; Cunningham and Weidmann 2010). The theoretical arguments tend either to focus on the way violence serves to reshape the ethnic map (e.g. Posen 1993; Melander 2009) or to attribute violence to ethnic resentment, micro-level rivalry and fear, often induced by ethnic entrepreneurs (e.g. Petersen, 2002; Weidmann 2011). Whereas some of these theoretical arguments explicitly implicate civilian atrocities in the predicted patterns of wartime violence – for example by referring to the risk of ethnic cleansing – the empirical

examination focuses largely on the armed contest between government and rebel forces. One exception is Weidmann's study of Bosnia's civil war (2011), in which he pools civilian and military casualties and concludes that patterns of violence must be attributed both to a macro-level strategy to cleanse ethnically heterogeneous territories and to micro-level polarization. Other empirical studies focus on how ethnicity affects the intensity and intractability of the wartime violence. Based on the observation that ethnic identities are less flexible and more difficult to obscure than political sympathies, scholars have suggested that ethnic wars are likely to implicate the entire ethnic group in the struggle and produce higher levels of battle deaths (Eck 2009).[2]

This global finding resonates with case-based accounts of ethnic conflicts in for example the former Yugoslavia and Rwanda, noting how violence escalated along ethnic lines (e.g. Schneider, Bussmann, and Ruhe 2012; Prunier 1995). Yet, Mueller (2000) challenges the notion that the massiveness of the violence can be attributed to the ethnic dimension *per se*, and argues that ethnic warfare differs little from non-ethnic warfare in that both are waged by small groups of fighters claiming to fight on behalf of a larger entity (see also Kalyvas 2001; Kalyvas and Kocher 2007).

Among the limited number of scholarly works that more explicitly look at violence against civilians, the role of ethnicity is disputed. A few quantitative studies have identified a negative correlation between ethnic fractionalization and violence against civilians, suggesting that conflicts in ethnically divided societies do not see more violence against civilians (Kim 2010; Querido 2009; Azam and Hoeffler 2002). In a sub-national study of Guatemala, Sullivan (2012)

[2] However, Lacina (2006) finds that armed conflicts in ethnically polarized societies are not more intense.

shows that state massacres were indeed more likely the higher the percentage of the rival ethnic group in an area. Yet, cross-national quantitative studies that explicitly account for the type of conflict – whether it is fought over identity issues or along ethnic lines – find little evidence that these conflicts display higher levels of violence against the civilian population (Valentino, Huth, and Balch-Lindsay 2004; Valentino, Huth, and Croco 2006; Wood 2010). Valentino, Huth, and Croco (2006) therefore discard the popular conception that ethnicity "barbarizes warfare" and interpret their findings instead as support for a strategic interpretation of civilian mass-killings as a "calculated military strategy designed to achieve victory by coercing the adversary or by undermining the war-related productive capacity of his civilian population" (ibid, 340).

Violence against Enemy Constituents

In the following section, we develop our argument about the role of ethnicity in accounting for wartime civilian atrocities. Like Valentino, Huth, and Croco (2006) we interpret violence against civilians as a military strategy seeking to undermine the war-waging capacity of the enemy. But unlike them, we place ethnicity at the core of such a strategic explanation of wartime civilian abuse. In doing so, we extend an argument by Humphreys and Weinstein (2006) who suggest that the existence of ethnic ties with the civilian population will restrain warring actors from committing civilian atrocities, since the strength of informal institutions in these cases will induce cooperative behavior, support norms of generalized reciprocity and imply that abuse will be punished.[3] We argue that these same mechanisms that facilitate

[3] Lyall (2010) makes a similar argument to explain the advantage of co-ethnics in counter-insurgency operations in the Second Chechen Wars. Co-ethnics can tap into dense intra-ethnic networks, which facilitate the identification of rebels and help them issue credible threats to civilian for non-cooperation.

mobilization within intra-ethnic networks also create strategic incentives for warring actors to engage in collective targeting of the rival's ethnic constituency. Coercive violence against the enemy's co-ethnics is used to shape civilian behavior, deter collaboration, and undermine the productive capacity of the rival's civilian constituency. Below we develop this argument by discussing how collective targeting can be used to influence patterns of civilian support during war and how the salience of ethnic ties shape incentives for collective targeting.

Ethnicity and civilian support

In most armed conflicts, the cooperation and support of the civilian population is essential for the warring parties to succeed in their military efforts (e.g. Guevara 1961; Tse-tung 2000; Valentino, Huth, and Croco 2006). Besides representing a pool of potential recruits, the civilian population might offer shelter, food, weapons and logistical support, and could represent a significant source of income for warring actors through for example wartime taxes. Civilians also constitute a valuable source of information, for example about enemy troop movements (Wood 2003; Kalyvas 2006). The ability to attract civilian cooperation is thus a clear strategic advantage for warring actors.

Civilian collaboration with warring actors is influenced by various factors, but warring actors and their civilian constituencies are often mobilized along ethnic lines (e.g. Horowitz 1985; Wucherpfennig et al. 2012). First, an important determinant of civilian support to warring actors is pre-existing patterns of social networks in which people are embedded and the collective identities that often encompass them (Wood 2003: 13; Kalyvas 2006: 95). Shared language, cultural homogeneity, and frequent and multifaceted contact reduce transaction costs for within-group mobilization, increase trust among co-ethnics, and facilitate collective action along ethnic lines (Bates 1983; Fearon and Laitin 1996; Humphreys and Weinstein 2006; Eifert,

Miguel, and Posner 2010). Second, the ascriptive nature of ethnicity – in terms of constrained change and visibility – makes it easier to police group boundaries, raise the cost of non-participation and prevent free riders in ethnic coalitions (e.g. Chandra, 2004; Eck 2009). Third, ethnic networks can create a sense of solidarity and moral commitment, offering members social rewards for participating in the war, which also creates more cohesive movements (Gates 2002; Weinstein 2007). Fourth, ethnic groups often share political grievances and preferences over political outcomes, which may facilitate mobilization along ethnic lines (e.g. Horowitz 1985; Kaufmann 1996; Cederman, Wimmer, and Min 2010; Wucherpfennig et al. 2012). Finally, ethnic groups – particularly in Sub-Saharan Africa – tend to cluster geographically (Scarritt and McMillan 1995). This feeds into the organizational advantage of mobilizing warring groups along ethnic lines (Eck 2009; Weidmann 2009; Melander 2009). In short, the presence of intra-ethnic networks facilitates the process of joining or collaborating with a warring actor.

Ethnic ties and collective targeting

We argue that these ties between warring actors and their ethnic constituencies create incentives among warring actors to target the enemy's co-ethnics in order to undermine the strategic advantage offered by strong networks of civilian supporters. The notion that warring actors use coercion as a strategy to attempt to shape the behavior of the civilian population is not novel. Civilians decide whom to cooperate with also based on a concern for survival and security. Several scholars thus highlight the use of violence against civilians as a negative sanction to uphold or establish control and thus influence the patterns of civilian support during a civil war (Mason 1996; Kalyvas 2006; Kalyvas and Kocher 2009, Wood 2010). Kalyvas (2006), for example, explains selective violence as a way to prohibit defection and to secure collaboration.

Yet, targeting of individual defectors and enemy collaborators hinges on the availability of information and denunciations by civilian collaborators. Since such information is often lacking, violence against civilians often displays a more indiscriminate character, where groups of civilians are targeted based on where they live or what group they belong to, rather than on the basis of their individual actions (Steele 2009). 'Collective targeting' implies that civilians are victimized because they fit the profile of an enemy sympathizer. Ethnicity can be used to profile enemy supporters because of the ascriptive nature of ethnic identity. Since ethnicity is determined through descent-based attributes, visibility and constrained change are intrinsic characteristics of ethnic identities (Chandra 2006). 'Visibility' implies that ethnicity often can be determined through superficial observation of for example name, language, physical features and dress (Chandra 2006: 399; Eck 2009). Hence, whereas the actual sympathies of the civilian population might not be known and individuals have incentives to hide their loyalties to prevent reprisals, ethnic identity provides a profiling criterion at the group level on the basis of which warring actors draw inferences about the wartime sympathies of the civilians. Because profiling is at the group level, it is likely to be associated with larger-scale civilian massacres.

