Levels of combatant control and the patterns of non-incumbent/insurgent violence experienced by civilians living in Sunni–Arab communities in Iraq (2004–2009)

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Stephen C. Poulson[a] and Kelly A. Burke[b]

[a]Department of Sociology, James Madison University, Harrisonburg, VA, USA; [b]Virginia Tech Carilion School of Medicine and Research Institute, Blacksburg, VA, USA

ABSTRACT

This study explores how one social-structural variable, control over Sunni–Arab communities during the Iraq civil war, affected the types of violence used by insurgent/non-government actors that killed and injured civilians in these communities from January 2004 to December 2009. The study classifies three levels of control: (1) incumbent (government-supported) control, (2) insurgent control and (3) actively contested control. It uses Iraq Body Count (IBC) fatality data to characterize two general types of violence (selective and indiscriminate) evident during the Iraq conflict. It demonstrates that the type of violence committed by non-government actors was significantly ($P > .01$) different as related to the level of control insurgents had over territory. Primarily, insurgents/non-governmental actors used more selective forms of violence when insurgents controlled territory and more indiscriminate violence when incumbent (government-supported) forces controlled territory. Also, acts of indiscriminate violence cause considerably more injuries and death per act as compared to selective violence. Importantly, if control over territory has broadly generalizable effects on the types of violence that civilian's experience during civil war, than understanding this relationship could be useful when determining the types of medical assistance, medical supplies and training most needed in combat zones.

Introduction

This study examines how one social-structural variable – control over communities during the Iraq civil war – had considerable impact on the types of

violence that *insurgent/non-governmental* actors directed towards civilians living in these communities. Generally, civil war is broadly defined and comparatively unique, but it always involves armed conflict designed to gain control of territory (see Hironaka 2008). This fact often results in violence and coercion being directed towards civilians in regions where control of territory is contested (see Downes 2008; Hugo 2008). Notably, since the end of World War II, civil war has caused considerably more civilian death when compared to transboundary war (see Lacina 2006). This analysis examines whether the levels of insurgent and incumbent (government-supported) control over Sunni–Arab territory in Iraq patterned the violence directed by insurgent and non-governmental actors towards civilians living in those communities. Generally, while there are a multitude of variables (e.g. geography, outside support, access to weaponry, etc.) that affects patterns of violence directed towards civilians, past studies have consistently demonstrated that control over territory is among the most important (Eck and Hultman 2007; Downes 2008; Kalyvas 1999, 2004, 2006; Lyall 2009, 2010; Wood 2010).

While this study concentrates on how different types of violence impacted patterns of civilian death, it adds a summary analysis of the corresponding severity of civilian injuries that took place during many of these same attacks. Taken together, these are indicative of the types of trauma that medical personnel will encounter in areas that are shifting in terms of control among different factions. Overall, we are hopeful that the information in this study might be helpful in confirming what aid providers 'on the ground' may have long suspected are common patterns of violence directed towards civilians in civil war. Importantly, if *control of territory* has broadly generalizable effects on the types of violence committed against civilians during civil war, then understanding these patterns might help aid providers working in difficult circumstances anticipate the broad shifts in the violence they will encounter as territory is contested.

This study concentrates on patterns of insurgent/non-governmental violence mostly committed by Sunni–Arab factions that were directed towards co-ethnic communities. The reasons for this include the following: (1) because people in these communities shared the same ethnicity as insurgents it sometimes obscured the fact that these civilians, usually considered supportive of insurgency, still experienced considerable violence in insurgent controlled territory; (2) similar dynamics associated with co-ethnic violence are ongoing in other civil conflicts and these patterns of violence may offer insights into violence occurring in other communities, (3) Arab insurgent groups, when directing violence towards ethnic enclaves and mixed ethnic communities, probably employed different patterns of violence than that directed towards co-ethnic communities (see Poulson 2017; Sambanis 2001) and (4) this helped minimize the possibility that this study would inadvertently capture incidences of inter-ethnic community violence.

We believe the best conception of how control over territory is translated into individual action in war zones is when it is characterized as having a direct impact on the ability of warring actors to collect information concerning their levels of support. Put simply, the primary motivation for groups when they control territory is to hold it by using selective violence – violence that targets specific people – as a means of 'sorting' civilians into supporters and dissenters (see Downes 2008; Hugo 2008; Kalyvas 2006). As such, control allows actors to collect information concerning their support and also actively coerce and punish, in a selective manner, those who are acting against them (for news reports that describe insurgent and government forces 'sorting' civilian supporters in Iraq see Knickmeyer and Finer 2005; Partlow 2007). The inability to gather this information in areas where actors do not have control of territory increases the motivation to employ violence in a more indiscriminate manner. For example, employing indiscriminate violence can be used to compromise a competing group's ability to hold territory (see Kalyvas 2006; Posen 1993; Tilly 1985; Valentino, Huth, and Balch-Lindsay 2004).

