

Explaining State Violence in the Guatemalan Civil War: Rebel Threat and Counterinsurgency

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ABSTRACT

Literature on the Guatemalan Civil War has debated whether or not state violence was triggered by rebel activities. Did the government respond to each insurrection caused by the rebels, or did it blindly target regions where antigovernment antipathy and movements had historically prevailed? Because state violence was extensive during the civil war period, the dynamism of the war could have been the reason for its occurrence. Relying on the threat-response model of state violence, this article argues that human rights violations occurred when the government perceived a rebel threat that would have seriously degraded its capability in future counterinsurgencies. The article employs propensity score matching to address the problem of confounding in empirical analysis, and reveals that rebel attacks, particularly those targeting security apparatus and resulting in human injury, increased the likelihood of state violence in the Guatemalan Civil War.

During the Guatemalan Civil War (1960–1996), counterinsurgency operations involved many incidents of state-led violence. After the early 1980s, the war took on an aspect of conflict in which indigenous people were mobilized in the western region of the country, where the rebels sought to expand their influence. Aiming to carry out guerrilla warfare, rebel leaders attempted to establish a geographical and social base of support from the indigenous population.

The government's response to the rebellion, especially during the administrations of Fernando Romeo Lucas García (July 1978–March 1982) and Efraín Ríos Montt (March 1982–August 1983), was characterized by the mass murder of those indigenous people who were regarded as rebel collaborators, in addition to the destruction of the urban base of rebel support (Sanford 2003). When targeting those specific groups, the government's scorched earth operations did not make a clear distinction between those who actually cooperated with the rebels and those who did not. The government relied on violence that collectively targeted indigenous populations and indiscriminately attacked people from those groups (Ball et al. 1999). Although the rebels also committed abuses against civilians during the civil war (Garrard-Burnett 2010; Landau 1994; May 2001), most incidents of violence were perpetrated by the state (Hanlon and Shankar 2000).

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Why did such state violence occur? Indigenous civilians had long been subjected to exploitation by the incumbent elites (Ball et al. 1999, 90). The legacy of colonial racism generated the belief that the indigenous were inferior and removed any moral obligation on the part of the government, making their elimination less problematic (Comisión para el Esclarecimiento Histórico 1999, 325). The indigenous, furthermore, were considered potential rebels, as they had repeatedly revolted against the government (McCreery 1994). In this sense, state-led violence during the 1980s may have been brought on by the historical interactions between the government and ethnic minorities (Lovell 1988; Smith 1990).

However, state violence was extensive during the civil war period in Guatemala, as well as in other countries in Latin America (Wickham-Crowley 1990). Therefore it could have been the dynamism of civil war that influenced the occurrence of violence. This study reconsiders why the Guatemalan government resorted to violence against its own population. The argument is based on the threat-response model, which focuses on the costs to the government of rebel attack (Davenport 2007a).

Although commonly discussed for other cases, the relationship between rebel threat and state violence has not been formally recognized in the Guatemalan Civil War because the racism thesis sufficiently accounts for many aspects of the issue. Yet it is worth paying attention to this mechanism that possibly links rebel attacks and state violence because the incumbent's violence is variable, not only geographically but also temporally (Herrerros and Criado 2009; Humphreys and Weinstein 2006; Kalyvas and Sambanis 2005). Not only did some regions experience much more violence than others, but incidents also tended to concentrate during particular periods. Furthermore, even with this knowledge, it is not evident what types of threat were linked to the government's strategic use of violence in the civil war. Recent studies show that violence was a reaction of the Guatemalan government to rebel threat, which mostly appeared as attacks against the state (e.g., Sullivan 2012). Yet despite this important finding, little attention has been paid to the question of what specific rebel attacks induced state violence in the civil war. Because the government was often selective in its counterinsurgency efforts and considering the disaggregated types of rebel attacks, state violence deserves attention.

The analysis thus aims to examine the impact of rebel attacks on state violence in counterinsurgency efforts. The empirical problem here is confounding: while the government reacts to each rebel attack resulting from the endemic features of particular areas, it may, at the same time, blindly target regions where antigovernment antipathy and movements have historically prevailed.

To accurately measure the effect of each type of rebel threat, those threats based on preconceived hostility toward subversive elements should be separated from those not based on preconceived hostility, for each unit of analysis. For these reasons, the propensity score analysis is conducted because it provides treatment effects on the outcome by reducing selection bias in the data. Using this method, the analysis presents evidence that state violence was incited by rebel attacks in the Guatemalan Civil War between 1982 and 1995. The attacks that targeted security apparatus and caused human injury were most apt to increase the likelihood of state

violence. When rebel attacks were considered likely to cause damage to later counterinsurgency activities, the government became motivated to target individuals who were allegedly linked to the rebels.

The contributions of this study are twofold. First, it shows that the government did react to rebel activities during the civil war. The question of whether state violence was triggered by rebel activities has been debated (Grandin 2011; see also Bamberger 1999; Stoll 1993, 1999; Stromquist 2000). Relying on statistical data and methods of analysis, this article complements those previous studies by providing new empirical evidence on which to base judgment on this issue. The results of the analysis offer an understanding of why and how state violence occurred in the Guatemalan Civil War. Findings drawn from a different methodological orientation should help us reevaluate existing knowledge on the dynamics of the war. Second, the government selectively used violent means. With recent important exceptions (e.g., Fjelde and Hultman 2014; Lyall 2009, 2010; Toft and Zhukov 2012, 2015), previous studies have largely employed state-level data to explore the mechanism of state violence. Disaggregating counterinsurgency operations at the subnational level, this study reveals that the wartime violence of the Guatemalan government was not a holistic policy but a series of discrete initiatives against the rebels.

STATE VIOLENCE IN COUNTERINSURGENCY

In civil war, a government employs a variety of counterinsurgency strategies. These include the selective provision of security, goods, services, and income; the development of narratives and symbols that resonate with the population's cultural system or counter those of the rebels; and the co-optation of existing local and traditional leaders (McFate and Jackson 2006, 13). For major techniques, Leites and Wolf (1970) describe four: input denial, in which the government attempts to diminish the supply of human and material resources available for rebel use and the willingness of nonelites to supply these resources to the rebels; disruption of the conversion process, which allows the rebels to utilize resources for their activities; passive defense, which includes propaganda that changes civilians' preferences in favor of the government; and counterforce.