Ethnic affiliation might not always carry visible cues, and some ethnic attributes might be easier to disguise (Chandra 2006). Because of this, ethnic affiliation at the individual level will often be observed with some error. Yet, there is often also a territorial aspect that feeds into the salience of ethnicity as a criterion for identifying victims for collective targeting. In many countries, particularly in Sub-Saharan Africa, ethnic groups tend to cluster geographically and inhabit contiguous territories (Scarritt and McMillan 1995). The ethnic geography facilitates collective targeting along rival ethnic lines because it is not only ethnic affiliation that can be used as an identifier of enemy supporter groups, but also their locality. Hence, even if the ethnic identity of an individual may not be public information, the dominant ethnic affiliation of a

village is more likely to be known by the warring parties. The result is often large-scale civilian victimization. In the Southern Kordofan and Blue Nile state in Sudan, for example, the government has engaged in indiscriminate shelling and ground attacks of villages by virtue of the populations' shared ethnic ties and thus perceived links to the SPLA-North (HRW 2012).

Collective targeting serves the purpose of shaping the behavior of the civilian population through association, by collectively sanctioning people suspected of collaborating with the enemy (Kalyvas 2006: 150). Admittedly, the strength of intra-ethnic networks should imply that warring actors face high barriers for mobilizing across ethnic boundaries and have low expected pay-offs from civilian collaboration within the enemy ethnic constituency (Kaufmann 1996). Yet, as noted by Petersen (2001: 8), a community's behavior might move across a set of multiple roles during the course of an armed conflict, from neutrality to collaboration to participation. While not enticing large-scale ethnic defection, targeting of ethnic communities might still deter people from collaborating with the rival actor out of fear of violent reprisals, and thus lead communities to withhold their support and act neutral. Indeed, coercion is a powerful tool that might trump pre-war preferences in how a community relate to the warring actors (Kalyvas 2006: 112-113). More specifically, we see two principal mechanisms through which collective targeting of ethnic constituencies might weaken the capacity of the enemy.

First, violence and terror against enemy ethnic constituencies and their property might lower the productive capacity of the civilian population, and thereby undermine their ability to provide material support, such as food, shelter, wartime taxes, and ultimately even recruits to the warring actor. By striking at the networks that are suspected of providing essential support to a rival, collective targeting serves to interrupt and weaken the supply lines to the adversary and thereby reduce his war-waging capacity (e.g. Balcells 2011; Valentino, Huth, and Balch-

Lindsay 2004; Valentino, Huth, and Croco 2006). Through displacement effects, violence against civilians may also reduce the density of civilian supporters in an area, which in turn means that it is harder for the enemy forces to hide among the population or protect safe refuges (Azam and Hoeffler 2002; Lyall 2009). Violence against enemy constituents is thus essentially a way of managing the threat posed by the adversary (Sullivan 2012). Targeting enemy civilians might not only deplete the base for support in a direct manner; the risk of violent reprisals at the hands of the rival might also deter civilian collaboration and lead them to withhold information, shelter, and supplies from the warring actor out of fear.

Second, attacking the enemy's ethnic constituencies serves to demonstrate to members of this community that the warring actor they affiliate themselves with is unable to protect them. Their concern for security and survival might, in turn, undermine their attitudinal support to this actor. Lyall (2009: 337) notes how indiscriminate violence by the government can insert a wedge between the civilians and the insurgents, if local communities blame the insurgents for their lot. It might also accentuate a perception that the insurgents are the weaker side, thus removing an important incentive for joining the insurgency (ibid: 337). There is no reason to believe this logic is restricted to violence carried out by the government side. In fact, there might even be higher expectations on a government's ability and responsibility to protect its constituency from insurgent attacks and collective punishment of this sort might lead civilian constituencies to withdraw essential support. For example, massive violence against government constituents in Mozambique ultimately forced the government to agree to a settlement of the conflict (Hultman 2009). Just as in wars of attrition, civilian victimization "inflicts costs on noncombatants to coerce a government or rebel organization to cease fighting" (Downes 2006:162).

The efficiency of non-selective targeting in shaping patterns of civilian collaboration is contested. Some scholars argue that collective targeting will only further alienate the community and fortify civilian support to the other side, as seen for example in the Israeli-Palestinian conflict (Jaeger et al. 2012). Specifically, indiscriminate violence could provide incentives to join the enemy for protection (Kalyvas and Kocher 2009; Kocher, Pepinsky, and Kalyvas 2011). Lyall (2009), on the other hand, finds evidence consistent with the notion that indiscriminate violence aggravates the collective action problem on the part of the afflicted actor. Warring actors might also be constrained in their range of choices, and the costs of civilian targeting relative to co-optation seem to be particularly low in ethnically mobilized conflicts. In the words of Kaufmann (1996:145), combatants in ethnically mobilized conflicts "can treat all co-ethnics as friends, without the risk of coddling an enemy agent and can treat all members of the other group as enemies without risk of losing a recruit." In short, while collective targeting of enemy constituents might not entice collaboration, it might still be efficient in deterring collaboration with the enemy and interrupting enemy supply lines. And if it is not, warring actors might have little to lose.

Based on the above argument we derive the following hypotheses:

H1a: In armed conflicts, governments are more likely to rely on collective civilian targeting in areas inhabited by the rebel's ethnic constituency

H1b: In armed conflicts, rebels are more likely to rely on collective civilian targeting in areas inhabited by the government's ethnic constituency

Research Design

Examining the influence of ethnic ties on patterns of civilian targeting poses some challenges. Our theoretical explanation suggests that it is the local configuration of ethnic allegiances that influences a community's risk of becoming the victim of deliberate attacks. The analysis must therefore be conducted at a level of resolution at which we can plausibly observe the suggested mechanism. There are no systematic, cross-sectional data on the ethnic identity of perpetrators and victims/non-victims of one-sided violence. Data availability has thus led most quantitative studies to rely on aggregate measures such as the ethnic configuration of the state or a binary coding to identify ethnic conflicts of identify conflicts when evaluating the influence of ethnicity on wartime dynamics (e.g. Lacina 2006; Valentino, Huth, and Croco 2006; Eck 2009). Yet, such aggregate measures are at best loosely linked to the postulated micro- or group-level mechanisms, and are thus suboptimal when it comes to explaining the substantial sub-national variation in patterns of civilian targeting we observe in conflict settings (cf. Cederman and Girardin 2007; Cederman and Gleditsch 2009). Overcoming challenges related to data availability, we pursue a more disaggregated approach and examine whether the geographical settlement patterns of warring actors' ethnic constituencies coincide with the spatial distribution of one-sided violence events, relying on fixed geographical cells as our units of analysis. This spatial disaggregation reduces the gap between the level of aggregation of the data and the level at which the theoretical explanation unfolds. This section first introduces our data on ethnic constituencies and civilian targeting, before we discuss our unit of analysis and describe how we have constructed our variables.

Data on ethnic constituencies and civilian targeting

To identify the ethnic constituency of the government, which according to our argument is the group most likely to be targeted by one-sided violence by the rebel side, we rely on the Ethnic

Power Relations (EPR) dataset (Cederman, Wimmer, and Min 2010). This data collection builds on a constructivist, Weberian tradition, and understands ethnicity as "a subjectively experienced sense of commonality based on a belief in common ancestry and shared culture" and includes ethno-linguistic, ethno-somatic and ethno-religious groups (ibid: 325). The EPR dataset identifies all politically relevant ethnic groups, i.e. groups where at least one political actor claims to represent the interest of that group in the national political arena or groups that are actively discriminated against, and codes their access to central state power in every country of the world on a yearly basis. We define those ethnic groups that hold dominant or monopoly government positions as constituting the government's ethnic constituency, as they have the most apparent link to the government. The geographical settlement patterns of these groups are provided by the GeoEPR data set, through ethnic groups polygons in GIS shapefile format (Wucherpfennig et al. 2011). The GeoEPR data allows for recording multiple ethnic groups residing in the same locality, and the data also codes major changes in the ethnic settlement patterns. While the GeoEPR thus represents a major improvement over existing national level and time-invariant aggregates of ethnic configurations, it does represent an approximation of the underlying ethnic geography. Short-term changes, for example induced by refugee flows, are not represented in the data, and the data do not fully reflect ethnic heterogeneity at the local level. Combining these two sources, we obtain a spatially disaggregated and time-varying measure of the geographical location of the government's ethnic constituency.

To identify the ethnic constituency of the rebel group, we rely on the ACD2EPR dataset (Wucherpfennig et al., 2012). The ACD2EPR provides information on the link between rebel groups identified by the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al. 2002) and the ethnic groups identified in the EPR data (Cederman, Wimmer, and Min 2010). To make the link from rebel organization to ethnic group, the ACD2EPR dataset draws on information about

both the ethnicity of the fighters, i.e. from which ethnic group the organization recruits, and whether the rebel organization states that it pursues its agenda on behalf of a particular ethnic group.[4] We use the GeoEPR dataset to obtain information about the geographical settlement patterns of these groups (Wucherpfennig et al. 2011).