Several studies have found that both insurgent and incumbent actors tend to employ more selective violence in the territories where they exercise greater control. Moreover, this type of violence does appear motivated by a need to reward supporters and punish dissenters (Downes 2008; Kalyvas 2006; Lyall 2009, 2010; Valentino, Huth, and Balch-Lindsay 2004). For example, Charles Tilly (1985) characterized this type of violence as the 'double-edged' sword of 'protection' that militias often extend to citizens in areas where they seek to establish control. Protection rackets – the extension of protection to some citizens while directing violence towards others – would also include tactics such as extortion, kidnapping and ransom. More serious types of selective violence routinely reported within Iraq would include public executions, beheadings, torture and the execution of community leaders whose allegiance was considered circumspect by occupying insurgent forces.

The exclusion of government supported violence against civilians

This study *only* investigates patterns of non-government and insurgent violence against civilians. The reasons for excluding government-supported (incumbent) violence was made for a few reasons, but largely because over 80% of all fatalities associated with incumbent violence in the region occurred during an extraordinarily violent air campaign directed towards insurgent groups occupying Fallujah. Not surprisingly, the corresponding rates of civilian injury were also extraordinarily high. In this respect, it was quickly evident that the civilians of Fallujah – relative to the other communities studied – had a unique experience concerning the violence they endured during this

campaign. As such, this experience should probably be closely analysed in isolation to the others. At the same time, the experience of Fallujah does not appear to be unique when compared to other conflicts in the region in which specific cities – usually those considered to be harbouring the most powerful opposition groups – are disproportionately targeted with aerial bombardments. For example, the Syrian government bombardment of communities in the Eastern Ghouta region of Syria in February 2018 – where it has been credibly reported that over 1,700 civilians were killed (see Rodgers, Trowsdale, and Bryson 2018) – may be representative of a similar dynamic that occurred in Fallujah in which asymmetrical air power at the disposal of government forces caused comparably high rates of civilian injury and death.

More generally, it is important to recognize that violence committed by incumbent groups – the nascent Iraqi national government, the United States armed forces and other allies – also caused considerable civilian death and injury to civilians in many Iraqi communities. Generally, past studies (e.g. Kalyvas 2006) have indicated that government factions often operate in much the same manner as insurgent forces as it relates to the patterns of violence used against civilians during civil war. For example, lack of government 'control' of a village often corresponded with an increase in the likelihood that more indiscriminate acts of violence were directed towards its citizens. In fact, Kalyvas (1999) explored this logic with respect to the Algerian Civil War when it became routine for the Algerian government to indiscriminately attack civilians in small outlying villages where the residents were considered likely supporters of the Islamic Salvation Front (FIS).

Given the previous, one important future inquiry into regional government violence against civilians during civil war should be an investigation as to whether it is common for a few specific communities to be disproportionately targeted with indiscriminate air attacks when incumbent groups (or their supporters) have superior air technology. While Fallujah is only one case in Iraq, it does appear that these types of campaigns have occurred in other conflicts and also do extraordinary harm to the civilian population in short periods of time. In fact, the motivation here may be to employ a disproportionate use of force in an effort to quickly overwhelm and/or punish possible civilian supporters of insurgency. If this is the case, it would largely support Downe's (2007) study in which he characterized extraordinary acts of indiscriminate violence used by incumbent actors as attempts to 'drain the sea by filling the graves.' In effect, the motive of government forces (and their supporters) to act with extraordinary levels of violence against a few communities might be to kill and deter civilians in neighbouring regions from joining insurgent groups. Further, these kinds of 'demonstrations' may be the most damaging – in terms of overall rates of fatality and injury – that civilians experience during civil conflicts.

Research design and measures

Data source

This study uses a unique database, the Iraq Body Count (IBC), in which analysts compile detailed fatality and injury data, primarily from media sources, that is supplemented by official and NGO data where available. This database is publicly available, but IBC staff also provided the authors of this study with the available corresponding injury data. As the founders of the IBC have noted, their methods do not capture the universe of violent killing and injuring of civilians in Iraq, but by pooling media coverage, the IBC is remarkably detailed with respect to what violence 'looks like' on the ground (About the Iraq Body Count nd; Hicks et al. 2009). Generally, it has been found that the greater the size, intensity and duration of a conflict, the greater the validity of conflict data gathered from media reports (Danziger 1975; Snyder and Kelly 1977). The Iraq war – as compared to others – has been well covered by multiple media sources for its duration.

For the period and locations in this study, the authors initially culled IBC data that accounted for 2,818 acts of violence that killed as many as 10,759 civilians. Of these, 2,200 attacks could be generally characterized as using a form of selective or indiscriminate violence that was not committed by government forces and their supporters. This violence killed as many as 7,798 civilians. To reiterate, this is not the universe of events that killed civilians in these communities during the period analysed and the goal of this analysis is not to 'pin down' the overall fatality rates during the period studied. Rather, the purpose is to use the IBC data to analyse the changing types of violence directed towards civilians by insurgent/non-governmental actors as *control of territory* shifted. In this respect, we believe that the IBC data that fit our scope conditions represents enough violent acts to make meaningful distinctions as to whether the types of violence employed by insurgents/non-governmental actors varies as associated with who controls territory. We also feel confident that the data can be used to generally characterize which types of violence are the most destructive in terms of civilian death and civilian injury.

