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SPECIAL DATA FEATURE

One-Sided Violence Against Civilians in War: Insights from New Fatality Data*

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This article presents new data on the direct and deliberate killings of civilians, called one-sided violence, in intrastate armed conflicts, 1989–2004. These data contribute to the present state of quantitative research on violence against civilians in three important respects: the data provide actual estimates of civilians killed, the data are collected annually and the data are provided for both governments and rebel groups. Using these data, general trends and patterns are presented, showing that the post-Cold War era is characterized by periods of fairly low-scale violence punctuated by occasional sharp increases in violence against civilians. Furthermore, rebels tend to be more violent on the whole, while governments commit relatively little violence except in those few years which see mass killings. The article then examines some factors that have been found to predict genocide and evaluates how they correlate with one-sided violence as conceptualized here. A U-shaped correlation between regime type and one-sided violence is identified: while autocratic governments undertake higher levels of one-sided violence than other regime types, rebels are more violent in democratic countries.

Introduction

This article presents new data on violence against civilians in armed conflicts. Until now, the global studies available on the topic have all focused on mass killings or genocide; thus, there is a clear lack of extensive studies dealing with the full spectrum of attacks on civilian populations. Moreover, despite the obvious policy relevance of studying the behaviour of non-state actors, previous global studies have dealt exclusively with government violence. Against this background, we introduce new data on the intentional and direct killing of civilians – termed *one-sided violence* – collected by Uppsala Conflict Data Program (UCDP) for the period 1989–2004. This dataset is made up of yearly death counts for both government and rebel actors and includes all direct and deliberate killings of civilians.

We begin by providing a background to the previous quantitative work on violence against civilians, explaining the need for a new dataset. We then proceed to define the

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concept of one-sided violence and explain the data-collection procedures. Following that, trends and patterns of violence against civilians over the past 16 years are presented. The trends reveal that relatively few actors engage in short periods of mass killings, while a larger number of actors undertake a fairly constant level of low-intensity violence. The next section of the article consists of a statistical exercise: we examine three factors that have proven central for predicting genocide and political mass killing by Harff (2003), and we evaluate the explanatory power they have on one-sided violence. We find that they explain the magnitude of one-sided violence better than the incidence of such violence. Moreover, we also identify an interesting distinction regarding the influence of regime type on the behaviour of different actors: while autocratic governments undertake higher levels of one-sided violence than other regime types, rebels are more violent in democratic countries. We conclude that the disaggregated data we introduce open new avenues for the study of violence against civilians in armed conflict.

Why a New Dataset?

Despite ongoing scholarly efforts focused on collecting data on war, only limited data have been collected regarding violence against civilians. The existing datasets are limited to genocide or mass killings (Harff, 2003; Valentino, Huth & Balch-Lindsay, 2004; Rummel, 1994), interstate wars (Downes, 2004), or rely only on a proxy for violence (Azam & Hoeffler, 2002). The data we present here contribute to this field of research in three ways. First, our data are collected as events data and therefore contain estimates of *actual death counts* of all one-sided violence undertaken by an organized group. Because we do not restrict our estimates to only cases of mass killings, we can thus also examine low-intensity violence. Estimating the number of deaths further enables us to compare the levels of one-sided violence in different conflicts and across regions.

Second, we provide a *time series* of one-sided violence, which allows both an examination of levels of violence over time and the inclusion of other time-varying variables when statistically exploring the causes of such violence. Conflicts can change dramatically over the course of time, and these changes may also have implications for the level of one-sided violence.[1] Consider the example of Bosnia during the 1992–95 war: the campaign of ethnic cleansing was much more violent in the first and last years of the conflict than in the middle. What accounts for such variations? In order to empirically assess this type of question, a data structure that allows for changes over time is necessary.

Third, our dataset includes killing of civilians by *any organized group*, such as governments and rebel groups. Although there is a growing academic emphasis on non-state groups, no global study has focused on violence against civilians by rebel groups.[2] There are no comparable data for government and rebel violence, and so a large share of violence in conflict remains unstudied. Our data allow us to assess and compare different levels of violence by different types of actors. Furthermore, in many conflicts, there is more than one rebel group active; an actor-based dataset is thus necessary if we are interested in studying the behaviour of each of these conflict actors.

Presenting the Data

Criteria and Definitions

The data we present here are the result of a collaborative extension of UCDP's data collection, and thus we follow UCDP's definitions and coding criteria. UCDP, which originally

[1] Detailed data on the Colombian conflict illustrate well the changing nature of violence (Restrepo, Spagat & Vargas, 2004).

[2] For recent literature on violence by non-state actors, see e.g. Mkandawire (2002), Humphreys & Weinstein (2006), Kalyvas (2006) and Weinstein (2006).

Table I. Typology of Violence Against Civilians in War

	Intentional	*Unintentional*
Direct	One-sided violence	E.g. crossfire
Indirect	E.g. starvation during siege	E.g. disease

developed the term *one-sided violence* in 2002, defines it 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, Sollenberg & Wallensteen, 2004: 136).[3] This definition specifically excludes numerous types of violence: the requirement that the perpetrator must be a government or organized group excludes criminality and personal violence, as well as fatalities caused by general rioting or other types of non-organized social unrest.