Our data on violence against civilians come from UCDP GED, a geo-referenced event dataset on one-sided violence from the Uppsala Conflict Data Program (UCDP) (Sundberg and Melander 2013). One-sided violence is defined as "the use of armed force by the government of a state or by a formally organized group against civilians, which results in at least 25 deaths per year" (Eck and Hultman 2007: 235). Hence, each dyadic interaction between a warring actor and civilians that claim more than 25 deaths per year is included in the data. In UCDP GED this dyadic interaction is coded as events, i.e. separate incidents of fatal violence. Each event, in turn, is provided with a geographical reference in the form of a latitude/longitude coordinate, and a fatality estimate.[5] The UCDP GED dataset on one-sided violence is well suited for the purposes of this research. First, our argument pertains to direct and deliberate killings of civilians by warring actors, and the one-sided violence data exclude indirect civilian casualties, e.g. civilians killed in cross-fire or by starvation or displacement. Second, the information provided about the geographical location of civilian targeting in UCDP GED allows us to easily relate the theoretical expectations to the empirical analysis. Given these

[4] Note that both a government and a rebel group can have links with more than one ethnic group.

[5] For more information on the geo-referenced event data see the UCDP GED codebook (Sundberg, Lindgren, and Padskocimaite 2010). For information on data collection and coding procedures of the one-sided violence data, see Eck and Hultman (2007).

considerations, we are not aware of any other data source that can rival UCDP GED in coverage across countries over time.[6]

Data structure and description of variables

Our argument holds that local configurations of ethnic group affiliations with the warring actors influence the risk of one-sided violence. To capture this, our unit of analysis is made up of a spatial/temporal grid structure, covering all of Africa between 1989 and 2009. The data structure comes from PRIO-GRID, a standardized spatial/temporal grid structure introduced to aid the analysis of spatial data, streamline the choice of areal unit to prevent arbitrariness in the growing literature utilizing spatial data, and thereby facilitate replication and extension of existing research (Tollefsen, Strand, and Buhaug 2012). The grid has a resolution of 0.5 decimal degrees latitude/longitude, which correspond to approximately 55x55 km at the equator. This resolution is suitable to our project as it allows even small countries to be represented by multiple grid cells, and the selected grid size corresponds well with the spatial resolution of much of the available data (ibid). Meanwhile, the cells are not too small to constitute meaningful units of analysis for the phenomena we study. Gridded data represent inherently apolitical entities that are fixed in time and space, and insensitive to political boundaries. For this reason, some scholars advocate the use of political sub-national units instead. Yet, for our purpose, the first order administrative units are too large to ensure that civilian targeting and ethnic settlements actually overlap when data is aggregated to this level. The static nature of

[6] While ACLED does provide disaggregated data on violence against civilians in African conflicts (Raleigh 2012), these data do not include actor IDs that can be linked to ethnic groups or other warring actor characteristics that are important for our empirical strategy. Moreover, it covers a shorter time span. For a comparison of UCDP GED and ACLED, see Eck (2012).

the grid structure is arguably also an advantage, allowing for cross-sectional comparison of units that are identical in shape and completely exogenous to our main variables of interest.

From this grid structure, we need to make a deliberate choice regarding which grid cells to include in the analysis. Since our theory concerns one-sided violence used as a deliberate strategy by warring actors, we choose to retain those grid cells that fall within or are in close proximity to the conflict zone of an ongoing armed conflict.[7] As a measure of the territorial extent of the armed conflict we use the time-invariant conflict polygons from the UCDP GED v.1.1 (Croicu and Sundberg 2011). All cells that are within these conflict polygons or are within a 100 kilometers proximity to a conflict zone are included in our analysis. These grid cells are observed annually for all years with an ongoing armed conflict. Since conflicts can be ongoing even if the number of battle-related deaths falls below the intensity threshold and the one-sided violence data are collected independent of armed conflict activity, we choose to retain the cells for two inactive years unless we know the conflict is terminated. Based on these criteria, we have 26 conflict countries, and a total of 5,383 unique cells in our analysis.[8]

The grid is stored in a geographic information system (GIS) format, allowing us to add spatial data on our variables of interest through spatial join operations. Our independent variables are dummy variables denoting whether the warring actors' ethnic constituencies live within the grid cell. The variable *Government constituency* takes the value of 1 if the grid cell intersects with the ethnic group polygon of a group affiliated with the government side, and 0 otherwise.

[7] The UCDP defines an armed conflict as "a contested incompatibility that concerns government or territory or both where the use of armed force between the two parties results in at least 25 battle-related deaths in a year" (Gleditsch et al. 2002: 618-619).

[8] A full list of countries and years included in the analysis is provided in the Online Appendix.

The variable *Rebel constituency* takes the value of 1 if the grid cell intersects with the ethnic group polygon of a group affiliated with the rebel side and 0 otherwise.

To construct our dependent variables we add the one-sided conflict events to our spatial/temporal grid structure. Based on the criteria above, our dataset includes 4471 events of one-sided violence in armed conflicts in Africa between 1989 and 2009.[9] The maps in Figure 1 provide information about the spatial distribution of the one-sided violence events and their magnitude by government and rebel actors. The grey shaded areas show the countries with armed conflict included in the analysis. The size of each circle indicates the intensity category of the events given in each location. As can be seen from the map, government and rebel forces do not necessarily engage in violence against civilians in the same areas. These events record a total of 278,381 casualties as a result of deliberate and direct targeting of civilians. The government side accounts for 34% of the events, but 72% of the casualties, suggesting that government attacks on civilians on average are more lethal. Rebels thus account for 66 % of the events, but 28% of the casualties. Out of 1,642 observations of cell-years seeing one-sided violence events, only 151 saw both rebel and government civilian killings. This supports the contention that the incentives to target civilians are not uniform across actors in each location, but might relate to attributes of the civilian population and their particular link to the warring actors, as suggested by our argument. We construct our two dependent variables – *One-sided violence by government* and *One-sided violence by rebel* – as count variables of the number of civilians killed by respective warring actor within the grid cell each year. We believe that the concept of collective civilian targeting is best accounted for by using the intensity of violence against civilians, rather than simply a dichotomous variable marking whether any one-sided-

[9] Note that the UCDP GED v1.0 only reports events when they accumulate to at least 25 civilians killed by a particular actor in a given year.

violence occurred or not. The latter may encompass single, isolated events of selective killings alongside large-scale massacres. The intensity of violence better captures the presence of collective violence at the group level, which is what our theory predicts.

[Figure 1 here]

Control variables

In order to evaluate whether the presence of warring actors' ethnic constituencies helps explain the spatial distribution of one-sided violence it is essential to control for potentially confounding variables at the local level. Ethnic geography will not be independent of spatial patterns in the level of urbanization, industrialization, and the distribution of wealth across a territory (Bates 1983). Moreover, similar to other types of political violence, one-sided violence could be related to local levels of socio-economic development (Buhaug et al. 2011; Hegre, Østby, and Raleigh 2009). We therefore include a control for absolute level of *Income* in the cell using the G-ECON data, which provide spatially disaggregated data on economic activity (Nordhaus 2006). Population density is known to influence political violence and could also be related to ethnic settlement patterns (Raleigh and Hegre 2009). We generate cell-specific measures for *Population density* using spatial data from CIESIN. Both data are reported in 5-year intervals, beginning in 1990, and we linearly interpolate in between the data points within each panel. Both variables are taken from PRIO-grid (Tollefsen 2012; Tollefsen, Buhaug, and Strand 2012).

Targeting of civilians is often closely linked to the military contestation between the government army and the rebel forces (e.g. Eck and Hultman 2007; Schneider, Bussmann, and

Ruhe 2012). Ethnic power relations and settlement patterns could also be related to civil war. We therefore include a dummy variable controlling for whether there were active battles between the government and rebel forces in the cell the previous year. The *Civil war events* variable is also taken from the UCDP GED (Sundberg and Melander 2013). We also know from previous studies that the issue at stake is relevant for understanding how the conflict is fought. In particular, ethnicity tends to be more salient in conflicts concerning territory (Toft 2002). We therefore include a dummy for whether the rebels make any claims to a particular territory or not – *Territorial conflict* – as coded by the UCDP. Organizational capacity might both be endogenous to the size of the recruitment base and influence patterns of civilian targeting (Bhavnani, Miodownik, and Choi 2011; Wood 2010). We thus include a control for *Strong rebels,* with a dummy variable taking the value of 1 in conflicts where rebel groups are at parity or strong relative to the government. Data are taken from Cunningham, Gleditsch, and Salehyan (2009) and incorporates both mobilization and fighting capacity, the strength of the central command, and the ability to procure arms. Finally, we control for *Distance to capital*, since both ethno-political topographies and violence against civilians might be influenced by location relative to the center of political power.