The government uses these measures to increase both civilians' benefit of siding with the government and the cost of collaborating with the rebels. Counterinsurgency strategies, therefore, tend to be mixed. The imposition of costs through violence has a notable impact on the behavior of the population because in civil war, violence determines individuals' priorities. The "hearts and minds" counterinsurgency strategy is an option to restore popular support for the government. However, benefit recipients may eventually desert to the rebel side if they interpret the incumbent's accommodation as a weakness (Carey 2006). The improvement of living standards also spoils the government's effort because economic improvements provide additional resources for the rebels to draw from (Leites and Wolf 1970). More important, this strategy is ineffective in areas where the rebels destabilize local secu-

rity, because the provision of public services cannot compensate for the loss of life (Findley and Young 2007).

Once the logic of violence comes to dominate peoples' lives, personal survival becomes the priority for most (Kalyvas 1999; Lichbach 1995; Migdal 1974). Raising the cost of supporting the rebels would therefore work well for the government in its effort to reduce support for insurgencies and to maintain or increase its predominance over the rebels. The government uses violence against not only combatants but also civilians. Civilian collaboration with the rebels is likely in areas where the rebels can exert influence because of their physical presence. Therefore, due to the relative lack of government clout, the state often resorts to violence as a means of demonstrating its influence and making civilians aware of the cost of siding with the rebels (Kalyvas 2006).

Because the government would assume that rebel forces have clout in areas where their activities are observed, the recovery of control is seen as strategically important in those areas (Davenport 2007b, 488; Fjelde and Hultman 2014; Moore 2000; Poe et al. 2000). Rebels can ultimately present a greater menace to the government when they are rooted in the population. As the rebels effectively make use of their local connections for recruiting combatants, they find it relatively easy to expand their forces. To diminish the risk of future insurgency, the government therefore gives precedence to attacking the rebel base of support (Herreros and Criado 2009).

To understand why state violence fluctuates, therefore, it is important to examine how it is shaped by domestic threat (Davenport 1995). In civil war, the government is threatened primarily by the insurrections of rebels. The strategic importance of any specific region fluctuates over time with the war situation, because the relationship between the government and the rebels varies with the advances and setbacks of the war. The rebels carry out military operations ranging from encounters with regular forces to assassination of political figures and assault against media offices. By assaulting various targets, they seek to reduce the government's security forces and debilitate its base of support. For the government that intends to eliminate insurgency, in contrast, rebel insurrections are a major concern if it wants to stay in power. It would be a major setback to the government if rebel forces were to succeed in damaging its forces and support base.

TYPES OF REBEL ATTACK AND STATE VIOLENCE

Wartime state-led violence is thus a political and military consequence brought about by counterinsurgency operations, as the government seeks to uproot rebellious movements by weakening the rebels' support base. When the rebels employ guerrilla strategy by relying on their supporters, frontal attack is not the best measure for the government to adopt. In such a war, guerrillas hiding among civilians make it difficult for the government to target only armed actors. Where the distinction between combatants and civilians is ambiguous, the government tends to view

some groups of civilians as possible rebel participants or collaborators, whether they are aligned or not. In such a situation, the government sees logic in prioritizing the attack against an entire group of people whom they suspect may be collaborating with the rebels because it is otherwise difficult to distinguish the rebel combatants from the civilians (Balcells 2010; Stanley 1996).¹ The government accordingly seeks to contain the rebels by attacking the entire base of support for the insurgency (Valentino et al. 2004), and its violence physically reduces the population of potential rebels, as well as making others hesitant to collaborate with them (Lyll 2009).

Whether or not the government considers the threat to be serious depends on the potential for repercussion from the violence the rebels employ. When the threat is likely to endanger domestic rule and order, the government tends to use violence against whomever it perceives as the potential base of rebel support to prevent the spread of insurrection. Rebel attacks may otherwise expand to overwhelm counterinsurgency efforts.

In contrast, when the rebel threat is small, the use of violence is not an appropriate response. For one thing, resorting to violence is costly for the government because it necessitates the mobilization of military and financial resources. With limited resources, the government does not react to all assaults by the rebels, but each instance determines whether to carry out counterattacks and focuses resources on the more major offensives and nonmilitary spending. In addition, the government may open itself to potential retaliation by its targets. Not only is indiscriminate violence counterproductive when it incites antipathy, but it also encourages collaboration with and participation in opposition groups (Kalyvas 2006; Kalyvas and Kocher 2007).

However, the civil war context shrinks these costs as the rebel threat grows. The government is less hesitant to use violence against people who are unlikely to collaborate with it, either as combatants or supporters. Witnessing a close link between the rebels and civilians in particular areas, the government tends to regard those civilians not as comrades-in-arms but potential traitors. In addition, even in the context of civil war, to automatically connect the government's indiscriminate violence to the tightening of civilian collaboration with the rebels may be a logical flaw, because it assumes that the rebels can always afford to protect vulnerable civilians (Wood 2010).

The effect of indiscriminate regime violence is instead conditional on the capability of the rebel group. Indiscriminate violence would erode rebel resources through forcible population resettlement by reducing the population that functions as a rebel tax base and guarantees its supply lines. State violence imposes constraints on the rebels if civilians reactively blame them for inaction against the incumbent's violence, because the rebels need to change their current tactics to avoid civilian defections and noncooperation (Lyll 2009).

Hypothesis 1. Armed attacks by the rebels are apt to increase the likelihood of state violence against the population.

Rebel attacks can be disaggregated into those resulting in direct and indirect damage to the counterinsurgency. Attacks that bring direct damage tend to be aimed at the government military, police, and paramilitary forces. Targeting this security apparatus allows the rebels to impede counterinsurgency by physically reducing the state's security forces. The reduction in forces impairs the incumbent's intelligence capability. The lack of surveillance frees up rebel activity and generates a source for more insurgency. The loss of security forces, furthermore, makes it difficult for the government to carry out effective military operations against the rebels. A sufficient number of troops guarantees a predominance of government forces in battles and mopping-up operations.