The concept of one-sided violence encompasses only those fatalities that are caused by the intentional and direct use of violence (Table I). *Intentional killings* refer to any action that is taken to deliberately kill civilians. *Unintentional deaths*, however, comprise those deaths that result inadvertently from conflicts, for example, civilians caught in crossfire. *Direct killings* encompass all deaths caused directly by an actor, such as by bombing or shooting. *Indirect deaths*, on the other hand, include those deaths caused indirectly by an ongoing conflict, mainly due to disease or other health problems.

For a fatality to be included as one-sided violence, it must be both intentional and a result of the direct use of armed force. Intentional starvation of civilians, for example, is not included because it is not a direct action. Moreover, it is often difficult to verify the intentionality of such behaviour, since many war zones suffer from starvation and famine. Likewise, direct actions that lack the intent of attacking civilians are not included: if civilians are killed in crossfire, for example, the intention of the conflict parties was to kill each other, and thus these fatalities are not considered to be one-sided violence.[4] Often conflict parties attack each other with disregard to the civilian population, and while this may violate international law, it does not constitute one-sided violence.[5] Thus, the definition of one-sided violence leaves us with only a fraction of those killed as a result of violence. That fraction of the population consists of *civilians that are deliberately and directly targeted by governments or non-state groups*.

If we relate our concept of one-sided violence to that of genocide, the immediate difference is that one-sided violence has broader inclusion criteria: it encompasses acts considered to be genocidal in nature, but includes a wider range of behaviour as well.[6] In addition to genocidal acts, one-sided violence can include a wide array of different types of incidents, such as those often considered to be

[3] The definition excludes the death penalty, that is, those cases in which a person is executed after having been convicted in an established legal process.

[4] UCDP has a long history of collecting fatality data on interstate and intrastate conflicts. In expanding its data collection to include one-sided violence, it has designed all of its categories to be mutually exclusive. Thus, per definition, each incident can be coded to only one of these categories. Civilians killed in crossfire-like situations are included in the conflict data, while civilians killed in deliberate attacks are included in the one-sided data.

[5] This, of course, can often be a difficult task to evaluate, as many incidents are intended to kill both military and civilian targets, or it is otherwise difficult to distinguish between military and civilian fatalities. In general, UCDP codes these based on the stated intention of the parties. Exceptions to this rule are made in rare cases where the nature of the incident stretches the credulity of claims that the target was military; such incidents are marked by a highly disproportionate ratio of military to civilian fatalities. When there is no stated intention, a judgement is made by a regional expert, based on the past behaviour of the parties.

[6] This is also true for other closely related concepts like politicide, democide and state-sponsored mass murder.

'terrorist' in nature (such as the 11 September attacks on the World Trade Center),[7] individual and mass executions, bombs placed in markets or other public places, and so on.

Data Collection

The foundation for the data collection is an automated events data search using VRA® technology.[8] This events data search automatically retrieves all articles within specified parameters – in this case, all news reports which contain information about individuals killed or injured. The search retrieved news reports from five international news bureaus: Reuters News, BBC World Monitoring, Agence France Presse, Dow Jones International News and Xinhua News Agency. In addition, EFE News Service was used for Latin America. BBC World Monitoring was specifically chosen because it supplies text of local news reports, thus providing us a mixture of reports from international news bureaus and from local sources. The result is over 350,000 news reports for the period 1989–2004. Each news report was individually read, and any event that contained information on one-sided deaths was hand-coded into an events dataset; fatalities were then aggregated into a best estimate for every actor-year.[9]

Both the independence and transparency of the origins of the sources is crucial. Each source was judged according to the context in which it was published, that is, according to the potential interests of the source in misrepresenting violent events. Since most information comes from secondary sources, the project attempted to trace reports back to the primary source in order to determine whether it was reliable.[10]

In addition to news reports, the coding was also supplemented by case-level data whenever possible. Reports from international non-governmental sources like the UN, Human Rights Watch and Amnesty International were used, as well as local-level NGO data where available (for example, INSEC in Nepal). We have also tried to draw upon the work of area specialists; data on Guatemala, for example, are taken from Ball, Kobrak & Spirer (1999). This is the first version of this dataset; we hope that new case-level research and advice from other researchers will result in even better data in future versions.

The fatality numbers given here are based on publicly accessible sources. Owing to the lack of available information, it is quite likely that there are more fatalities than given in the best estimate, but it is very unlikely that there are fewer. The fatality estimate is thus best interpreted as creating a baseline, and one should keep in mind that the precision of the numbers belies the uncertainty of the estimates. Moreover, it is entirely possible that there is measurement error due to differing degrees of journalistic coverage of some regions – in particular, there is a comparative lack of coverage in parts of sub-Saharan Africa. While we are the first to admit that there is considerable room for qualitative improvements to the data, we believe that the data nevertheless constitute a minimum estimate about which we can be fairly confident.