The units of analysis in our cross-section time series dataset are not independent across time and space. To control for spatial correlation we include spatial lags for each dependent variable, *Spatial lag DV*, denoting whether one-sided violence events by the respective warring actors occurred in the first-order neighboring cells the previous year. We also include a control for temporal dependence between our units by including the variable *Time since DV*, which counts the number of years since past one-sided violence by each respective actor, and include this measure alongside cubed and squared versions to capture non-linear effects (Carter and Signorino 2010). Since violence against civilians might also be a reciprocation of the

opponent's violence against civilians, we include a control for the number of civilians killed by the adversary at the same location in the previous year, *OSV by adversary*.[10]

Given the nature of our dependent variables, as counts of civilians killed, we use a negative binomial regression model (Long 1997). First, this estimator accounts for over-dispersion of the dependent variable, which is a characteristic of our dependent variables due to a large number of zeros in combination with high counts of civilian deaths in other instances. Second, it is suitable when there is contagion in the dependent variable, which in our case means that the rate at which civilians are killed in one location is not independent from how many civilians have already been killed in that location in the same year.

Results

In this section we present our main findings. Our theoretical argument holds that warring actors use violence against civilians in a strategic manner to undermine the civilian support base of their opponent and that ethnicity provides a marker for identifying the enemy's civilian constituency. We begin by evaluating the first hypothesis, which suggests that governments are likely to engage in more civilian targeting in areas where the rebels' ethnic constituency lives. As reported in Table I, Model 1, the variable *Rebel constituency* has a positive and significant effect, suggesting that governments are likely to target more civilians in locations populated by the ethnic group from which the rebel group draws its support, relative to areas where such population groups do not live. This lends support to the first hypothesis.

[10] Table with descriptive statistics for all variables are available in the Online Appendix.

As a robustness test we estimate the model using a zero-inflated negative binomial (ZINB) regression model. The ZINB model generates two sets of estimates: the first one (i.e. the logit inflation) estimates the probability of a non-occurrence and the second estimates a count of the number of people killed. It thus allows for modeling the potentially different processes underlying the likelihood of violence occurring in an area and the intensity of that violence. Model 2 shows that rebel constituency reduces the probability of a zero count (inflation model), while also increasing the intensity of violence against civilians. Hence, areas inhabited by ethnic groups affiliated with the rebel group are both more likely to see violence against civilians and more likely to see higher levels of violence against civilians.

[Table I here]

Model 3 evaluates the second hypothesis, which stipulates that rebels are likely to target more civilians in areas inhabited by groups with ethnic ties to the government. Also this hypothesis receives empirical support as the variable *Government constituency* has a positive and significant effect. For robustness, Model 4 evaluates the same hypothesis using a ZINB estimator. The result shows that areas with the government's ethnic constituency are likely to see more violence against civilians by rebel groups, as the presence of a government constituency remains a significant predictor of higher number of civilians killed by rebel actors. However, the inflation model also reveals that government constituency is not associated with a lower probability of a zero count. In other words, while the targeting of civilians within government ethnic constituencies is more atrocious and rebels use more violence against civilians in these areas, rebel attacks are not confined to these areas.

The influence of enemy constituency on the use of one-sided violence by governments and rebels groups is significant also in substantive terms. Figure 2 displays the predicted values of one-sided violence (OSV) by both governments and rebels, comparing areas with and without an enemy ethnic constituency. We calculate predicted levels of violence, holding all control variables constant at their median value, but setting the spatial lag and civil war events variable to 1 to identify cells with a higher baseline risk of civilian targeting.[11] The predicted number of civilians killed by governments is more than five times higher in areas where the rebel constituency lives compared to non-constituency areas, increasing from 1.8 to 10.2. The predicted number of civilians killed by rebels more than doubles when comparing areas of government constituencies to non-constituency areas, increasing from 8.9 to almost 22.1. Note that these are the residual effects of enemy ethnic constituencies, when controlling for conflict events and other strong determinants of one-sided violence, identified in the existing literature.

[Figure 2 here]

Thus far, our findings have corroborated our theoretical expectations that areas inhabited by the enemy ethnic constituency see more one-sided violence, relative to areas without such constituencies. Yet, to evaluate our argument, we also need a better comprehension of warring actors' use of civilian targeting in areas with other ethnic configurations. In Table II we report

[11] All estimations of substantive effects were made using Clarify software (Tomz, Wittenberg, and King 2003). When holding all violence dummy lags at 0, thus identifying all cells with the lowest risk of seeing one-sided violence, the predicted number of civilians killed is naturally much lower – nevertheless, enemy constituency areas still see more violence by both governments and rebels and the differences in percent are similar to those reported in Figure 2. In the appendix, we provide additional scenarios for predictions, as well as a comparison with the effect of other independent variables.

additional models where we make a more explicit comparison of the influence of different ethnic constellations on the occurrence of civilian targeting by government and rebel actors.

[Table II here]

First, an alternative explanation for the strong finding relating to government targeting of rebel constituencies is that governments engage in more targeting of civilians among marginalized and rural population groups in general. Rebel constituencies might just be one among many vulnerable population groups residing in state peripheries. If this reasoning is correct, we should expect to see a similar dynamic of civilian targeting by the government in areas that host marginalized population groups in general, not specifically the home of the rebel group's ethnic constituency. To examine this argument we construct a variable that identifies all areas that are inhabited by ethnic groups that are excluded from state power, but do not have any ties with a rebel group.[12] The results are reported in Table II, Model 5. Corroborating our strategic argument, the presence of excluded constituencies does not increase the prevalence of civilian targeting by governments. The coefficient for *Excluded no constituency* in fact has a negative and statistically significant effect. Together with the results in Table I, this suggests that governments deliberately target the support base of the rebels, rather than targeting marginalized groups in state peripheries in general.

A second concern is that the comparison between enemy and non-enemy constituencies does not fully explore the logic of strategic targeting, since armed actors also direct violence against civilians within their own constituencies to deter defection and enforce collaboration (Kalyvas

[12] The variable is coded based on the "excluded" category in the Ethnic Power Relations Dataset, the Geo-EPR data and the ACD2EPR dataset.

2006). While our argument regarding collective targeting is not incompatible with warring actors' use of selective violence against co-ethnics, it would strengthen our argument to show that civilian killings are not simply a by-product of the war being fought in particular territories where levels of civilian targeting by all parties are equally high. The fact that rebel and government use of one-sided violence only concur in fewer than 10% of the cases suggests that this is not the case. Yet, to further address this concern, we examine whether we see more or less violence against enemy constituencies relative to the actors' own constituency. Model 6 replicates Model 1, but includes government constituency as an additional independent variable. While rebel constituency still has a positive and significant effect, government constituency does not have a significant effect on the level of violence against civilians. Governments thus follow a clear pattern in their targeting of the civilian population – areas with potential rebel supporters see high levels of violence while areas with their own support groups do not see an increased risk of violence. Model 7 replicates Model 3, and estimates the number of civilians killed by rebel groups, but now with the inclusion of rebel constituency as an additional variable. Government constituency has a positive and significant effect as before, but so does rebel constituency. Hence, while rebels are more violent towards likely government supporters, they do not exempt their own supporters from violence. Yet, in substantive terms the effect of government constituency is stronger than that of rebel constituency, meaning that rebels are more violent in areas inhabited by government constituencies. When rebels engage in coercive tactics among their own constituents, such violence does not reach the same intensity. It may be that it is more selective at the individual level, since the rebels are likely to have more information about the actions of individuals within their strongholds. Violence against enemy constituents is more intense since the rebels then engage in collective targeting of groups that are "guilty by association."