The injury data provided to us by the IBC were often less complete than the fatality data. First, there are often cases in which media report fatalities but do not provide a corresponding estimate of the people who were injured in the same attack. There are also incidences in which the number of people injured is not reported because it is unlikely that there were any corresponding injuries as a result of the violence. This is particularly the case for incidences of selective violence (e.g. a stabbing death) when the number of people assaulted was low. This pattern of reporting is probably also related to the fact that the incidence of injury appears much greater during indiscriminate attacks as compared to more selective forms of violence.

Given the previous constraints and our scope conditions (below) we were able do a summary analysis of 1,554 insurgent attacks causing at least one fatality during which as many as 10,555 people were injured.

Like the IBC fatality data, the injury data are not the universe of attacks causing injuries to civilians. For example, the events being analysed in this study are those in which there was also at least one fatality reported. As such, this analysis does not capture more routine acts of coercion that can cause injury to civilians during civil war. With respect to all the previous, it is important to reiterate that the purpose of this analysis is not to determine the universe of violence that civilians experienced in these regions. Rather, we believe there are enough IBC data associated with civilian death and injury that it is possible to identify trends in the patterns of violence that civilians experienced over time. Practically, those who study violence during war have long grappled with the fact that fatality and injury data are never complete. With this fact in mind, the IBC database appears to have captured a greater level of detail associated with specific acts of violence in Iraq when compared to other databases often used to study fatality trends in civil war (e.g. Uppsala Conflict Data). Importantly, the IBC fatality and injury data have been used previously to identify trends associated with injury and death in studies published by prominent medical journals that include the *New England Journal of Medicine* (Hicks et al. 2009) and *Lancet* (Hicks et al. 2011).

Communities in the study

The predominantly Sunni–Arab communities studied are located in Anbar, Diyala and Babil provinces. They are as follows: Yusifiyah, Iskandariyah, Latifiyah, Madain, Mahaweel, Haditha, Fallujah, Al-Qaim, Ramadi, Jurf Al-Sakhar, Khalis, Heet, Baqubah, and Muqdadiyah. We only analysed fatalities that were reported as occurring 'within' these communities, and not those that took place nearby (e.g. on a road 'between' two locations). These communities were selected primarily because they have majority Sunni–Arab populations that largely shared the same ethnicity and religion as insurgents operating in the area. This limited the incidences of inter-ethnic violence in these communities. In this respect, we believe that conditions and patterns of violence in areas where Arab insurgents acted to control mixed ethnic communities is often different when compared to how they acted to control co-ethnic communities (see Poulson 2017) and tried to avoid this confounding our results given our variable of interest.

One community studied, Baqubah – the capital of Diyala Province – is something of an exception with respect to our selection criteria. This large community has a majority Sunni–Arab population, but there were significant numbers of Shia Arabs and other minority ethnic groups living in the city previous to 2004. In this case, it appears that many of these ethnic minorities fled the city relatively early in the conflict as Sunni–Arab insurgents exercised

increasing levels of control and often made Diyala Provence the centre of resistance (see Spinner 2004; Partlow 2007). These facts led us to include the community in the study.

Our initial intention was to include all Sunni dominated communities located in Anbar, Diyala and Babil Province for which there were IBC fatality data. We eliminated several localities because we were unable to determine all the *levels of control* they experienced. In these cases the shifting levels of control were too opaque, or the news reports concerning control too contradictory, to assign conditions of control as associated with our scope conditions (see below). Generally, the lack of media focus on the smallest communities caused us to exclude some of them from the analysis. Importantly, the majority of violence in the three provinces likely occurred during attempts to control larger cities – particularly the regional capitals – and these communities are included in the study.

Catagorizing 'who' committed violence killing civilians

The IBC allows for the re-coding of data so that these can broadly characterize who committed acts of violence. For example, when the specific perpetrators were not specified, we characterized certain acts of violence (e.g. suicide bombing, roadside bombing, etc.) as insurgent/non-government violence. Similarly, violence directed towards police, politicians, first responders, etc., was characterized as insurgent violence. Generally, we believe that these types of violent acts were most often committed by people who can be broadly characterized as acting against the coalition forces and/or the new Iraqi government. Still, this study has likely captured some homicides perpetuated by people who did not regard themselves as 'insurgents.' For example, localized gangs often exert greater influence during civil war and may have also been targeting the police. In some other cases, there were rivalries and competition among various insurgent groups – some directing violence towards one another – even when these groups were ostensibly 'allies' in the fight against the Iraqi national government and American armed forces. Overall, the specificity of the IBC makes it reasonably certain that most of the violence analysed in this study was perpetuated by those who can be broadly characterized as 'anti-government', but it is likely some of this violence was associated with an increase in crime, personal vendetta, and internecine quarrelling among insurgent 'allies' that is common during civil conflicts.