The rebels can also weaken the military and political power of the incumbent by attacking its socioeconomic infrastructure and civil institutions. Like state violence that targets alleged rebel supporters, the rebels' target often includes perceived government collaborators. By targeting those people, the rebels seek to incite terror among them and ultimately erode the government's constituency.

In addition, the damage to infrastructure hinders not only daily life but also the logistics of the military. This approach may appear less powerful in affecting the government's capability for fighting the rebels because the damage to these sectors does not immediately result in the decline of counterinsurgency operations. Since repercussions may not appear until long after the attacks, civil war regimes are freer from the need to immediately rebuild civic life than are peacetime regimes, as the militarization of society prioritizes the defeat of enemies. Yet the government would probably be dealt a setback when nonsecurity sectors are damaged by the rebels, because infrastructure and civil institutions provide the basis for military activities. The government would be more likely to respond with violence to remove the threat caused by these rebel attacks.

Hypothesis 2.1. Rebel attacks against security apparatus are apt to increase the likelihood of state violence against the population.

Hypothesis 2.2. Rebel attacks against infrastructure and civil institutions are apt to increase the likelihood of state violence against the population.

The type of victim also influences the government's perception of rebel threat. Rebel attacks may victimize political figures, soldiers, police officers, and civilians. The loss of these people is immensely damaging because the government suffers the loss of human resources that operate government institutions and provide substantial support for the incumbent. The loss of popular support would also be brought about by the government's failure to protect civilians from rebel attacks. If the public comes to doubt the government's capability to maintain domestic order, people may decide to seek protection from other political actors.

Furthermore, the rebels can also target material objects, such as buildings and facilities. Although this type of attack does not entail the loss of human life, the government could be blamed for failing to prevent rebel attacks. The loss of popular support damages the government by eventually influencing the future war situation.

If these arguments hold, the benefit from resorting to violence exceeds the costs of conducting the operations.

Hypothesis 3.1. Rebel attacks resulting in human injury are apt to increase the likelihood of state violence against the population.

Hypothesis 3.2. Rebel attacks resulting in material damage are apt to increase the likelihood of state violence against the population.

RESEARCH DESIGN AND METHOD

This study aims to test the effect of rebel threat on state-led violence in counterinsurgency in the Guatemalan Civil War. To this end, it is possible to estimate a regression model in which the dependent variable is the occurrence of state violence for a given administrative unit and independent variables include rebel attacks and geographical and temporal characteristics of the analytical units. Estimating the effect of rebel attacks, however, gives rise to the issue of confounding, because the attributions of units could correlate with rebel attack as well as with state violence. The rebels may intensively carry out their operations in particular regions, while the government may concentrate its violence in areas of strong cultural legacy and antigovernment sentiment dating back to the pre-civil war era, without ascertaining whether the rebel threat remains real. Containing both threat effect and selection effect, the coefficient of simple regression estimates may therefore result in an overestimation bias.

To avoid this selection effect, this study employs the propensity score matching (PSM) method (Rosenbaum and Rubin 1983). The PSM allows the elimination of potential selection bias in observation data and estimating effects between variables. The propensity score is obtained typically through the logit or probit model, which estimates predicted probabilities of treatment, and is used to match each treatment observation with a control observation that has a similar pretreatment condition.

The treatments are dummies for the target and victim types of rebel attacks in each unit of analysis (municipality-month). Suppose that T_i is given 1 if the unit i experiences rebel attack, that $Y_i(0)$ denotes the government's reaction for i where no violence takes place, and $Y_i(1)$ is the government's reaction for i where violence takes place. The treatment effect of rebel attack is then $Y_i(1) - Y_i(0)$. Because $Y_i(1)$ and $Y_i(0)$ cannot be simultaneously observed, $Y_i(0)$ needs to be estimated counterfactually. The PSM assumes that if pretreatment characteristics X_i are similar or the same, the treatment effects can be estimated by comparing the treated unit and the non-treated unit. The pair of these units is twin, according to the *unconfoundedness* assumption:

$$E[Y(0) | T = 1, X = x] = E[Y(0) | T = 0, X = x],$$

and

$$E[Y(1) | T = 1, X = x] = E[Y(1) | T = 0, X = x].$$

Under this assumption, the treatment effect $Y_i(1) - Y_i(0)$ is estimated by $E[Y(1)|T = 1, X = x] - E[Y(0)|T = 0, X = x]$. The *overlap* assumption, $c < (T=1|X=x) < 1 - c$, also applies to match the treatment observation with similar precondition control observations ($0 < c < 1$). The probability estimator c is used to find an observation with the nearest or most similar characteristics. The postmatching measurement of treatment effect is estimated as the average treatment effect on the treated (ATT):

$$ATT = \frac{1}{N} \sum_{i|T_i=1} [Y_i(1) - \frac{1}{J_i} Y_j(0)],$$

where N is the number of treatment observations (number of municipalities with rebel attacks) and J_i is the set of comparison units matched to treatment unit i . An advantage of using the ATT is that it allows focusing on the government's reaction for units that experienced rebel attacks, not for all units in the data (average treatment effect: ATE) (Winship and Morgan 1999, 666).²

DATA

State Violence

This study employs the dataset on violence during the Guatemalan Civil War constructed by the International Center for Human Rights Investigations (CIIDH) (Ball 1999). This is an inclusive dataset (Sullivan 2012), and records 17,423 events and more than 45,000 victims of violence between 1962 and 1996 (Ball 1999, 2001).

The dataset contains information on not only the victims but also the perpetrators of the incidents. Violence events whose perpetrators were the incumbent's military, civil patrols (PACs), police, and paramilitaries were chosen for the analysis. Although the dataset categorizes incidents into six types (illegal detention, disappearance, injury, killing, kidnapping, and torture), these are aggregated into a single measurement of state violence in counterinsurgency. Minute categorization of violence does not necessarily tell us about the objectives in a series of counterinsurgency efforts; for instance, it is probable that the government actors unintentionally killed civilians while seeking to arrest them.

This study focuses on events after February 1982 so that the empirical analysis can examine the dyadic relationship between the government and the united organization of rebel forces, the Guatemalan National Revolutionary Union (URNG). The variable of state violence is given 1 if it is observed for a unit of analysis (i.e., municipality-month), and 0 otherwise. Because state violence often concentrates in specific regions and lasts for a long time (Carey 2010, 168; Schneider et al. 2012, 446), a series of incidents is treated as a single event. However, given that rebel attacks are sporadic and, each time, alter the government's threat perception, each incident should be separately analyzed.