We conduct a number of additional tests to assess the robustness of the results. All robustness tests are conducted on Model 1, 3, 6, and 7, as these contain our main results. Due to space constraints, all tables are provided in the Online Appendix, alongside a more extended discussion of these results. We conduct a first set of robustness tests where we re-estimate our models using several different selection criteria for identifying relevant grid cells. First, one might suspect that the influence of enemy ethnic constituency results from fighting offensives; where violence against civilians is merely a by-product of battle-related activities. We do control for civil war battles in our model, but to further evaluate this contention we also examine the patterns of civilian targeting only in cells *without* battles between the government and the warring actors. Also in this sub-sample, both our hypotheses are supported. This finding reflects a large number of observations: within the conflict zones, 59 percent of all government one-sided violence and 44 percent of all instances of rebel one-sided violence take place without a concurrent battle-related event. The observation that patterns of civilian abuse do not necessarily co-vary with the location of battles between government and rebel armies is also supported by Raleigh (2012). This raises the question whether our initial focus on conflict zones might be too restrictive, missing coercive tactics against civilians outside of the immediate conflict areas. As a second robustness, we thus expand our sample to include all cells in conflict countries, not only those cells that fall within the conflict zone. This specification does not alter our main findings regarding the influence of enemy ethnic constituency. Third, our focus on civilian targeting in high-resolution data is likely to yield both a rare events problem, as we have many cells with a zero count and aggravate spatial dependence between units. To handle this problem Buhaug et al. (2011) suggest a case control design of comparing cells with a non-zero count with a random sample of zero count observations. We follow their approach and retain all cells with a positive count on our dependent variables and a random sample of 10% of cells in the conflict zone without civilian targeting. The results do not change substantively.

Finally, working with spatially disaggregated data raises concerns about the modifiable areal unit problem, i.e. that statistical result can differ depending on the level of aggregation and the size and zoning of the unit used to measure the data (Gleditsch and Weidman 2012). The size of the grid cell is to some extent arbitrary, and as robustness we have therefore also run our analysis using a scaled-up version of the spatial grid structure, which is 1 decimal degrees latitude/longitude in size. The main results remain unaltered.

In a second set of robustness tests, we examine different specifications of the dependent variable. First, we recognize that moving to a more geographically fine-grained analysis might amplify some reliability problems, particularly related to georeferencing events. The UCDP GED provide precision scores to all of their events in a 7-point category, and for robustness we have retained only those events with a precision score of 4 or better (see Sundberg, Lindgren, and Padskocimaite 2010). Our results are robust to this specification. Second, our measure of government violence does not include violence committed by militia groups that are affiliated with the government. The civilian atrocities at the hand of the Janjaweed in Darfur, Sudan, is one example of how civilian targeting in armed conflicts is delegated to pro-government militias. The omission of such groups might thus obscure some of the dynamics of the government strategy. In the one-sided violence data 153 events and 5316 fatalities are perpetrated by non-state actors that have clear ties to the government. These are excluded in our main analysis. When we recode the variable for government violence also to include violence from pro-government militias, the results do not significantly differ from our findings reported above. As a final robustness we identify and drop a few cases of outlier events, in particular in Rwanda and the Democratic Republic of Congo. Dropping these outliers does not alter the conclusions regarding our variables of interest.

The results from our control variables suggest some interesting patterns. First, we find strong evidence of temporal and spatial clustering of political violence, as well as an increase in violence against civilians after battle events (except in the ZINB models).[13] However, there is no evidence of a process of reciprocal violence against civilians – violence against civilians by one side does not lead to an increase in violence against civilians by the other. If anything, there seem to be a weak negative effect. This lends support to the understanding that violence against civilians is not just acts of revenge along ethnic lines. Even if armed actors target civilians along ethnic lines, it does not mean that such violence reflects a conflict between ethnic groups where violence against one group spurs violence against the other. Instead, civilians are abused by the warring actors for strategic purposes. In general, the levels of violence against civilians are higher in densely populated areas, as well as in less developed areas. Territorial conflicts see less violence against civilians. While distance to capital does not display a strong pattern, it seems like rebels target more civilians the further away they are from the capital, while the reverse is the case for governments. Strong rebels have a negative effect on government violence but a positive effect on rebel violence, which reflects the importance of relative power distribution. Rebels are more violent when they are strong relative to the government, while the government is more violent when it is strong relative to the rebels. High levels of violence against civilians can therefore be viewed not necessarily as a weapon of the weak, but as a strategy employed by relatively strong groups that have the capacity to operate outside of their own constituency areas and thus target enemy constituents as a means of further weakening the enemy.

[13] We also ran the main models with a spatial lag including violence in the second-order neighboring cells, obtaining the same results.

In this study we subject our theoretical argument to empirical testing using data on civilian targeting in armed conflicts in Africa during the past two decades. Currently, this is the only region from where we have geo-referenced events data on this form of violence. Are the results likely to be restricted to Africa or will they travel to other regions? In some aspects, Africa constitutes a "most likely case" to support the argument. Several scholars testify to the salience of ethnicity in African politics, stating that ethnic cleavages are the most cost-efficient strategic resources for organizing collective action in the region (e.g. Bates 1983; Scarritt and McMillan 1995; Eifert, Miguel, and Posner 2010). However, mobilization along ethnic lines is certainly not unique to armed conflicts in Africa. Whereas 88% of all conflict years in Africa since the end of the Cold War saw warring actors mobilizing along ethnic lines, the corresponding number for Asia is 75% and for Europe 81%.[14] These numbers clearly testify to the significance of ethnic affiliations in armed conflicts worldwide. Some of the most well-investigated case studies of the role of ethnicity in civilian targeting are from outside of the African context, the wars in the former Yugoslavia and Sri Lanka being cases in point. The argument we present is general in scope, and not limited to particular characteristics of the African context. Hence, we do believe that the results are likely to hold more generally, but future research should probe this issue further as new data become available.

Conclusions

The role of ethnicity in affecting wartime patterns of civilian killings has received scant attention in the quantitative literature. We argue that ethnic ties between civilian populations

[14] These numbers build on data from Eck (2009), with 2004 as the last year of observation.

and warring parties may provide the adversary with strategic incentives to collectively target groups perceived as enemy supporters. In support of this argument, our results suggest that warring actors are likely to engage in more violence against civilians in areas inhabited by the enemy's ethnic constituency. Previous research has acknowledged the use of violence against civilians as a way of undermining the capacity of the enemy, but at the same time refuted the importance of ethnicity (Valentino, Huth, and Balch-Lindsay 2004; Valentino, Huth, and Croco 2006). However, our findings suggest that these might not be competing perspectives, but rather that the mechanism of targeting the support base of the enemy is strengthened when the warring actors display ethnic ties to civilian constituencies.

When emphasizing the salience of ethnicity in understanding wartime patterns of civilian targeting, we do not claim that ethnic affiliation necessarily predicts individual political behavior. Nevertheless, in times of war simple categorizations based on identity tend to override more general categories like "civilians" (Slim 2007: 183-188). Collective violence based on ethnic affiliation will be attractive precisely because information about individual wartime affiliations is not known. Civilians are then identified as accomplices through association, regardless of their true individual attitudes, which in the end make ethnic cleavages self-reinforcing and a product of the violence itself (Kaufmann 1996:144). Importantly, this argument does not suggest that ethnic divisions in themselves are the cause of violence. We agree with Mkandawire (2002) that one should avoid a simplistic explanation for violence against civilians in Africa based on ethnic animosity and ancient hatreds. Ethnic identities may, nevertheless, be used as an "ordering device" to classify a population group as enemy constituents (cf. Mueller 2000).

While our disaggregated research design significantly narrows the gap between the level of aggregation of the data and the level at which the theoretical explanation unfolds, the conclusions we can make nevertheless come with some important caveats. First, the empirical analysis takes the ethnic group as given, and does not take into account that identity formation and ethnic divisions are ongoing processes that are partly endogenous to the processes we are interested in explaining (Brubaker 2004; Kalyvas 2008). Systematic, comparative analysis necessitates some quantification, and as a result ethnicity becomes reduced to static and mutually exclusive categorization that more sophisticated theoretical discussions about ethnicity warns against (Graham and Langer 2010: 35). While improving on previous studies, the data on ethnic constituencies is nevertheless an approximation of the underlying ethnic geography of an area. We are cognizant of these limitations, and welcome future qualitative and quantitative work that can probe a more nuanced operationalization of wartime ethnic affiliations and local ethnic group configurations. Second, the disaggregation itself also carries with it some weaknesses. One of them is the problem of accounting for processes more visible on the macro level, for example conflict dynamics, or processes without a clear spatial dimension, such as the influence of international actors. With these limitations in mind, we conclude that our analysis still provides evidence for the strategic role of ethnic support networks in producing collective violence against civilians.