Our data are likely to provide seemingly low estimates for two reasons. The first has to do

[7] Terrorism is not a term that UCDP applies in categorizing its data. Acts generally considered terrorist in nature are categorized as one-sided violence if the attack is directed towards civilians. Those that are directed towards government or military targets are included in the conflict dataset.

[8] The VRA software system automatically generates specified events data and displays them in summary form (see Bond et al., 2003).

[9] Low and high estimates were also generated, and these will be made public with the release of the data. In cases of biased sources or in situations where there is unreliable information, the events are normally included in a high estimate only; as a result, there is a fairly wide variation between the best and high estimates. There is little difference in most cases, however, between the low and best estimates. All of the data presented in this article are based on the best estimate.

[10] While most often the primary source was a witness, journalist or warring party, news reports also occasionally reported the results of special investigations, such as those conducted into the killings at Srebrenica in 1995. Thus, the articles tend to employ a wide mélange of primary sources.

with definitions; as discussed above, the definitional specifications used in our dataset are designed for the study of the deliberate targeting of civilians, and should not be conflated with broader efforts to measure the size or impact of war. The second reason relates to the reliability of other estimates. For many conflicts, commonly cited estimates employed in media and NGO reports are repeated so frequently as to become unquestioningly accepted as truth. One example is the oft-cited estimate of 200,000 total fatalities in the Bosnian war, which is grounded in a single government statement that came less than a year after fighting broke out (Öberg & Sollenberg, 2003). In many cases, the origin of these estimates is unknown or one of the warring parties; even where this information is available, the methodology and definitional guidelines used in generating the estimates are rarely transparent.[11] By employing clear criteria and using a systematic approach to data collection, we can generate more reliable estimates than those which are often cited.

Trends and Patterns

One-sided violence, according to UCDP's definitions, does not necessarily need to take place in the context of armed conflict. Nevertheless, the vast majority of attacks on civilians do take place in countries plagued by armed conflict; we found that less than 1% of the total fatalities took place in countries which did not see armed conflict during the period.[12] This suggests that one-sided violence is intimately related to conflict dynamics and rarely occurs outside of the context of armed conflict. The data we present here are thus confined to one-sided violence by those actors that are actively involved in armed conflict.

In terms of fatalities, the single biggest event during the period 1989–2004 was the mass killings of Tutsis and moderate Hutus in Rwanda in 1994, with estimates ranging from 500,000 to 800,000 civilians killed.[13] We have used the lower estimate of 500,000 as our best estimate. We include Rwanda in all of the estimates provided in the text and tables, but for comparison we also provide estimates excluding Rwanda 1994 in parentheses.

There are 78 actors active in the dataset, of which 27 are governments and 51 are rebel groups, a ratio of almost 1:2. Of the approximately 573,000 (73,000) fatalities recorded, around 528,000 (28,000) were committed by governments. This suggests that although rebels committed one-sided violence more frequently, government actors were, on average, more deadly: each government actor committed on average 6,435 (337) one-sided fatalities per year, while each rebel group committed 221.[14]

In terms of annual fatalities, 1989–91 saw relatively low numbers. There was a small jump in 1992, owing to one-sided violence by Serbian forces in Bosnia. After a drop in 1993, the fatalities increased sharply in 1994, owing to the Rwandan genocide. The

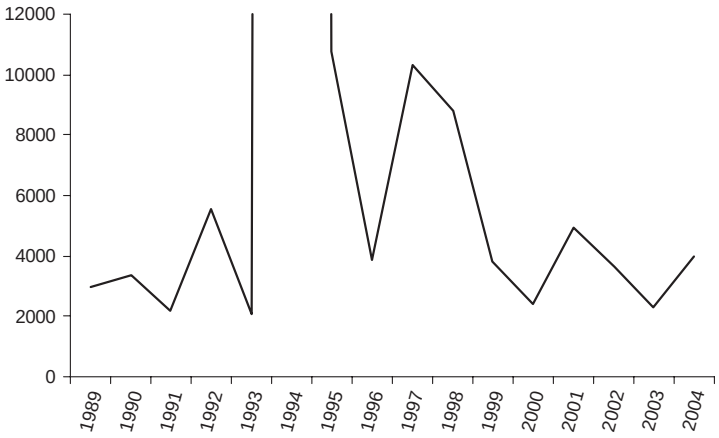
[11] This, of course, is not true for estimates which are gathered using clear, systematic methodologies, such as those employed in some case studies or by some NGOs. In those cases where such rigorous work is done, the data are usually incorporated into our dataset, such as Ball, Kobrak & Spirer (1999).

[12] Countries where one-sided violence was coded but where there was no armed conflict during the period were Armenia (1992), Cameroon (1994), China (1989), Honduras (2004), Morocco (2003), Nigeria (2002–03), Saudi Arabia (2004), South Africa (1990; 1992–95), Tanzania (2001) and Thailand (1992; 2003–04).