Independent variable: levels of control

This study established three levels of control: (1) *actively contested control*, (2) *predominately insurgent control* and (3) *predominately incumbent control*. The levels of control were identified by doing a LexisNexis Academic database

search for news articles that reported on troop movements in all the communities included in the study. LexisNexis Academic can search for articles that originate from 3,000 newspapers worldwide and over 2,000 magazines. It also includes transcripts from television and radio broadcasts that originate from relatively small regional markets around the world. We did keyword searches for all the cities in the study. We then narrowed the search using terms like 'control' 'offensive', etc. for cities (e.g. Fallujah) that were widely covered during the conflict. KAB conducted the initial LexisNexis search and assigned, to the day, the levels of control within the communities. In cases where there were conflicting reports associated with control, both KAB and SCP reviewed the articles and assigned the control dates.

We chose the time period investigated (2004–2009) because it generally coincided with a 'waxing and waning' of insurgent and incumbent control during the first extended period of war in the region. In general, reports indicated that it was during the Spring of 2004 that identifiable groups – both indigenous insurgents along with foreign fighters – began to actively contest for control of territory in direct opposition to the Iraqi Coalition Provisional Authority and its supporters. Insurgents, even after they suffered setbacks in some communities that year, had often re-established control over many of these communities during 2005. In late 2006, American and Iraqi forces in some communities began actively contesting for control. Importantly, these periods of control did not occur concurrently. For example, the so-called 'surge' of American troops did not take place simultaneously with respect to all the communities in this study. Indeed, it was common that decreasing levels of control exercised by insurgents in one community caused them to re-focus and move their efforts at gaining or maintaining control in other communities. For example, as communities in Anbar province shifted towards incumbent control it often caused insurgents to re-double efforts in some communities within Diyala province.

The three levels of control in this study are somewhat modified versions of those first used by Kalyvas (2006). In particular, Kalyvas (2006) characterized five levels of control that included 'complete insurgent control' and 'complete incumbent control.' Our judgement was that those scope conditions, during the period we examined, were not met. Likewise, Kalyvas (2006) characterized a zone of 'equilibrium' – places where insurgents and incumbents exercised roughly equal levels of control – which we found not to be evident in the communities that we investigated. Ultimately, we felt confident in classifying the three general conditions of control as follows:

Actively Contested Control includes periods during campaigns by incumbents and insurgents that were designed to actively contest for control of territory. The most prolonged of these episodes was during 'the surge' of American troops in 2007–2008. This also included conditions common in some communities in 2004 when incumbent forces routinely 'passed

through' and patrolled the perimeters of towns and cities – the use of roadblocks and checkpoints was common – but usually these forces did not reside in these communities even as insurgents began acting to increase their level of control within these localities (see e.g. Spinner 2004).

Predominately Insurgent Control were periods when insurgent control over territory was largely secure but also incomplete. Generally, insurgent forces could operate openly in most areas of a community with only sporadic challenges by American and Iraqi forces. Sometimes, incumbent forces might visit the community for brief periods of time, but always left the community quickly. Generally, when they 'passed through' these communities there were reports that they were actively confronted by insurgents who appeared to be operating from places where they had sanctuary (e.g. the rooftops of buildings). This ability to routinely attack government workers and military personnel as they 'passed through' a community with relative impunity would be indicative of this level of control.

Predominately Incumbent Control were periods when American and Iraqi forces maintained secure but incomplete control of a region. In this case, it was incumbents who could mostly operate openly and had greater control of a region and insurgents who might make sporadic visits, but who would always be actively confronted by the incumbent forces. During this period, incumbent forces often resided within or near these communities.[1]

Generally, the quality and quantity of reporting for larger communities central to the ongoing conflict (e.g. Fallujah, Ramadi, etc.) allowed us to assign, with greater confidence, the periods of control for these communities. In this respect, we are most confident concerning the reliability of the media information used to assign levels of control for the larger communities. Importantly, this is also where most of the civilian fatalities and injuries occurred. Unsurprisingly assigning levels of control to the smaller communities was often difficult due to the fact that there were fewer news reports covering these regions and it was harder to reconcile sometimes conflicting accounts. Further, assigning levels of insurgent control was often more difficult than assigning levels of incumbent control. In this respect, even during the period when prominent American politicians were obfuscating concerning the 'success' of American military operations, it was still readily apparent from news reports 'on the ground' when American and Iraqi forces began losing control of a region.

Practically, the 'lumping and sorting' methods used to create these periods of control were not uniform, mostly because reports of control sometimes varied dramatically even when reporting on the same communities. Clearly, if it were possible, characterizing control of territory along a more finely calibrated continuum (e.g. a hundred point scale for example) that could account for small changes (perhaps those occurring from neighbourhood to neighbourhood) would better reflect the reality of control 'on the ground.' Practically, our cut

points concerning control are necessarily 'fuzzy' (see Zadeh 1997) as associated with the information we had available. For example, increasing control in some communities was sometimes characterized as taking place 'bit by bit' (see Partlow 2007, A17) – we would have characterized this as a period of contested control – but there were clearly different gradations 'within' the control categories we created. For example, it was evident that nearly all the communities in this study were more 'thoroughly' controlled by incumbents over time. In effect, incumbent control was 'greater' for most communities in 2009 as compared to 2008.