References

Azam, Jean-Paul and Anke Hoeffler. 2002. "Violence Against Civilians in Civil Wars: Looting or Terror?" *Journal of Peace Research* 39 (4): 461–485.

Balcells, Laia. 2011. "Continuation of Politics by Two Means: Direct and Indirect Violence in Civil War." *Journal of Conflict Resolution* 55 (3): 397–422.

Bates, Robert. 1983. "Modernization, Ethnic Competition and the Rationality of Politics in Contemporary Africa." In *State versus Ethnic Claims: African Policy Dilemmas*, edited by Donald Rotchild and Victor Olorunsola, 152-71. Boulder: Westview Press.

Bhavnani, Ravi, Dan Miodownik, and Hyun Jin Choi. 2011. "Three Two Tango: Territorial Control and Selective Violence in Israel, the West Bank, and Gaza." *Journal of Conflict Resolution* 55 (1): 133–158.

Buhaug, Halvard, Kristian Skrede Gleditsch, Helge Holterman, Gudrun Østby, and Andreas Forø Tollefsen. 2011. "It's the Local Economy Stupid! Geographic Wealth Dispersion and Conflict Outbreak Location." *Journal of Conflict Resolution* 55 (5): 814–840.

Brubaker, Rogers. 2004. *Ethnicity without Groups*. Cambridge, MA: Harvard University Press.

Carter, David B. and Curtis S. Signorino. 2010. "Back to the future: Modeling time dependence in binary data." *Political Analysis* 18 (3): 271–292.

Cederman, Lars-Erik and Luc Girardin. 2007. "Beyond Fractionalization: Mapping Ethnicity onto Nationalist Insurgencies." *American Political Science Review* 101 (1): 173–185

Cederman, Lars Erik and Kristian Gleditsch. 2009. "Introduction to Special Issue on "Disaggregating Civil War." *Journal of Conflict Resolution* 53 (4): 487–495.

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

Chandra, Kanchan. 2004. *Why Ethnic Parties Succeed. Patronage and Ethnic Head Counts in India*. Cambridge: Cambridge University Press.

Chandra, Kanchan. 2006. "What is Ethnic Identity and Does It Matter?" *Annual Review of Political Science* 9: 397–424.

Croicu, Mihai and Ralph Sundberg. 2012. UCDP GED Conflict Polygons Dataset Codebook version 1.1-2011." UCDP, Department of Peace and Conflict Research, Uppsala University.

Cunningham, Kathleen Gallagher, and Nils B. Weidmann. 2010. "Shared Space: Ethnic Groups, State Accommodation, and Localized Conflict." *International Studies Quarterly* 54(4): 1035–1054.

Cunningham, David E., Kristian Skrede Gleditsch, and Idean Salehyan. 2009. "It Takes Two: A Dyadic Analysis of Civil War Duration and Outcome." *Journal of Conflict Resolution* 53 (4): 570–597.

Downes, Alexander B. 2006. "Desperate Times, Desperate Measures: The Causes of Civilian Victimization in War." *International Security* 30 (4): 152–195.

Eck, Kristine. 2012. "In Data We Trust? A Comparison of UCDP GED and ACLED conflict events datasets." *Cooperation and Conflict* 47(1): 124–141.

Eck, Kristine. 2009. "From Armed Conflict to War: Ethnic Mobilization and Conflict Intensification." *International Studies Quarterly* 53 (3): 369–388.

Eck, Kristine and Lisa Hultman. 2007. "One-Sided Violence Against Civilians in War: Insights from New Fatality Data." *Journal of Peace Research* 44 (2): 233–246.

Eifert, Benn, Edward Miguel, and Daniel N. Posner. 2010. "Political Competition and Ethnic Identification in Africa." *American Journal of Political Science* 54 (2): 494–510.

Fearon, James D. 2006. “Ethnic Mobilization and Ethnic Violence.” In *Oxford Handbook of Political Economy,* edited by Barry R. Weingast and Donald Wittman 852–868. Oxford: Oxford University Press.

Fearon James D. and David D. Laitin. 1996. “Explaining Inter-Ethnic Cooperation”, *American Political Science Review* 90 (4): 715–735.

Gates, Scott. 2002. “Recruitment and Allegiance: The Microfoundations of Rebellion.” *Journal of Conflict Resolution* 46(1): 111–130.

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

Gleditsch, Kristian and Nils B. Weidman 2012. “Richardson in the Information Age: Geographic Information Systems and Spatial Data in International Studies*.” Annual Review of Social Science* 2012 (15): 461 –481.

Graham K. Brown & Arnim Langer. 2010. “Horizontal inequalities and conflict: a critical review and research agenda.” *Conflict, Security & Development* 10 (1): 27–55

Guevara, Che. 1961. *Guerrilla Warfare*. New York: Monthly Review Press.

Hegre, Håvard, Gudrun Østby, and Clionadh Raleigh. 2009. “Poverty and Civil War Events: A Disaggregated Study of Liberia.” *Journal of Conflict Resolution* 53 (4): 598–623.

Horowitz, Donald. 1985. *Ethnic Groups in Conflict*. Berkeley and Los Angeles: University of California Press.

Hultman, Lisa. 2009. “The Power to Hurt in Civil War: The Strategic Aim of Renamo Violence.” *Journal of Southern African Studies* 35 (4): 821–834.

Human Rights Watch. 2012. “Under Siege. Indiscriminate Bombing and Abuses in Sudan Southern Kordofan and Blue Nile States”. *Human Rights Watch Report:* December 2012.

Human Rights Watch. 2004. “Darfur in Flames: Atrocities in Western Sudan.” *Human Rights Watch Report* Vol. 16, No. 5(A).

Human Rights Watch. 2003. “Everyday Victims: Civilians in the Burundian War.” *Human Rights Watch Report* Vol. 15, No. 20(A).

Humphreys, Macartan and Jeremy Weinstein. 2006. “Handling and Manhandling Civilians in Civil War: Determinants of the Strategies of Warring Factions.” *American Political Science Review* 100 (3): 429–447.

Jaeger, David, Esteban Klor, Sami Miaari and Daniele Paserman. 2012. “The Struggle for Palestinian Hearts and Minds: Violence and Public Opinion in the Second Intifada”, *Journal of Public Economics* 96 (3-4): 354–368.

Kaldor, Mary. 2001. *New & Old Wars: Organized Violence in a Global Era*. Cambridge: Polity Press.

Kalyvas, Stathis. 2008. “Ethnic Defection in Civil War.” *Comparative Political Studies* 41 (8): 1043–1068.

Kalyvas, Stahtis N. 2006. *The Logic of Violence in Civil War*. Cambridge: Cambridge University Press.

Kalyvas, Stathis, N. 2001. “’New’ and ‘Old’ Civil Wars: A Valid Distinction?” *World Politics* 54 (1): 99–118.

Kalyvas, Stathis N. and Matthew A. Kocher. 2009. “The Dynamics of Violence in Vietnam: An Analysis of the Hamlet Evaluation System (HES).” *Journal of Peace Research* 46 (3): 335–355.

Kalyvas, Stathis N. and Matthew A. Kocher. 2007. “Ethnic Cleavages and Irregular War: Iraq and Vietnam.” *Politics & Society* 35 (2): 183–223.

Kaufman, Stuart J. 2006. “Symbolic Politics or Rational Choice? Testing Theories of Extreme Ethnic Violence.” *International Security* 30 (4): 45–86.

Kaufmann, Chaim. 1996. “Possible and Impossible Solutions to Ethnic Civil Wars.” *International Security* 20(4): 136-175.

Kim, Dongsuk. 2010. “What Makes State Leaders Brutal? Examining Grievances and Mass Killing during Civil War.” *Civil Wars* 12 (3): 237–260.

Kocher, Matthew Adam, Thomas B. Pepinsky, and Stathis N. Kalyvas. 2011. “Aerial Bombing and Counterinsurgency in the Vietnam War.” *American Journal of Political Science* 55 (2): 201–218.

Lacina, Bethany. 2006. “Explaining the Severity of Civil Wars”, *Journal of Conflict Resolution* 50 (2): 276–289.

Long, Scott J. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks: Sage Publications.

Lyall, Jason. 2010. “Are Coethnics More Effective Counterinsurgents? Evidence from the Second Chechen War.” *American Political Science Review* 104 (1): 1–20.

Lyall, Jason. 2009. “Does Indiscriminate Violence Incite Insurgent Attacks? Evidence from Chechnya.” *Journal of Conflict Resolution* 53 (3): 331-362.