[13] Estimates of the number of people killed in the Rwandan genocide range as high as 1,000,000. It is difficult to ascertain with any certainty how many died; it is even more difficult to determine how many died in intentional, direct violence against civilians and how many died in battle or due to health-related causes. One source of the 1,000,000 estimate is a Rwandan census from 2001, but this census covers the period 1991–94, thus including fatalities from the preceding civil war. Likewise, other sources includes battle-deaths as well as fatalities related to the emerging humanitarian emergency in Rwanda and neighbouring countries during and in the aftermath of the genocide. Most estimates, which generally build on census data, converge in the 500,000–800,000 range (Prunier, 1998; Eltringham, 2004). After evaluating numerous reports, we also believe that this range is most convincing, and thus have excluded the higher estimate of 1,000,000.

[14] These averages are based on only those actors that committed one-sided violence.

Figure 1 Annual One-Sided Fatalities, 1989–2004.



At over 501,814, the value for 1994 is above the ceiling of the figure.

numbers dropped in 1995 and continued to do so through 1996, though 1995 saw a relatively high amount of one-sided violence, owing to the massacre of around 7,500 people at Srebrenica by Serbian opposition forces in Bosnia. The number of fatalities again rose in 1997 due mainly to mass killings by the governments of Rwanda and the Democratic Republic of the Congo (DRC) (with over 3,000 fatalities each). Fatalities declined slightly in 1998, but remained quite high because of mass killings undertaken by the Taliban government in Afghanistan (over 4,000 fatalities). The decline continued to 2000, with an increase in 2001 caused by the 11 September attacks. The following years saw relatively low levels of violence, though the period ended with a slight rise in fatalities in 2004, owing to attacks by the Sudanese government. While it appears that there is a downward trend in one-sided violence, the fact that the graph is punctuated by sharp spikes should be a warning that one-sided violence could increase dramatically again; indeed, continuing unrest in Sudan and Iraq in 2005 suggests that the fatalities may continue to rise. If one can draw any conclusion from this graph, it is that the period is consistently characterized by sharp peaks and valleys; while there is always some degree of one-sided violence, the period's defining characteristic is the irregularly spaced spikes in violence. A small number of actors, namely Serbian opposition forces, Al-Qaeda, and the Rwandan, DRC, and Afghanistan governments, are responsible almost entirely for these spikes (Figure 1).

As has been observed with armed conflict, one-sided violence tends to cluster in certain areas (Table II).[15] One zone with high levels of one-sided violence is Africa, in particular central Africa. Other zones include South Asia, the Middle East and certain parts of Eastern Europe (former Yugoslavia, Russia). Africa clearly dominates the fatality estimate with 93% (47%) of the global one-sided fatalities – a total of over 534,000 (34,000) were killed in one-sided violence during 1989–2004.[16] Africa is followed by Asia, Europe and the Americas. The Middle East had notably few fatalities from one-sided violence.

[15] See Gleditsch et al. (2002: 624) for a description of conflict clustering. See UCDP's webpage for definitions of the various regions.

[16] When omitting Rwanda 1994, Africa – with only 15% of the world's population – still has just under half of the global one-sided fatalities.

Table II. Summary Figures for One-Sided Violence, 1989–2004

	Fatality estimate	*Number of actors*	*Number of countries*
Europe	14,269	8	5
Middle East	2,717	7	4
Asia	14,713	27	10
Africa	534,366 (34,366)	31	18
Americas	6,702	5	4
World	572,767 (72,767)	78	41

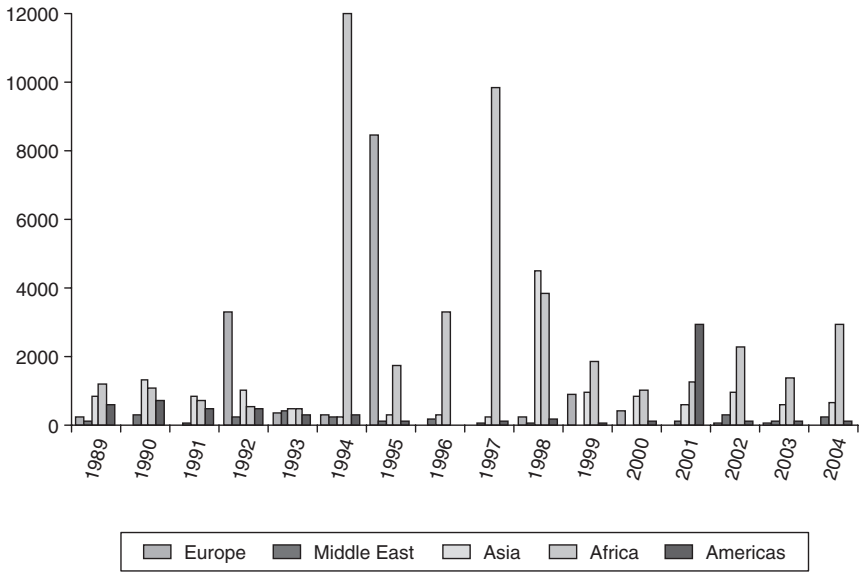
Estimates excluding Rwanda 1994 in parentheses.

These less-affected regions tend to have few actors engaged in one-sided violence in only a handful of countries (Table II). The Americas' fatalities occurred in Colombia, Guatemala, Peru and the USA (the 11 September attacks); and in the Middle East, one-sided violence was recorded for Egypt, Iraq, Israel (and the Palestinian territories) and Turkey.