The dataset contains violence events during the civil war that were recorded from testimonies, NGO files, and press sources (Ball et al. 1999, 5). The result may be an unequal distribution of unreported events across analytical units because inter-

viewees were not randomly sampled (Sullivan 2012, 382). The Human Rights Data Analysis Group (2000), a distributor of the dataset, asks researchers to include the note, “These are convenience sample data, and as such they are not a statistically representative sample of events in this conflict. These data do not support conclusions about patterns, trends, or other substantive comparisons (such as over time, space, ethnicity, age, etc).”

Because the dataset bases its information partly on interviews with survivors, it is possible that it fails to record victims of violence with whom those survivors had no contact during the war. This would indeed result in the underestimation of casualties. Ball et al. also recognize that interviewees could not often recollect all the victims in incidents (1999, 7). In addition, the degree to which the information is representative depends on the accessibility to witnesses in the fieldwork. Some interviewees may have been more accessible than others for political and geographic reasons. As a result, the dataset contains variation in area coverage for the estimation of total casualties (Ball 2013).

Yet because the dataset also employs document and press resources whose reliability is less influenced by physical accessibility to witnesses, a close correspondence can be expected for the coding of violence incidents between the collected data and the wider population. Although the dataset does not provide reliable information on the number and types of victims, it counts the number of events in a comprehensive way. Still, it is correct to say that the dataset may include more instances of state-led violence responding to severe rebel attacks than violence responding to less sensational attacks against infrastructure and civil institutions, because the former are more likely to be recorded by NGOs and newspapers. To avoid using raw data and to minimize the risk of underestimating underreported events, this study focuses on the occurrence of violence in a given unit of analysis, rather than its magnitude or intensity (e.g., Leiby 2009, 452–3).

In the dataset, there are a number of records in which no actor is identified. While 39 percent of incidents reported for the 1982–96 period account for the cases in which the incumbents participated, perpetrators are unknown for 60 percent of the sample.³ As for date precision, the month of the incidents is known for 71 percent of the sample, although the rest is not identifiable at the month level. Sifting reliable cases from the entire sample, reported incidents are converted into the data with municipality-month unit.

Rebel Attacks

The Global Terrorism Database (GTD) is used to define rebel attacks (START 2012). Although the GTD primarily aims to record terrorism activities by nonstate actors, it also covers rebel attacks against the government and military.⁴ “Terrorist” rebel groups are considered those who use a campaign of indiscriminate violence against civilian targets to make an impact on the population (Fortna 2015). In reality, however, rebel groups often mix terror tactics with guerrilla warfare. Using information on targets in the GTD, Abrahms (2012) codes armed campaigns as

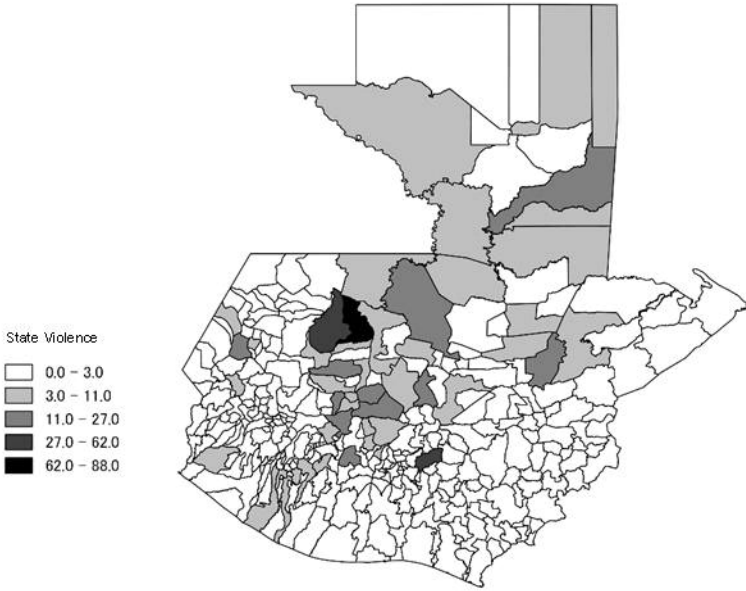
either guerrilla or terrorism because a single group commonly mixes guerrilla warfare with terror tactics (374–75). Following the action-based conceptualization of terrorism (Sánchez-Cuenca and de la Calle 2009), Findley and Young (2015) exclude from the dataset those events directed at a government or military target, so as to sort out terrorism campaigns, given that the dataset contains many guerrilla incidents. This study includes both types of attacks in the analysis so that it can assess the difference in their impacts on state violence. The analysis uses dummies for rebel attack that is observed in each unit.⁵

In February 1982, Guatemalan rebel groups formed a united organization, the URNG. From then on, the conflict was fought between government and URNG forces until the settlement in 1996. This analysis focuses on rebel attacks and state violence against the population during this period. The government's reaction to rebel insurrections can best be analyzed by the dyadic relationship between belligerents. In cases in which several rebel forces fight against the government, researchers would have to take into consideration what rebel groups carried out attacks against the incumbent, because each rebel group's strength and capability are key to the production of future threats against the government. Yet for events in which rebel perpetrators' identities are unknown, data on rebel organizations would be missing and would obstruct analysis.