Mason, David T. 1996. “Insurgency, Counterinsurgency, and the Rational Peasant.” *Public Choice* 86 (1-2): 63–83.

Melander, Erik. 2009. “The Geography of Fear: Regional Ethnic Diversity, the Security Dilemma and Ethnic War.” *European Journal of International Relations* 15 (1): 95–124.

Mkandawire, Thandika. 2002. “The Terrible Death Toll of Post-Colonial ’Rebel Movements’ in Africa: Towards an Explanation of the Violence against the Peasantry.” *Journal of Modern African Studies* 40 (2): 181–215.

Mueller, John. 2000. “The Banality of ‘Ethnic War’.” *International Security* 25(1): 42–70.

Nordhaus, William D. 2006. “Geography and macroeconomics: New data and new findings.” *Proceedings of the National Academy of Sciences*, 103 (10): 3510–3517.

Petersen, Roger D. 2002. *Understanding Ethnic Violence: Fear, Hatred, and Resentment in Twentieth-Century Eastern Europe*. Cambridge: Cambridge University Press.

Petersen, Roger D. 2001. *Resistance and Rebellion: Lessons From Eastern Europe* Cambridge: Cambridge University Press.

Posen, Barry R. 1993. "The Security Dilemma and Ethnic Conflict." In *Ethnic Conflict and International Security*, edited by Michael E. Brown, 102–124. Princeton, N.J.: Princeton University Press.

Prunier, Gérard. 1995. *The Rwanda Crisis: History of a Genocide*. New York, NY: Columbia University Press.

Querido, Chyanda M. 2009. "State-Sponsored Mass Killing in African Wars—Greed or Grievance?" *International Advances in Economic Research* 15(3): 351–361.

Raleigh, Clionadh. 2012. "Violence Against Civilians: A Disaggregated Analysis." *International Interaction* 38 (4): 462–481.

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

Scarritt, James and Susan McMillan. 1995 "Protest and Rebellion in Africa: Explaining Conflicts Between Minorities and the State in the 1980s." *Comparative Political Studies* 28 (3): 323-349.

Schneider, Gerald, Margit Bussmann and Constantin Ruhe. 2012. "The Dynamics of Mass Killings: Testing Time-Series Models of One-Sided Violence in the Bosnian Civil War." *International Interactions* 38 (4): 443–461.

Slim, Hugo. 2007. *Killing Civilians: Method, Madness and Morality in War*. London: Hurst & Company.

Steele, Abbey. 2009. "Seeking Safety: Avoiding Displacement and Choosing Destinations in Civil Wars." *Journal of Peace Research* 46 (3): 419–430.

Sullivan, Christopher M. 2012. "Blood in the Village: A Local-Level Investigation of State Massacres." *Conflict Management and Peace Science* 29(4): 373–396.

Sundberg, Ralph, Mathilda Lindgren and Ausra Padskocimaite. 2010. "UCDP GED Codebook version 1.0-2011", Department of Peace and Conflict Research, Uppsala University. Available at http://www.ucdp.uu.se/ged/data.php. Accessed August 2012.

Sundberg, Ralph, and Erik Melander. 2013. "Introducing the UCDP Georeferenced Event Dataset." *Journal of Peace Research* 50(4): forthcoming.

Tollefsen, Andreas F. 2012. PRIO-GRID Codebook http://www.prio.no/upload/ cscw/PRIO-GRID/PRIO -GRID_codebook_v1_01.pdf (Accessed August 2012)

Tollefsen, Andreas. F., Håvard Strand, and Halvard Buhaug. 2012. "PRIO-GRID: A unified spatial data structure." *Journal of Peace Research,* 49 (2): 363-74.

Toft, Monica Duffy. 2002. "Indivisible Territory, Geographic Concentration, and Ethnic War." *Security Studies* 12 (2): 82–119.

Tomz, Michael, Jason Wittenberg, and Gary King. 2003 "CLARIFY: Software for Interpreting and Presenting Statistical Results. Version 2.1." Stanford University, University of Wisconsin and Harvard University.

Tse-tung, Mao. 2000. *On Guerrilla Warfare* (translated by Samuel B. Griffith II). Urbana & Chicago: University of Illinois Press.

Valentino, Benjamin, Paul Huth, and Dylan Balch-Lindsay. 2004. "Draining the Sea: Mass Killing and Guerrilla Warfare." *International Organization* 58 (2): 375–407.

Valentino, Benjamin, Paul Huth, and Sarah Croco. 2006. "Covenants Without the Sword: International Law and the Protection of Civilians in Times of War." *World Politics* 58 (April): 339–377.

Weidmann, Nils B. 2011. "Violence 'from above' or 'from below'? The Role of Ethnicity in Bosnia's Civil War." *Journal of Politics* 73 (4): 1–13.

Weidmann, Nils B. 2009. “Geography as Motivation and Opportunity: Group Concentration and Ethnic Conflict.” *Journal of Conflict Resolution* 53 (4): 52–543.

Weinstein, Jeremy M. 2007. *Inside Rebellion: The Politics of Insurgent Violence*. Cambridge: Cambridge University Press.

Wood, Elisabeth. 2003. *Insurgent Collective Action and Civil War in El Salvador*. Cambridge: Cambridge University Press.

Wood, Reed M. 2010. “Rebel Capability and Strategic Violence against Civilians.” *Journal of Peace Research* 47 (5): 601–614.

Wucherpfenning, Julian, Nils Metternich, Lars-Erik Cederman, and Kristian Skrede Gleditsch. 2012. “Ethnicity, the State and the Duration of Civil War.” *World Politics* 64(1): 79-115.

Wucherpfennig, Julian, Nils B. Weidmann, Luc Girardin, Andreas Wimmer, and Lars-Erik Cederman. 2011. “Politically Relevant Ethnic Groups across Space and Time: Introducing the GeoEPR Dataset.” *Conflict Management and Peace Science* 28 (5): 423–37.

Table 1. Enemy Constituencies and the Intensity of Violence against Civilians

	Model 1 OSV Govt	Model 2 OSV Govt	Model 3 OSV Rebel	Model 4 OSV Rebel
Negative binomial				
Rebel constituency	1.783	1.546		
	(0.324)***	(0.382)***		
Govt constituency			0.867	0.857
			(0.353)**	(0.229)***
$Population_{log}$	0.662	0.051	0.785	0.138
	(0.137)***	(0.145)	(0.090)***	(0.063)**
$Income_{log}$	-2.299	-1.160	-0.916	-1.076
	(0.262)***	(0.356)***	(0.142)***	(0.103)***
Distance to $capital_{log}$	-0.053	-0.640	0.402	0.037
	(0.187)	(0.190)***	(0.159)**	(0.085)
Strong rebels	-1.750	0.587	0.609	-0.053
	(0.541)***	(0.609)	(0.354)*	(0.226)
Territorial conflict	-1.901	-1.782	-1.664	-0.945
	(0.438)***	(0.414)***	(0.265)***	(0.201)***
Civil war $events_{t-1}$	1.768	-0.593	2.600	0.060
	(0.340)***	(0.349)*	(0.380)***	(0.157)
OSV by $adversary_{t-1}$	-0.001	-0.001	-0.000	-0.000
	(0.001)	(0.000)**	(0.000)***	(0.000)
Time since DV	-1.772	-0.187	-0.717	-0.089
	(0.285)***	(0.184)	(0.150)***	(0.101)
Spatial lag (DV)	2.722	-0.446	2.268	-0.261
	(0.456)***	(0.407)	(0.263)***	(0.168)
Constant	15.663	14.343	1.186	9.786
	(2.877)***	(3.343)***	(1.740)	(1.143)***
Inflation model				
Rebel constituency		-0.528		
		(0.170)***		
Govt constituency				0.135
				(0.179)
$Population_{log}$		-0.473		-0.443
		(0.060)***		(0.045)***
$Income_{log}$		0.622		0.087
		(0.133)***		(0.080)
Distance to $capital_{log}$		-0.233		-0.143
		(0.111)**		(0.078)*
Strong rebels		0.938		0.298
		(0.230)***		(0.160)*
Territorial conflict		0.321		0.829
		(0.188)*		(0.168)***
Civil war $events_{t-1}$		-1.701		-1.694
		(0.214)***		(0.166)***
OSV by $adversary_{t-1}$		-0.001		0.000
		(0.008)		(0.000)
Time since DV		0.962		0.788
		(0.123)***		(0.078)***
Spatial lag (DV)		-1.803		-1.916
		(0.169)***		(0.124)***
Constant		0.754		9.786
		(1.178)		(1.143)***
Lnalpha	5.870	2.840	5.248	1.774
	(0.089)***	(0.219)***	(0.083)***	(0.175)***
Number of obs	70 185	70 185	70 185	70 185

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Standard errors clustered by grid cell. Polynomials of *Time since DV* not reported.