The annual fatality breakdown shown in Figure 2 demonstrates dramatically the spurts of mass killings discussed in Figure 1, as Africa 1994 and 1996–98, Europe in 1992 and 1995, and Asia in 1998 clearly dominate the figure. The Middle East and the Americas reveal quite steady numbers of low-scale intensity, except for a sharp increase in the Americas in 2001.

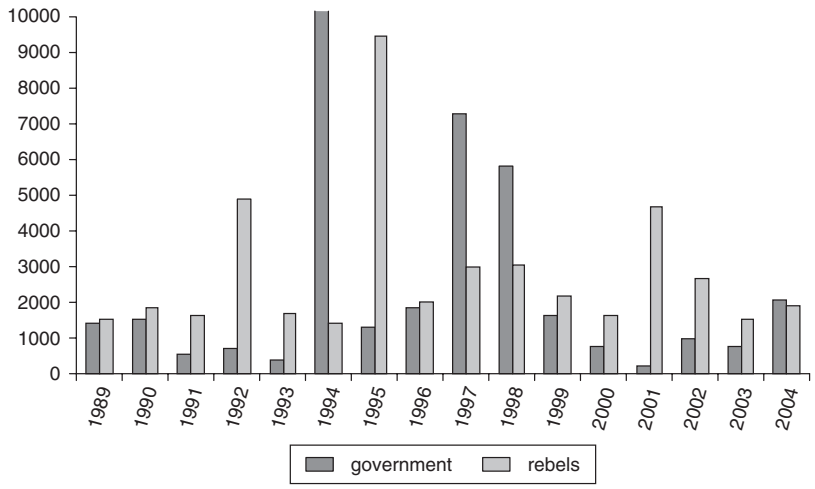
When we disaggregate the number of fatalities by actor, some interesting observations arise. On the whole, when there is high government violence, it is generally in the form of mass killings by few governments, as in 1994, 1997, 1998 and 2004. Rebel violence is higher than government violence for all other years. This is due in large part to fairly constant levels of one-sided violence by numerous rebel actors. Kashmiri insurgents

Figure 2 Annual One-Sided Fatalities by Region, 1989–2004.



At 500,731, the value for Africa 1994 is above the ceiling of the figure. Bars follow the same order as in the legend.

Figure 3 Annual One-Sided Fatalities by Actor, 1989–2004.



At 500,399, the value for government 1994 is above the ceiling of the figure.

in India, for example, were active in 12 out of 16 years and killed on average 182 civilians per year. Even though rebel violence tends to show a higher and more constant base level, it too is marked by a number of sharp peaks caused by individual actors (Serbian forces in Bosnia in 1992 and 1995; Al-Qaeda attacks in 2001). Thus, there seem to be two different processes: one in which numerous actors engage consistently in rather small-scale attacks on civilians, and one in which a few actors undertake campaigns of mass killings of quite short duration (Figure 3).

Turning to the context of these fatalities, we can distinguish between governmental and territorial conflicts. Governmental conflicts concern the type of political system, the replacement of the central government, or the change of its composition, while territorial conflicts concern the status of a specified territory, often regarding demands for autonomy or secession (UCDP website). On the whole, the majority of fatalities take place in governmental conflicts, even if Rwanda 1994 is excluded (Table III). There are, however, notable differences between rebel and government actors.

For rebel actors, half of the fatalities are in governmental conflicts, with only slightly fewer in territorial conflicts. For government actors, though, the distinction is far more dramatic: 99% of fatalities are in governmental conflicts (79% excluding Rwanda 1994). One explanation for this result could be that governmental

Table III. Breakdown of One-Sided Violence by Type of Conflict, 1989–2004

	Territorial conflict	*Governmental conflict*	*Both*
Government	3,713	521,837 (21,837)	2,095
Rebels	21,516	23,350	256

Estimates excluding Rwanda 1994 in parentheses. The 'both' column includes government actors that are engaged in multiple conflicts, and thus can be engaged in both government and territorial conflicts at the same time, as well as actors in those conflicts which UCDP codes as having both incompatibilities simultaneously (such as Sudan v. SPLM/NDA after 1997).

conflicts are of higher salience for governments since they directly threaten the regime's hold on power. Territorial conflicts, on the other hand, often take place on the periphery and perhaps do not pose as fundamental a risk to the government's existence; as a result, fewer troops are deployed in these regions and less priority is placed on rooting out rebel forces (see Valentino, Huth & Balch-Lindsay, 2004).

The data also show that rebels kill almost six times more civilians than governments in territorial conflicts, a somewhat puzzling finding since rebels in territorial conflicts tend to be reliant on the support of the local population to blend in and avoid capture by government forces. Thus, it is in the rebels' interest to maintain good relations with the civilian population. Despite this, rebels still attack civilians, suggesting that they are forced to use intimidation and violence to ensure compliance and assistance (see Kalyvas, 2006). It may also be the case that this violence has to do with group identity. In ethnic-based territorial conflicts (which the majority are), rebels may adopt an ethnic cleansing-like strategy of attacking civilians who belong to other ethnic groups in order to assert their dominance in the area.