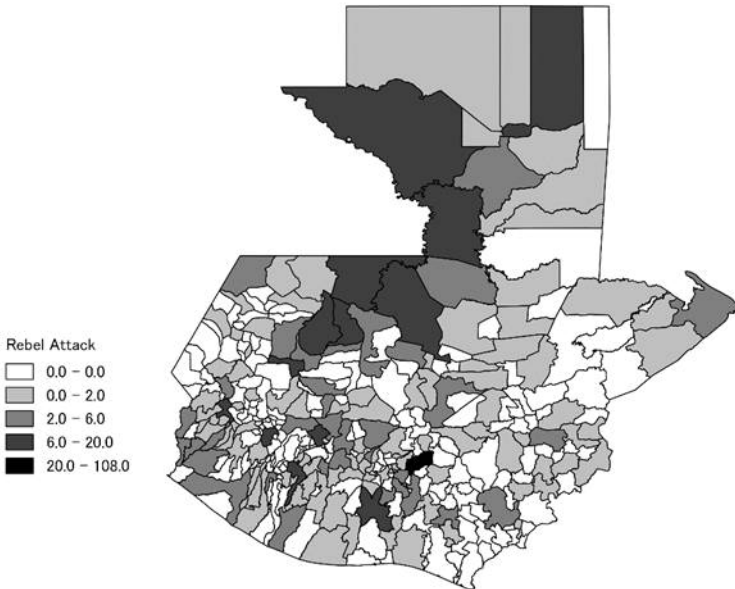
In reality, there were many incidents when the incumbent was unsure about who the perpetrators were for particular attacks. Such incidents still need to be included in the analysis because, in civil war, governments tend to react to the threat by targeting poorly defined enemies. In the Guatemalan case, although the URNG's member groups were not firmly united, the rebel attacks between 1982 and 1996 are considered overall to be the same as the group's armed activities because it formally represented a united rebel organization.⁶ Although the data analyzed also include attacks whose perpetrator's identity was unclear, the dyadic relationship between the government and the URNG allows the inclusion of observations of attacks that were apparently carried out by antigovernment political actors.⁷

The primary treatment variable includes all types of insurgent attacks (*Rebel Attack*). Rebel attacks are then disaggregated into different targets, *Security Apparatus* and *Infrastructure/Civil Institutions*, to estimate their treatment effects. The former comprises attacks targeting the military, police, and paramilitaries, and the latter targets public facilities (electricity, gas, and water supply) and institutions (business, educational, religious, media, nonmilitary government institutions, and transportation facilities). The category of victimization is defined as *Human Injury* if armed attacks are targeted at people, including ordinary citizens and political figures, and as *Material Damage* if the attacks aim at nonhuman targets, such as buildings, monuments, trains, and infrastructure. *Bombing/Explosion* is attack whose target and victimization are obscure; by blasting an entire neighborhood, this act may affect security apparatus or infrastructure/civil institutions and result in human injury or material damage. To examine the government's strategic reaction to rebel threat, the data for rebel attacks are lagged one month (see Sullivan 2012; Thomas 2014).

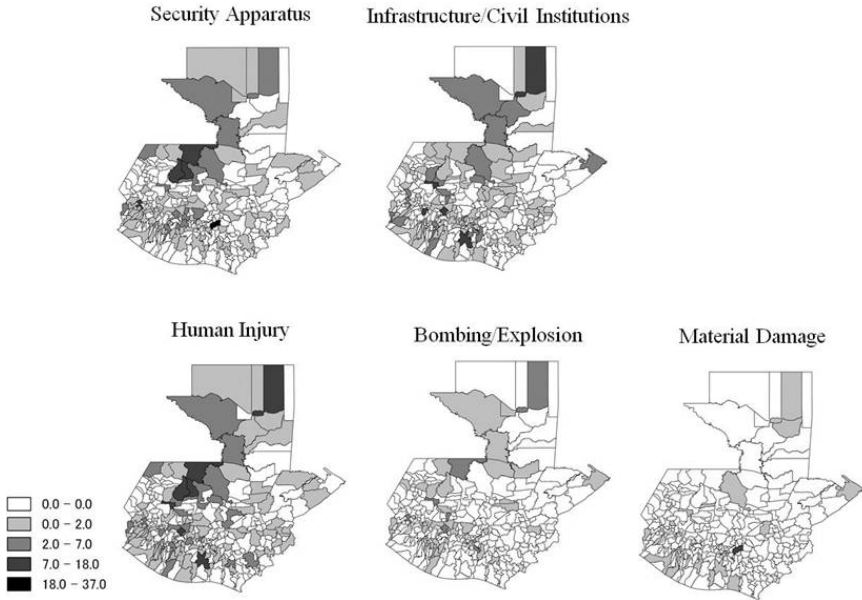
Map 1. State Violence by Municipality



Map 2. Rebel Attacks by Municipality



Map 3. Disaggregated Types of Rebel Attack by Municipality



Maps 1 and 2, respectively, show the counts of state violence and rebel attack by municipality. The maps indicate that while rebel attacks are spread over municipalities, state violence is concentrated in particular areas. This implies that the government did not react to all rebel insurrections but selectively responded to them. In addition, map 3 indicates that each type of rebel attack is unevenly distributed across municipalities. The results suggest that counterinsurgency operations were carried out, taking into consideration where and what type of rebel attack occurred.

Covariates

The propensity scores are estimated using the following variables. Direct distance is measured in hundreds of kilometers between the capital (Guatemala City) and the gravity center of each municipality, as the occurrence of rebel attacks may be contingent on geographical conditions (*Distance from Capital*). Civil war studies argue that it is difficult for the government to police the rebels and carry out long-distance operations in remote areas because state strength and military preponderance weaken toward the periphery (Buhaug et al. 2009; Rustad et al. 2011).

It is logical for the rebels to conduct insurrections in regions where government supporters are dominant if they seek to reduce the threat of the government. In other words, the rebels do not prioritize attacking areas where rebel collaborators are dominant. In this sense, it is strategically important for the rebels to target areas where progovernment ethnic groups reside (Herreros and Criado 2009, 426). To