Table 2. Enemy Constituencies and the Intensity of Violence against Civilians

	Model 5 OSV Govt	Model 6 OSV Govt	Model 7 OSV Rebel
Rebel constituency		1.784	0.404
		(0.322)***	(0.217)*
Govt constituency		-0.008	0.917
		(0.471)	(0.358)**
Excluded (no reb const)	-1.139		
	(0.467)**		
$Population_{log}$	0.705	0.662	0.774
	(0.147)***	(0.137)***	(0.090)***
$Income_{log}$	-2.358	-2.298	-0.959
	(0.299)***	(0.287)***	(0.142)***
$Distance\ to\ capital_{log}$	-0.012	-0.055	0.418
	(0.205)	(0.174)	(0.148)***
Strong rebels	-2.618	-1.749	0.790
	(0.534)***	(0.565)***	(0.342)**
Territorial conflict	-2.420	-1.901	-1.609
	(0.465)***	(0.434)***	(0.262)***
$Civil\ war\ events_{t-1}$	2.208	1.767	2.599
	(0.396)***	(0.349)***	(0.363)***
$OSV\ by\ adversary_{t-1}$	-0.002	-0.001	-0.000
	(0.000)***	(0.001)	(0.000)***
Time since DV	-1.513	-1.772	-0.800
	(0.306)***	(0.285)***	(0.151)***
Spatial lag, DV	3.347	2.721	2.274
	(0.540)***	(0.454)***	(0.263)***
Constant	16.777	15.669	1.220
	(3.225)***	(2.696)***	(1.662)
Lnalpha	5.919	5.870	5.246
	(0.090)***	(0.089)***	(0.083)***
Number of obs	70 185	70 185	70 185

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Standard errors clustered by grid cell. Polynomials of *Time since DV* not reported.

Figure 1: Spatial Distribution of One-Sided Violence Events in African Armed Conflicts 1989–2009.

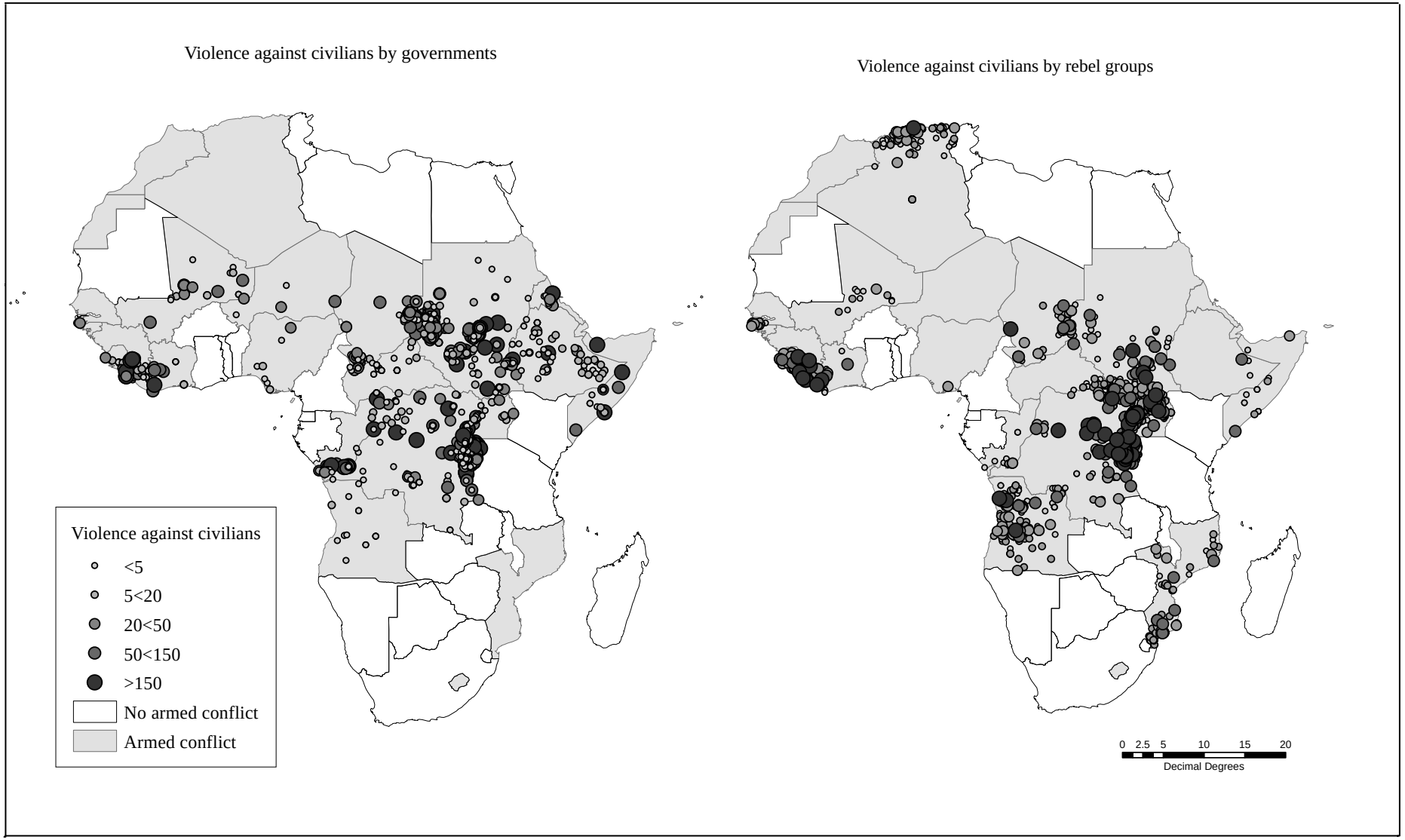
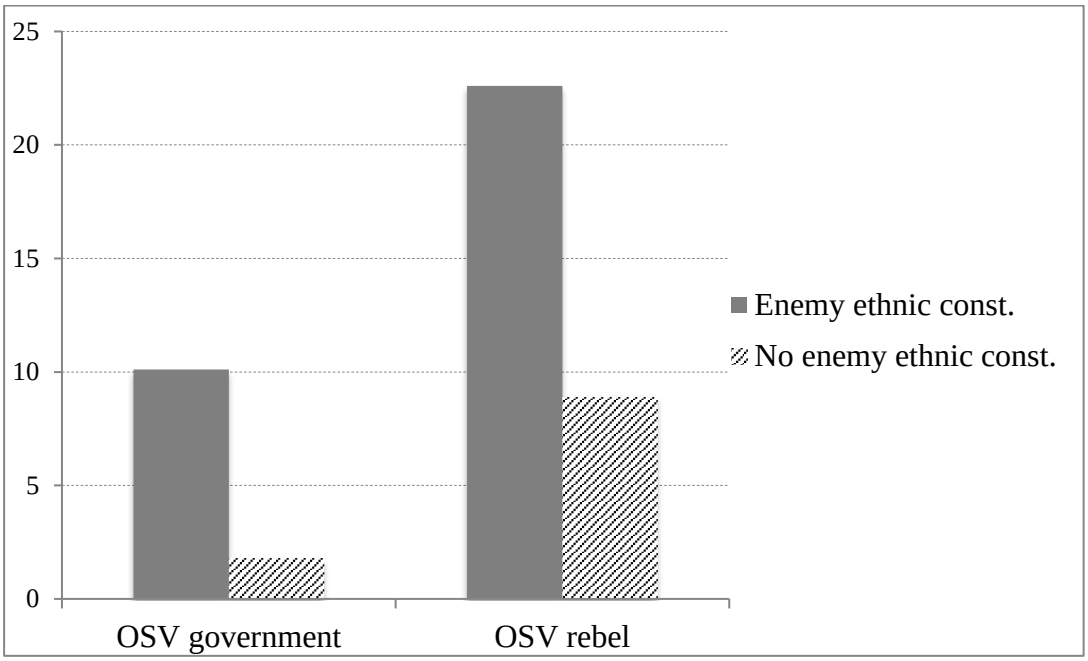


Figure 2: Predicted Number of Civilians Killed by Areas of Constituencies



Note: All substantive effects calculated using Clarify software (Tomz, Wittenberg and King, 2003).