We have also examined how often *both* governments and rebels engage in one-sided violence in the same country. We find that one-sided violence by both parties takes place in only one-third of the countries. In terms of fatalities, however, 96% take place in countries where both parties engage in one-sided violence (70% excluding Rwanda 1994). Not surprisingly, this is due to the fact that in the most violent conflicts both parties actively attack civilians: all five of the most violent countries (Rwanda, Bosnia, DRC, Burundi and India) saw one-sided violence by both government and rebel actors.

While the limited time period of the dataset makes it somewhat difficult to ascertain which party initiated attacks on civilians, if we examine 1989–2004, we find that in just under 40% of the countries, both parties begin attacking civilians in the same year. In the remaining 60% of the countries, the onset of attacks is sequential, with either rebels (four countries) or governments (seven countries) first initiating violence against civilians. The time period from the onset of the first actor's one-sided violence and the onset of violence by the other actor ranges from 1 to 14 years, with an average interval of almost 5 years. Thus, despite the numerous cases in which onset of one-sided violence occurs simultaneously, the effect of one actor's use of one-sided violence on its counterpart is unclear: it may act as a catalyst which spurs its opponent to also employ similar tactics, or it could be related to other factors like the outcome of battle-related violence.

Another comparison is between one-sided violence and battle-deaths. Rummel (1994) finds that during the Cold War, democide (i.e. genocide and mass murder) resulted in nearly four times as many fatalities as battle-deaths. To make this comparison in a post-Cold War context, we employ the Lacina & Gleditsch (2005) battle-deaths dataset. In contrast to Rummel's conclusion, we find that, during the 1989–2004 period, there are twice as many battle-deaths as fatalities from one-sided violence.[17] While this may be in part the result of definitional specifications, Rummel's conclusion does not appear to be applicable to the post-Cold War context.[18]

Comparing One-Sided Violence with Genocide

As a first statistical analysis of these disaggregated data of one-sided violence, we examine the impact of some factors previously identi-

[17] While Lacina & Gleditsch strive to include only battle-deaths, because their dataset is constructed from others' estimates, it is possible that some one-sided violence is included in their data (available at http://www.prio.no/cscw/cross/battledeaths).

[18] Rummel's definition of democide is considerably broader than that of one-sided violence, as he includes non-direct violence such as starvation.

fied as crucial for explaining genocide. One of the most prominent studies on genocide is Harff (2003), which examines under what circumstances – given a state failure – geno/politicide is most likely, pinpointing some main factors that together account well for the risk of violence.[19] Harff finds that previous political upheaval, autocracy and trade openness are the strongest predictors of onset of geno/politicide (henceforth referred to as genocide). We are interested in exploring whether these factors also account for the related phenomenon of one-sided violence. Hence, this is not an evaluation of Harff's findings, but rather a comparison of the determinants of two similar phenomena. Moreover, our data permit an initial evaluation of the potential difference between the incidence and the magnitude of one-sided violence.

Operationalizations

Harff (2003) presents a global examination of genocide in countries that have experienced state failure – internal war or regime collapse – covering the period 1955–97.[20] Our dataset is different in that it consists of all conflict actors during the period 1989–2004 that are actively involved in an armed conflict resulting in at least 25 battle-deaths in a year. In order to carry out the comparison, there are two dependent variables: one binary variable for the incidence of one-sided violence (a minimum of 25 deaths per year) and one count variable for the number of civilians killed per year. Therefore, two estimators are necessary. For the binary dependent variable, we use logit, while a negative binomial regression model is used to estimate the count variable.

Harff finds that the magnitude of previous political upheaval over the past 15 years is strongly correlated with genocide. In this study, the corresponding characteristic is the magnitude of previous conflict, and the first independent variable is consequently *previous war*. We code it as a dummy for whether a country has experienced a civil war at least once during the past 15 years according to the Uppsala/PRIO dataset, that is, at least 1,000 battle-deaths in a year. We also code a dummy for dyadic *civil war* in the same year to enable an evaluation of the direct correlation between the intensity level of each party and one-sided violence.[21] The second influential factor that Harff identifies is *autocracy*. In line with her operationalization, we use a dummy for autocracy based on the Polity2 variable, defined as a polity score of 0 or lower on the scale ranging from −10 to 10 (higher values are more democratic).[22] In alternative specifications of the model, we also use a dummy for democracy with a cutoff point at 7 to detect potential curvlinearity. The third significant variable taken from Harff is *trade openness*. It is coded as annual trade as percent of GDP; data are taken from the World Bank's Global Development Indicators. We code a dummy for whether the actor is a government in order to evaluate the potential difference between governments and rebel groups. Finally, we include a lagged dependent variable to adjust for the non-independence among the observations in the time-varying dataset.[23]

Findings

All results are presented in Table IV.[24] Model 1 includes the variables that are similar to

[19] The phenomenon of geno/politicide is defined as 'the promotion, execution, and/or implied consent of sustained policies by governing elites or their agents … that are intended to destroy, in whole or part, a communal, political, or politicized ethnic group' (Harff, 2003: 58).