Table 1. Descriptive Statistics

| Treatment Variable | State Violence (min = 0.000, max = 1.000) | | Distance from Capital ×100 km (min = 0.039, max = 3.247) | | Area Size ×1,000 km ² (min = 0.005, max = 8.874) | | % Indigenous (min = 0.003, max = 0.998) | |
|-----------------------------------|---|-------|---|-------|--|-------|---|-------|
| | Observations | Mean | Observations | Mean | Observations | Mean | Observations | Mean |
| Whole samples | 55,611 | 0.014 | 54,275 | 1.166 | 55,277 | 0.329 | 54,609 | 0.507 |
| Rebel attack | | | | | | | | |
| = 1 | 524 | 0.181 | 413 | 1.354 | 523 | 0.660 | 503 | 0.401 |
| = 0 | 55,087 | 0.013 | 53,862 | 1.164 | 54,754 | 0.326 | 54,106 | 0.508 |
| Security apparatus | | | | | | | | |
| = 1 | 243 | 0.226 | 206 | 1.406 | 243 | 0.731 | 225 | 0.480 |
| = 0 | 55,368 | 0.013 | 54,069 | 1.165 | 55,034 | 0.327 | 54,384 | 0.507 |
| Infrastructure/civil institutions | | | | | | | | |
| = 1 | 318 | 0.170 | 216 | 1.319 | 317 | 0.579 | 315 | 0.322 |
| = 0 | 55,293 | 0.013 | 54,059 | 1.165 | 54,960 | 0.328 | 54,294 | 0.508 |
| Human injury | | | | | | | | |
| = 1 | 356 | 0.225 | 280 | 1.350 | 356 | 0.697 | 342 | 0.413 |
| = 0 | 55,255 | 0.013 | 53,995 | 1.165 | 54,921 | 0.327 | 54,267 | 0.508 |
| Bombing/explosion | | | | | | | | |
| = 1 | 135 | 0.193 | 67 | 1.391 | 134 | 0.493 | 131 | 0.262 |
| = 0 | 55,476 | 0.014 | 54,208 | 1.165 | 55,143 | 0.329 | 54,478 | 0.508 |
| Material damage | | | | | | | | |
| = 1 | 31 | 0.161 | 23 | 1.392 | 31 | 0.468 | 31 | 0.295 |
| = 0 | 55,580 | 0.014 | 54,252 | 1.166 | 55,246 | 0.329 | 54,578 | 0.507 |

(continued on next page)

Table 1. Descriptive Statistics (continued)

| Treatment Variable | Ríos Montt Administration (min = 0.000, max = 1.000) | | Mejía Victores Administration (min = 0.000, max = 1.000) | | Cerezo Administration (min = 0.000, max = 1.000) | | Serrano Elías Administration (min = 0.000, max = 1.000) | |
|-----------------------------------|---|-------|---|-------|---|-------|--|-------|
| | Observations | Mean | Observations | Mean | Observations | Mean | Observations | Mean |
| Whole samples | 55,611 | 0.096 | 55,611 | 0.174 | 55,611 | 0.359 | 55,611 | 0.174 |
| Rebel attack | | | | | | | | |
| = 1 | 524 | 0.260 | 524 | 0.198 | 524 | 0.261 | 524 | 0.115 |
| = 0 | 55,087 | 0.094 | 55,087 | 0.173 | 55,087 | 0.360 | 55,087 | 0.174 |
| Security apparatus | | | | | | | | |
| = 1 | 243 | 0.288 | 243 | 0.284 | 243 | 0.284 | 243 | 0.078 |
| = 0 | 55,368 | 0.095 | 55,368 | 0.173 | 55,368 | 0.360 | 55,368 | 0.174 |
| Infrastructure/civil institutions | | | | | | | | |
| = 1 | 318 | 0.255 | 318 | 0.154 | 318 | 0.230 | 318 | 0.135 |
| = 0 | 55,293 | 0.095 | 55,293 | 0.174 | 55,293 | 0.360 | 55,293 | 0.174 |
| Human injury | | | | | | | | |
| = 1 | 356 | 0.270 | 356 | 0.199 | 356 | 0.281 | 356 | 0.110 |
| = 0 | 55,255 | 0.095 | 55,255 | 0.173 | 55,255 | 0.360 | 55,255 | 0.174 |
| Bombing/explosion | | | | | | | | |
| = 1 | 135 | 0.148 | 135 | 0.185 | 135 | 0.267 | 135 | 0.193 |
| = 0 | 55,476 | 0.096 | 55,476 | 0.174 | 55,476 | 0.360 | 55,476 | 0.174 |
| Material damage | | | | | | | | |
| = 1 | 31 | 0.419 | 31 | 0.129 | 31 | 0.097 | 31 | 0.032 |
| = 0 | 55,580 | 0.096 | 55,580 | 0.174 | 55,580 | 0.359 | 55,580 | 0.174 |

measure the potential level of rebel or government support from the locals, the proportion of indigenous population is calculated for each municipality on the basis of the 1981 census (*% Indigenous*).

The observation of rebel attacks is contingent on the area size of municipalities (*Area Size*, measured in thousands of square kilometers). The larger the municipality, the more likely that it will experience rebel attacks. Temporal variation also influences the rise and fall of rebel attacks. For instance, the rebels widely targeted not only military facilities but also infrastructure and business institutions from mid-1981 through 1982 (Manz 1988, 15; Zur 1998, 70). After the peace talks in 1986, however, rebel attacks declined. Although sporadic fights occurred between rebel and government forces, fewer armed clashes were observed in this period because the URNG shifted its strategy to settling the conflict through negotiations (Jonas 2000, 18). In addition, the temporal trend in violence was determined by counterinsurgency policies. The Guatemalan government started step-by-step preparations for peace agreements after the establishment of its civil administration. To estimate these effects, dummies of presidential terms are used for the analysis (*Ríos Montt Administration*, *Mejía Victores Administration*, *Cerezo Administration*, *Serrano Elías Administration*, and *de León Carpio Administration*).⁸

Table 1 presents how values of *State Violence* and the covariates differ when particular types of rebel attack are present (= 1) or absent (= 0). Reported are mean scores of these variables, which are averaged separately for units with and without treatment observations. Minimum and maximum values are also presented in the first row.

Municipalities with rebel attacks were farther from the capital than municipalities without attacks, which suggests that the rebels were active in remote areas. Area size also matters insofar as whether or not the municipalities tended to experience rebel attacks; larger municipalities experienced more insurrections. More important, the government was more likely to use violence in the municipalities where rebel attacks took place. This finding is consistent across different types of rebel attacks. In addition, rebel attacks were more frequent in areas where the indigenous population was smaller. Insurrections were aimed at disturbing the localities alienated from the rebels. Rebel attacks also had temporal patterns; units with no attacks are more frequently observed after the Cerezo administration. The data thus contain the problem of selection bias.