One final difficulty with establishing conditions of control is the likelihood that sometimes, even for people who were observing and living with these conditions 'first hand,' it was difficult for them to specify exactly when a community 'shifted' in terms of the levels of control. Notably, though, there were also cases when the transitions in control were readily and immediately apparent to just about all observers on the ground. In these cases, it was often reported that insurgents quickly abandoned – usually after a period of contested control – strategic areas of a community in a largely coordinated manner. Indeed, in these cases the shift from *contested control* to control by one or another faction appeared to happen very quickly. Also, during the period of 'the surge' it was easier to specify when territory was actively contested and later came under mostly incumbent control. This was largely because the United States and Iraqi military forces during this period moved in largely coordinated and transparent manners (see Raghavan 2008:A10 for an example).

With all the previous in mind we still consider the designation of conditions of control as necessarily 'fuzzy,' particularly in that the experiences of communities 'within' each category, while generally comparable, were also varied. Practically, if there is statistical significance associated with a 'fuzzy' category of control and the types of violence civilian's experience then it is likely an indication that a more finely calibrated 'control' variable would also be statistically significant.

Dependent variable: types of violence killing and injuring civilians

This study categorized two types of violence: *indiscriminate violence* and *selective violence. Indiscriminate violence* includes all bombing (explosive violence): suicide bombing, truck bombing, roadside bombing, mortar bombs, improvised explosive devices (IEDs) and other land bombings. *Selective Violence* includes shooting deaths, assassinations, beheadings, stabbings and other more personal forms of assault. Creating these categories made it possible to conduct statistical means tests concerning whether these two broad categories of violence changed as related to *control of territory*. To offset the loss of detail that resulted, frequency tables (Tables 1 and 5) concerning the rates and

Table 1. Civilian fatalities resulting from non-government attacks in co-ethnic communities within Anbar, Babil and Diyala provinces (2004–2009).

	Civilian fatalities (maximum reported by IBC)				
	Total of civilians killed	Percentage of civilians killed	Number of attacks	Percentage of attacks	Average killed per attack
Weapon					
Missile/rocket	29.00	0.4%	11	0.5%	2.64
Grenade	47.00	0.6%	12	0.5%	3.92
Sniper fire	31.00	0.4%	13	0.6%	2.38
Heavy fire	105.00	1.3%	18	0.8%	5.83
Unknown	218.00	2.8%	71	3.1%	2.53
Suicide bomb	695.00	8.9%	74	3.3%	9.39
Drive by shooting	135.00	1.7%	77	3.4%	1.75
Explosive device	224.00	2.9%	80	3.5%	2.80
Mortar bombs	202.00	2.6%	84	3.7%	2.40
Suicide vehicle bomb	589.00	7.6%	88	3.9%	6.69
Vehicle bomb	559.00	7.2%	122	5.4%	4.58
Land bombs (mostly roadside)	603.00	7.7%	294	12.9%	2.05
Executed (tortured/ beheaded/found shot/ found tortured)	2564.00	32.9%	493	19.5%	4.4*
Gunfire **	1797.00	23.0%	829	36.5%	2.17
Total	7798.00	100.0%	2271	100.0%	3.43

Note: Based on the maximum reported dead in the IBC database. Fatality data collected during conflicts are not authoritative and the frequencies should be considered estimates reported here for comparative purposes. During this period, there were also 167 civilians killed in 66 cases of cross-fire which were coded as acts of both insurgent and incumbent violence.
*Civilians found executed in mass gravesites were not included in this calculation.
** It is likely that some of these attacks are also executions as many gunfire fatalities were less detailed than information found in the execution category.

severity of the specific violent acts are presented that detail the variation within these categories. For example, there was a wide disparity in the severity of different types of bombing attacks that killed civilians with acts of suicide bombing being the most destructive. By way of contrast, roadside bombings were more common, but not nearly as lethal. When there was a variation in the number of fatalities reported within the IBC data the *maximum dead* reported was used in the analysis.

The categorization of both *indiscriminate violence* and *selective violence* is somewhat different than that used in other studies. For example, these distinctions have sometimes been used to characterize the degree to which a group specifically knows the people targeted for violence (see Kalyvas 2006). In these cases, selective violence would be characterized as when a person is specifically targeted for being in opposition to a group. Indiscriminate violence would be when a person's support or opposition is not definitively known. In some respects, the manner with which selective and indiscriminate violence are sorted in this study probably still captures much of the previous distinction. For example, it is likely that civilians who suffer from more intimate forms of violence – those who are executed and tortured for example – are more likely being

targeted because it is assumed they are working against a group that controls territory. In effect, it does not make much sense to torture people randomly (or indiscriminately) if they might be potential supporters, although it is impossible to rule out the possibility that this may have occurred in Iraq. Related is that in Iraq there have sometimes been reports that 'bombings' were employed in what might be characterized as 'selective' targeting. For example, there have sometimes been examples of individuals – usually prominent politicians or religious figures – being specifically targeted with bombs as a form of political assassination. Within the context of all violence reported during the Iraq conflict, these are rare occurrences. Still, as it relates to the characterization of violence used in this study, the motivation to use 'bombing' against a specific individual should still decrease in areas where a group has control. In this respect we assume a group – in areas where they have control – would be more likely to use a selective form of violence (i.e. execution by gunshot) as opposed to indiscriminate bombing (i.e. execution by suicide bomb) because the previous uses less resources and also limits the possibility that potential supporters would be harmed. In short, we assume that when a group controls territory there are far fewer reasons to essentially 'bomb themselves.'