[20] The failed states she examines thus include, but are not limited to, those with internal armed conflicts.

[21] The Uppsala/PRIO dataset differentiates between minor armed conflicts (25–999 battle-deaths per year) and civil wars (1,000 or more battle-deaths per year) and codes the intensity level for each dyad in conflict.

[22] For information about the Polity IV dataset, see http://www.cidcm.umd.edu/inscr/polity/.

[23] Since there is not a complete time series for all actors (because we include only active parties), the lag is coded manually to minimize missing values.

[24] For results when using alternative operationalizations and model specifications, see our online appendix available at http://www.ucdp.uu.se.

Harff's, using the binary dependent variable: none of the three main independent variables has a significant effect on the likelihood that a warring party uses one-sided violence. Thus, the factors that account for the onset of genocide do not perform well when trying to predict incidence of one-sided violence, suggesting that these are indeed somewhat different phenomena. In Model 2, *civil war* – the annual intensity of conflict – is used instead of *previous war*, a dummy for *democracy* is included, and *trade* is excluded since it showed no effect in the previous model. The findings suggest that civil war has a significant positive effect. Hence, the use of one-sided violence seems to be more related to the current conflict-intensity than to the previous level of violence in the country. Neither autocracy nor democracy has any significant effect. In both logit models, the lagged dependent variable has a strong positive effect, indicating a continuous use of violence.

In the remaining models, we evaluate the magnitude of violence using the count of civilians killed. Model 3 mirrors the first model in the variables included, and the pattern is the same, but in Model 4 the alternative specifications alter the results considerably. Civil war is again positive and significant, suggesting that for both incidence and magnitude of violence, the current intensity of conflict is more influential than the legacy of war. Interestingly, the same model reveals that the correlation between regime type and violence is not a linear correlation as implied by Harff, but rather a curvilinear one. However, the U-shape

Table IV. One-Sided Violence in Armed Conflict, 1989–2004

	Logit of incidence of one-sided violence		*Negative binomial regression of number killed in one-sided violence*			
	(1)	*(2)*	*(3)*	*(4)*	*(5) Governments*	*(6) Rebels*
Previous war	0.144		0.314			
	(0.262)		(0.361)			
Civil war		0.787***		1.008***	0.68	1.086**
		(0.185)		(0.342)	(0.464)	(0.442)
Autocracy	–0.255	–0.24	0.433	0.888**	1.171*	0.747
	(0.253)	(0.308)	(0.332)	(0.369)	(0.631)	(0.584)
Democracy		0.251		0.722**	–0.052	0.966*
		(0.328)		(0.349)	(0.73)	(0.558)
Trade	–0.002		–0.006			
	(0.004)		(0.004)			
Government		–0.421		0.021		
		(0.269)		(0.341)		
One-sided violence$_{t-1}$	2.034***	1.937***	0.009***	0.01***	0.008***	0.010***
	(0.207)	(0.207)	(0.002)	(0.002)	(0.003)	(0.002)
Constant	–1.835***	–2.783***	2.887***	0.939*	1.425	0.792
	(0.367)	(0.358)	(0.4)	(0.548)	(0.897)	(0.838)
Pseudo R^2	0.1560	0.1708				
Lnalpha			3.082	3.177	3.595	2.950
			(0.169)	(0.163)	(0.202)	(0.204)
Alpha			21.792	23.966	36.411	19.106
			(3.682)	(3.897)	(7.352)	(3.906)
N	1,073	1,256	991	1,159	426	733

Standard errors adjusted for clustering on country. Estimations performed using Stata 8.0. * $p < .1$; ** $p < .05$; *** $p < .01$ (two-tailed tests). Models 3–5 exclude the outlier of Rwanda 1994.

is not inverted, with higher levels of violence in the semi-democracies, as has been found in research on gross human rights violations (Fein, 1995), deadliness of political violence (Muller & Weede, 1990) and onset of civil conflict (e.g. Hegre et al., 2001).[25] Instead, we find the opposite result, that there are higher levels of one-sided violence in more autocratic and democratic countries, while semi-democracies experience the lowest levels of one-sided violence.[26] The estimated change in one-sided violence when comparing an autocracy to a semi-democracy is 143%, whereas the equivalent for democracies is an increase of 106%. Hence, conflict actors in autocracies are comparatively more violent than those in democracies. A potential explanation for the U-shaped correlation is that the processes creating the high ends of the U may be driven by different types of actors; it could be that autocratic regimes are more likely to kill citizens (Rummel, 1994), at the same time as terrorist violence by non-state actors is more often employed in democratic countries (Pape, 2005). As a way of further exploring this claim, governments and rebel groups are examined separately.

Model 5 shows that the magnitude of one-sided violence by governments indeed is higher in autocracies, while democracy has no significant effect. The effect of autocracy is also stronger when looking only at governments – violence is expected to increase by 223%. We can thus conclude that autocratic regimes are the most prone to kill civilians in armed conflicts, but democracies are not less violent than their semi-democratic counterparts. For rebel groups (Model 6), the opposite correlation is found: the level of one-sided violence is higher in democracies, and it increases the expected number of fatalities by 163%. Hence, the U-shaped correlation is driven by violent autocratic governments and rebel groups fighting democratic states.