Table 2 shows the results of logit estimation on the treatments.⁹ As in table 1, rebel attacks declined as the war progressed. While distance from the capital is not associated with the occurrence of attacks, area size shows results suggesting that rebel attacks tended to take place in larger municipalities. The indigenous population has a relatively inconsistent relationship with rebel attacks. While the variable is negatively associated with rebel attacks on infrastructure/civil institutions and material objects, it increases the likelihood of attacks against security apparatus. In municipalities where more indigenous citizens resided, the rebels prioritized reducing the security forces. While the government would seek to tighten surveillance over these areas, its presence may instead have attracted insurrections by the rebels.

Table 2. Logit Estimation Results for Rebel Attacks

| | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------------------------------|---------------------|-----------------------|--|---------------------|-----------------------|---------------------|
| | Rebel Attack | Security Apparatus | Infrastructure/ Civil Institutions | Human Injury | Bombing/ Explosion | Material Damage |
| Distance from capital ×100 km | 0.168 (0.090) | 0.179 (0.136) | 0.190 (0.117) | 0.072 (0.113) | 0.340 (0.207) | 0.563 (0.315) |
| Area size ×1,000 km ² | 0.247** (0.038) | 0.284** (0.053) | 0.209** (0.051) | 0.293** (0.045) | 0.170 (0.090) | 0.003 (0.183) |
| % Indigenous | -0.020 (0.143) | 0.549* (0.212) | -0.457* (0.194) | 0.199 (0.175) | -0.453 (0.351) | -1.109 (0.599) |
| Ríos Montt Administration | -0.828** (0.205) | -0.238 (0.362) | -1.040** (0.246) | -0.802** (0.245) | -0.906 (0.574) | -1.483** (0.510) |
| Mejía Victores Administration | -1.852** (0.215) | -0.933* (0.364) | -2.486** (0.283) | -1.936** (0.262) | -1.233* (0.558) | -3.380** (0.709) |
| Cerezo Administration | -2.292** (0.208) | -1.590** (0.362) | -2.753** (0.260) | -2.154** (0.245) | -2.230** (0.574) | -5.206** (1.081) |
| Serrano Elías Administration | -2.646** (0.249) | -2.325** (0.436) | -2.763** (0.302) | -2.633** (0.299) | -1.988** (0.614) | |
| de León Carpio Administration | -2.868** (0.258) | -4.959** (1.055) | -2.625** (0.288) | -3.482** (0.372) | -1.937** (0.603) | -3.852** (0.818) |
| Constant | -3.263** (0.216) | -4.922** (0.386) | -3.411** (0.258) | -3.684** (0.261) | -5.372** (0.573) | -4.893** (0.601) |
| Observations | 54,108 | 54,108 | 54,108 | 54,108 | 54,108 | 44,712 |

Standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$.

ANALYSIS

Using propensity scores obtained from the logit models, treatment observations were matched with control observations that had similar predicted probabilities for rebel attacks. After the cases were randomized, one-to-one nearest neighbor matching was employed. The “neighborhood” contains a control observation as a match for a treated observation, so that the absolute difference of propensity scores can be the smallest among all possible pairs of the scores between control and treated observations. Once a single control observation was found to match to a treated observation, the former was removed from the set of control observations without replacement.

Dropping control observations that failed to meet the overlap criteria with treated observations, the following analysis deals with the sample that consisted of municipalities that experienced rebel attacks in a given month and municipalities

Table 3. The ATTs of Rebel Attacks

| | ATT |
|-----------------------------------|--------------------|
| Rebel attack | 0.038* (0.016) |
| Target | |
| Security apparatus | 0.057* (0.025) |
| Infrastructure/civil institutions | 0.038 (0.020) |
| Losses | |
| Human injury | 0.064** (0.021) |
| Bombing/explosion | 0.066 (0.037) |
| Material damage | 0.087 (0.072) |

Standard errors in parentheses.

*p < 0.05, **p < 0.01.

that were most likely to experience the attacks but did not in reality. Although the matching extracts only a limited sample from the general population, it reduces biases that are potentially caused by the selection effect. Because all standardized biases are below 2 percent according to the balance check of covariates, treatment observations are comparable to control observations (Caliendo and Kopeing 2008).

Table 3 shows the ATTs of rebel attacks on state violence. The coefficient of *Rebel Attack* is positive and significant at the 5 percent level, implying that the threat from rebel assaults incites state violence against the population (hypothesis 1). Any attacks by the rebels signal to the incumbent that the rebels are active. The military potential of the rebels, in particular, motivates the government to contain the source of further rebellion.

For types of target, the results are supportive of hypothesis 2.1 but not 2.2; rebel attacks targeting the security apparatus are likely to be linked to state violence, while the effect of attack against infrastructure/civil institutions is not statistically significant at the 5 percent level. It is possible that the government perceives a great threat from attacks on its security apparatus because the attacks would have a serious impact on counterinsurgency activities. That the rebels can attack the security forces demonstrates their logistical competence. Although the rebels may avoid head-on collisions with government forces, they have to be able to access local information on the enemy and to organize military units for carrying out ambushes. With the expansion of rebel firing lines, these capabilities would pose a threat to the government.

As for types of loss, rebel attacks resulting in human injury have a positive and significant ATT at the 1 percent level (hypothesis 3.1). For the government, human

injury causes problems such as the loss of political leaders, administrators, and supporters. The damage has immense repercussions on counterinsurgency, as well as on governance of the country. Threatened by the assaults, the government reacts with the use of violence against potential rebels. In contrast, the ATT of material damage does not reach the 5 percent level of statistical significance. Although the lack of significance may be ascribable to the small number of treated observations ($n = 31$), the impact of this type of attack is undetermined.