Categorizing civilians

Characterizing who is a civilian and combatant in civil war is difficult because the nature of these conflicts can blur these distinctions. For example, the IBC considers the Iraqi police, when not engaged in military operations, as civilians. Other databases and studies of civil war do not consider the police civilians because they can be considered an extension of national authority. We assumed that the readership of this journal would want the most comprehensive picture of fatality trends in Iraq so we included the police as civilians in this study. Importantly, the police were, by far, the most targeted group. In some respects, the targeting of police – if they are closely associated with government authority by insurgents – does further complicate our categorization of both selective and indiscriminate violence in terms of 'motivations' to use violence against certain groups. Being a police officer in uniform would help insurgents solve 'classification' problems associated with support and it could be argued that any form violence against the police – whether they are bombed or assassinated for example – is a form of 'selective violence' because they are being targeted due to their association with the government. As stated previously, we still assume that the motivation to use selective violence as classified in this study (e.g. execution, gunfire, etc.) against the police (like other civilians) would increase in areas where insurgents are gaining control because it requires fewer resources and also limits collateral damage to possible civilian supporters.

Propositions

We believe that the motivation to hold and control territory will cause insurgents/non-governmental actors to use different forms of violence that kills and injures civilians as it relates to who controls territory. These patterns are outlined in the hypotheses below:

H1: When a community is under mostly insurgent control then insurgent/non-governmental groups will more often use acts of selective violence as compared to indiscriminate violence.

H2: When a community is mostly under incumbent control then insurgent/non-governmental groups will more often use acts of indiscriminate violence as compared to selective violence.

   We also assume that different conflict dynamics in each zone will change the lethality of the different types of violence that insurgent/nongovernment groups use. These trends are outlined below.

H3: When an area is being contested, the acts of insurgent selective and indiscriminate violence will become more deadly and cause more injuries.

H4: The use of indiscriminate violence will be positively associated with a greater number of fatalities and injuries per act of violence.

Measures

The statistical program SPSS (Statistical Package for Social Sciences) was used to conduct an analysis of variance (ANOVA) to compare the types of violence that killed civilians during different conditions of control. A Tukey *post hoc* test determined whether the violence deployed during each condition of control was significantly different as compared to the other conditions of control. Categorical data presented in cross-tabulations calculated the percentages and average number of people killed and injured by selective and indiscriminate violence during conditions of control. In a few cases, a chi-square test was applied to the previous. This is not a powerful statistical test as it relates to determining causality, but it does indicate if the variation in observed categories – in this case the use of selective and indiscriminate violence against civilians and the fatalities and injuries that occurred during these attacks – differs significantly when used during different conditions of control.

Results

General patterns of civilian death in co-ethnic communities

The classification of attacks into selective and indiscriminate violence does obscure much of the detail concerning the specific manner with which civilians were targeted. As such, Table 1 provides frequencies for different attacks and the average number of civilians killed by this violence throughout the period studied. Some of these types of attacks (e.g. torture, execution, etc.) are aggregated from descriptions used by the IBC.

Overall, in the provinces studied, there was a steady increase in insurgent violence that killed civilians from 2004 through 2006. Violence was also high in 2007 – during periods that often coincided with the 'surge' of American troops – but dropped significantly in 2008 as regions began experiencing increasing levels of control by incumbent forces. Also, as incumbent control increased in 2008 and 2009, the overall rate of attacks against civilians diminished. In many communities, as this occurred the number of fatalities associated with indiscriminate violence became proportionally greater than that associated with selective violence. Figure 1 indicates these patterns at the province level.

In two of the provinces there were broadly comparable shifts in the overall patterns of violence that appear to be associated with shifts in the levels of control. In this respect, during the periods when much of Anbar and Diyala Provinces were under insurgent control, more selective violence was
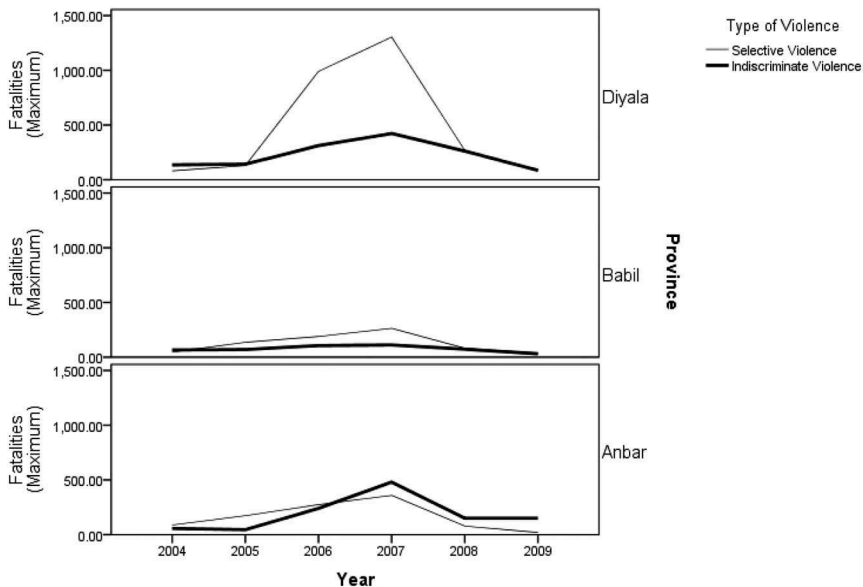