To conclude, this comparison between genocide and one-sided violence suggests two new insights. First, explanations for genocide cannot be directly translated to one-sided violence. Whereas previous political upheaval is a strong predictor for genocide, the current conflict intensity is better suited for explaining one-sided violence. Although autocracy clearly increases the risk of both one-sided violence and genocide, one-sided violence is also more prevalent in democracies than in semi-democracies, suggesting a U-shaped correlation between regime type and level of violence. Second, the fact that the variables predicted the magnitude better than the incidence of one-sided violence implies that the mechanisms explaining the incidence of violence are somewhat different from those accounting for the magnitude of such violence against civilians.

Conclusions: Insights from New Data

The new dataset on one-sided violence provides a number of interesting new insights, particularly regarding differences between government and rebel violence against civilians. The statistical analysis shows that the determinants of genocide cannot be directly applied to one-sided violence as measured here, and that onset and magnitude of violence may be affected by very different mechanisms.

Indeed, our descriptive and statistical results suggest several paths for research. One such path is to study how the relationship between government and rebel actors affects the likelihood or magnitude of one-sided violence. Future research might also examine various aspects of the conflict environment, such as whether there is a relationship between battlefield outcomes and the use of one-sided

[25] It should be noted that since we follow Harff's coding for democracy, semi-democracy and autocracy, the regime-type specifications differ slightly from the previous studies mentioned.

[26] As an additional test, we ran the same model instead using the polity scale and its squared term, but these were not significant.

violence by warring parties. Another aspect of the conflict environment worth exploring concerns the type of conflict, given the finding presented here that rebels and governments behave differently in governmental and territorial conflicts. Along the same lines, our results on territorial conflicts raise interesting questions regarding the ethnic dimensions of one-sided violence and its relationship to armed conflict. These are but a few of the numerous paths for future research that clearly warrant further theoretical and empirical study. Our hope is that the creation of this dataset will facilitate such efforts.

References

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

Ball, Patrick; Paul Kobrak & Herbert F. Spirer, 1999. *State Violence in Guatemala, 1960–1996: A Quantitative Reflection*. Washington, DC: American Association for the Advancement of Science.

Bond, Doug; Joe Bond, Churl Oh, J. Craig Jenkins & Charles Lewis Taylor, 2003. 'Integrated Data for Events Analysis (IDEA): An Event Typology for Automated Events Data Development', *Journal of Peace Research* 40(6): 733–745.

Downes, Alexander B., 2004. 'Targeting Civilians in War', PhD dissertation, Department of Political Science, University of Chicago.

Eck, Kristine; Margareta Sollenberg & Peter Wallensteen, 2004. 'One-Sided Violence and Non-State Conflict', in Lotta Harbom, ed., *States in Armed Conflict 2003.* Uppsala: Universitetstryckeriet (133–142).

Eltringham, Nigel, 2004. *Accounting for Horror: Post-Genocide Debates in Rwanda*. London: Pluto.

Fein, Helen, 1995. 'More Murder in the Middle', *Human Rights Quarterly* 17(1): 170–191.

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

Harff, Barbara, 2003. 'No Lessons Learned from the Holocaust? Assessing Risks of Genocide and Political Mass Murder Since 1955', *American Political Science Review* 97(1): 57–73.

Hegre, Håvard; Tanja Ellingsen, Scott Gates & Nils Petter Gleditsch, 2001. 'Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816–1991', *American Political Science Review* 95(1): 33–48.

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

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

Lacina, Bethany Ann & Nils Petter Gleditsch, 2005. 'Monitoring Trends in Global Combat: A New Dataset of Battle Deaths', *European Journal of Population* 21(2–3): 145–165.

Mkandawire, Thandika, 2002. 'The Terrible 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.

Muller, Edward N. & Erich Weede, 1990. 'Cross-National Variations in Political Violence: A Rational Action Approach', *Journal of Conflict Resolution* 34(4): 624–651.

Öberg, Magnus & Margareta Sollenberg, 2003. 'Teaching Conflict Analysis: Suggestions on the Use of Media as a Resource for Conflict Analysis', in Mariano Aguirre & Fransisco Ferrándi, eds, *The Emotion and the Truth: Studies in Mass Communication and Conflict*. Bilbao: Humanitaria Net (27–50).

Pape, Robert, A., 2005. *Dying to Win: The Strategic Logic of Suicide Terrorism*. New York: Random House.

Prunier, Gérard, 1998. *The Rwandan Crisis: History of a Genocide*. London: Hurst.

Restrepo, Jorge; Michael Spagat & Juan F. Vargas, 2004. 'The Dynamics of the Colombian Civil Conflict: A New Data Set', *Homo Oeconomicus* 21(2): 396–428.

Rummel, Rudolph J., 1994. 'Power, Genocide and Mass Murder', *Journal of Peace Research* 31(1): 1–10.

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

Weinstein, Jeremy M., 2006. *Inside Rebellion: The Politics of Insurgent Violence*. Cambridge: Cambridge University Press.

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