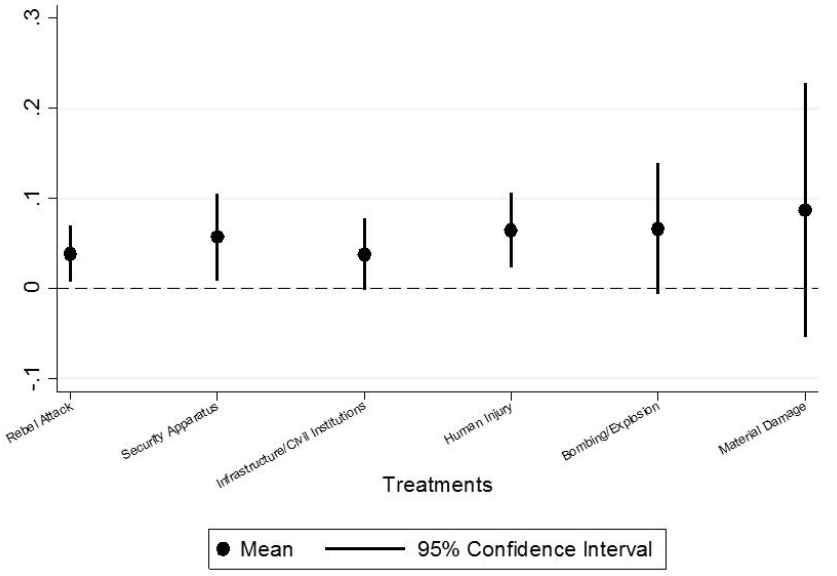
While the material loss seriously affects various aspects of public life, its influence could not be primary in some contexts. When citizens' priority is survival in the crossfire, for instance, such damage would not largely diminish popular support for the incumbent, unlike what hypothesis 3.2 predicted. It is even possible that the attacks would arouse antirebel hostility among the citizens. If incumbent leaders recognize this, rebel attacks resulting in material damage will not provide a sufficient incentive for the government to resort to violence against the population. In this situation, the use of violence does not pay off over military expenses or the risk of increasing popular support for the rebels.

The results also suggest that although its ATT is slightly greater than that of human injury, bombing/explosion is not linked to state violence. Attacks with explosive devices may result in both human injury and material damage, according to their scale and timing. Yet the impact of this kind of attack could be mixed, as the resulting threat is dependent on what losses are caused by the attack.

These results are visualized in figure 1 with the mean values and 95 percent confidence intervals of the ATTs. They are consistent with the result in table 3 that the treatment variable *Rebel Attack* has a positive effect on state violence. The finding again supports hypothesis 1, holding that rebel attacks breed state-led violence. The figure also suggests that *Security Apparatus* and *Human Injury* have positive effects on the government's use of violence. These assaults would induce hardline reactions by the government.

By contrast, the remaining treatment effects are indistinguishable from zero. The treatment *Material Damage* is influential on state violence, but its effect may also be zero and negative. While material damage may possibly lead to state violence, it cannot be asserted that it has a negative or even no impact on the government's reaction. The ATT of *Bombing/Explosion* also has a wide confidence interval, suggesting that it may be zero or negative. This type of rebel attack causes both human injury and material damage. If it does not produce a serious threat for the government, however, its effect of inciting state violence is limited, in which case the effect on state violence cannot be distinguished from zero or negative. The confidence interval of *Infrastructure/Civil Institutions* ranges from 0.077 to -0.002 , implying that the treatment effect does not hold at the 5 percent level of significance.

Figure 1. The ATTs of Rebel Attacks



CONCLUSIONS

Because rebel activities were closely related to state violence during its civil war, Guatemala is a suitable case for an empirical analysis of the interaction between the rebels and the government during the war. Because the question of whether the state-led violence was indeed caused by rebel attacks has been debatable, this article has attempted to address whether and how the government reacted to episodes of rebel insurrection. There is an advantage in looking at this as-yet unexplored aspect, wherein the activities of these two actors are linked.

Given that state violence intensively occurred in the context of armed conflict, it can be best explained by the interaction between the government, rebels, and civilians. The analysis indicates that rebel threat was clearly linked to state violence. The government, however, did not uniformly respond to each rebel attack but instead carried out counterinsurgency operations by taking into account the effect of rebel threat on its political and military status. The analysis of state violence in the Guatemalan Civil War suggests that rebel attacks targeting security apparatus and resulting in human injury were most apt to increase the likelihood of state violence.

Compared with state violence in other cases, abuse of civilians by the Guatemalan government was unusually massive and indiscriminate, particularly in the early 1980s. The government's targeting of civilians was not justified. It is important to note the caveat that not all governments facing effective antigovernment movements would resort to the genocidal killing of civilians. For the Guatemalan govern-

ment, when it used violence against perceived opponents, the opponents were linked to rebel groups.

Beyond Guatemala, however, the lessons of this study would apply to other cases of civil war. The occurrence of state violence is contingent on the impact of rebel activities on a government's capability over time. If rebel attacks are expected to damage the incumbent's counterinsurgency and popular support, the government may resort to violence against the population to remove any menace to its future survival.

The findings of this study imply that governments would selectively react to rebel threat. It is misleading to consider counterinsurgency as a consistent policy of the governments. Instead, counterinsurgency is a series of disaggregated initiatives against the rebels. In this sense, the governments conduct their military operations while concurrently constrained by the strategic interaction with rebel forces, both sides seeking to reduce the opponent's influence by defeating armed forces and destroying popular support.

NOTES

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1. During the Vietnam War, for example, South Vietnamese government and U.S. forces exercised indiscriminate violence in places fully controlled by the rebels (Kalyvas and Kocher 2009).

2. This study thus examines the effect of rebel attacks on state violence in a given municipality, although it is undeniable that state violence spreads to neighboring municipalities. Because geospatial units are treated independently, the spillover effects fall outside of the analysis.

3. The remaining small portion of incidents were caused by the rebels.

4. The database is used in empirical studies of terrorism, including Findley and Young 2012 and Thomas 2014.

5. The number of victims resulting from rebel attacks also seems an important variable that has an impact on the occurrence of state violence. Although the GTD contains information on casualties, however, the analysis refrains from employing those data because there are many "unknown" entries, particularly during the civil war period, and the figures are therefore likely to be biased.

6. Several sources estimate that the rebels at their peak (about 1980) numbered 5,000 to 8,000 combatants and depended on over 250,000 local supporters (Arias 1990, 255; Garrard-Burnett 2010, 41; Jonas 2000, 23; Le Bot 1996, 95; Zur 1998, 82). The strength of the rebels was reduced to 3,600 combatants by the end of the war (Hauge and Thoresen 2007, 15).

7. In contrast, incidents whose location is unknown are excluded from the analysis because they cannot be assigned to any units.

8. The García administration (July 1978–March 1982) is used as a reference category. The Salguero administration is dropped from the analysis because it lasted only from June 1 to 5, 1993.

9. The variable *Serrano Elías Administration* is dropped from model 6 because no material damage was observed during this period.

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