Figure 1. Fatality rates associated with insurgent/non-government selective and indiscriminate violence in Anbar, Babil and Diyala provinces.

employed by insurgent/non-governmental actors. As these areas shifted to government/incumbent control in 2007 and 2008, respectively, there was a corresponding shift in the greater use (in terms of percentage of attacks) of indiscriminate violence. This pattern is indicated for each region in Figure 2. Notably, these trends were not as evident in Babil Province. Importantly, the experience of individual communities within these provinces was not uniform – they experienced shifts in the levels of violence and control at different periods (and within the years represented below) and these experiences are tested in the ANOVA and summary tables represented in Tables 2–4 below. Still, the overall trends represented in Figure 2 generally support H1 and H2.
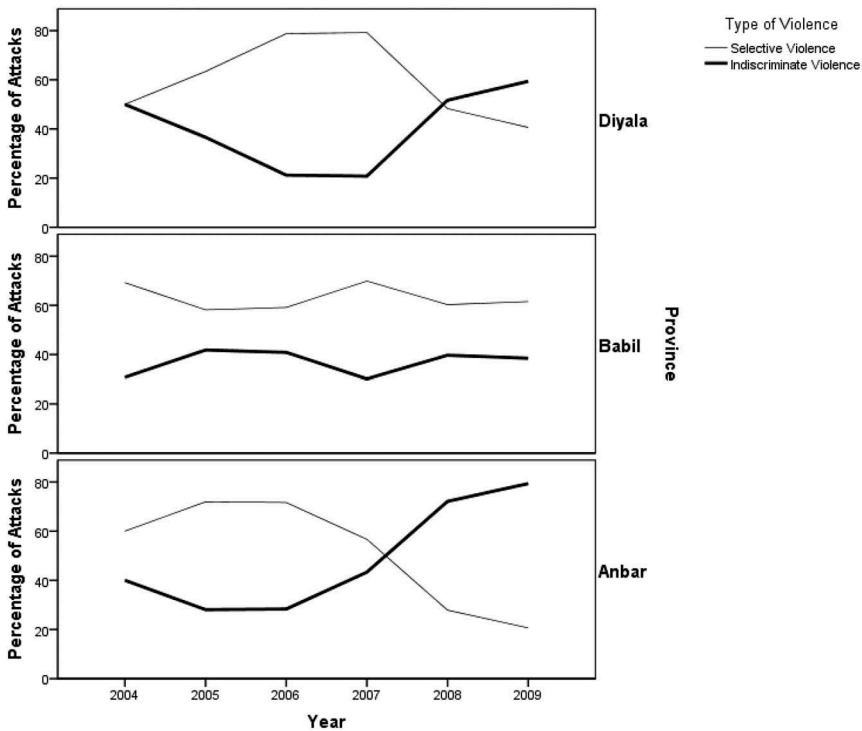

Figure 2. Percentage of selective and indiscriminate attacks by insurgent/nongovernment actors in Anbar, Babil and Diyala provinces.

Patterns of civilian fatalities as associated with control of territory

Overall, whether a community was being contested, experiencing insurgent control or experiencing incumbent control was associated with the types of violence that civilians experienced. Table 2 is a cross-tabulation that indicates how the use of selective and indiscriminate violence varied during different

Table 2. Types of non-incumbent violence and civilian fatalities in different zones of control.

	Incumbent control			Insurgent control			Actively contested			Total		
	Mean dead per/attack	Number of attacks (%)	Number killed (%)	Mean dead per/attack	Number of attacks (%)	Number killed (%)	Mean dead per/attack	Number of attacks (%)	Number killed (%)	Mean dead per/attack	Number of attacks (%)	Number killed (%)
Selective violence	3.68	136 (38.6%)	500 (42.5%)	3.05	853 (74%)	2598 (72.5%)	3.34	450 (64.7%)	1504 (54.1%)	3.20	1439 (65.4%)	4602 (61%)
Indiscriminate violence	3.13	216 (61.4%)	676 (57.5%)	3.29	300 (26%)	987 (27.5%)	5.21	245 (35.3%)	1277 (45.9%)	3.86	761 (34.6%)	2940 (39%)
Total	3.34	352 (100%)	1176 (100%)	3.11	1153 (100%)	3585 (100%)	4.00	695 (100%)	2781 (100%)	3.43	2200 (100%)	7542 (100%)

Table 3. ANOVA comparing selective and indiscriminate acts of non-incumbent violence in different zones of control.

	Sum of squares	Df	Mean square	F	Sig.
Between groups	33.733	2	16.866	79.856	.000
Within groups	464.030	2197	.211		
Total	497.763	2199			

Table 4. Tukey HSD *post hoc* comparing types of non-incumbent violence in different zones of control.

					95% Confidence interval	
(I) *Zone of control*	(J) *Zone of control*	Mean difference (I–J)	Std. error	Sig.	Lower bound	Upper bound
Incumbent Control	Insurgent Control	.35345*	.02799	.000	.2878	.4191
	Actively Contested	.26112*	.03007	.000	.1906	.3316
Insurgent Control	Incumbent Control	−.35345*	.02799	.000	−.4191	−.2878
	Actively Contested	−.09233*	.02207	.000	−.1441	−.0406
Actively Contested	Incumbent Control	−.26112*	.03007	.000	−.3316	−.1906
	Insurgent Control	.09233*	.02207	.000	.0406	.1441

*The mean difference is significant at the 0.01 level.

periods of control. Table 3 provides an ANOVA measuring the association between control and the types of violence employed. The corresponding Tukey *post hoc* test shown in Table 4 then compares the types of violence used in each zone to one another. In each case, control over territory has a significant impact on the types of violence insurgent/non-government actors used when killing civilians. These trends support research hypotheses H1 and H2.

When indiscriminate violence was employed in actively contested areas, the average number of people killed per attack increased significantly ($P > .01$) as compared to when it was used in insurgent and incumbent controlled areas. By way of contrast, selective violence was used more often during periods of insurgent control, but was more severe in terms of civilians killed per attack when deployed in incumbent controlled areas ($P > .01$). Probably, the ability and desire to routinely 'round up' supposed dissenters and then target them selectively with forms of assassination/execution was possible during periods of insurgent control, but not as much so during others. It is notable that the severity for incidences of selective violence (the average number killed per act) was not dramatically different across the different zones of control, although still significant ($P > .05$). In this case, selective attacks were less often used in incumbent zones, but correspondingly more severe in terms of average number killed per attack, during periods of incumbent control. This finding does not

support H3, which predicted selective violence would be more severe during contested periods. Perhaps this indicates that these attacks require greater planning and resources – directed towards very specific targets – when insurgents choose to use selective violence in areas they do not control. Generally, the patterns of violence directed towards the police were broadly similar when compared to other civilians although they were less likely to be executed. They were, by far, the most targeted group with the IBC reporting that 28.3% ($n = 622$) of attacks were directed towards police.

Patterns of civilian injuries as associated with control of territory

One important fact associated with selective violence and indiscriminate violence is that the corresponding rates of injuries to civilians during these assaults vary dramatically. One 'shorthand' finding is that selective acts of violence (when used by non-government actors) most often kills more people than it injures. Conversely, indiscriminate violence usually injures more people than killed. For example, execution was characterized as a form of selective violence in this study. Probably, the tactic of execution is most often employed by insurgent groups against specific civilian targets. In this study it was hypothesized that this tactic would increase when insurgent factions were largely in control of territory and could more easily 'sort' possible supporters from possible opponents. Notably, forms of execution ($N = 346$) were quite common when compared to other forms of assault. Not surprising, the specificity associated with most forms of execution resulted in few civilian injuries. With respect to the events analysed in this paper, there were 346 incidences of execution (representing over 22% of all attacks) that resulted in only 8 corresponding injuries to civilians (representing less than 1% of injuries). Similarly, drive-by shootings ($N = 48$) and all other shooting attacks ($N = 496$) caused comparatively few civilian fatalities per attack with an average of .92 people injured during drive by shootings and an average 1.52 injured during shooting attacks. Comparatively, the highest amounts of civilian injuries all corresponded with acts of indiscriminate violence. Suicide bombings ($N = 62$) had the highest corresponding injury rate with an average of 19.06 injured per attack. This was followed by suicide vehicle bombings ($N = 73$) in which an average of 15.6 were injured per attack, and attacks with vehicle bombs ($N = 110$) that resulted in an average of 11.56 injuries. These summary findings are represented in Table 5 below. In fact, some indiscriminate tactics that were among the least lethal in terms of the average number of people killed per attack still caused considerable civilian injuries. For example, land bombs (mostly roadside) had comparatively low rates of civilian death per attack (2.05 killed per attack) (see Table 1) but this tactic caused disproportionately high numbers of injuries (just over 4 injured per attack, see Table 5). Importantly, the mean number of people killed and injured in these instances is not authoritative; rather it is an

Table 5. Injuries associated with different types of violent attack in Anbar, Diyala and Babil provinces.

		Civilian injuries (maximum reported by IBC)				
		Mean injured per attack	Number of attacks	Percentage of attacks	Percentage of injuries	Total injured
Weapon used in attack	Executed	.02	346	22.3%	0.1%	8
	Drive by shooting	.94	48	3.1%	0.7%	38
	Gunfire	1.52	496	31.9%	11.7%	630
	Poisoned	48.00	1	0.1%	0.7%	48
	Heavy fire	7.62	13	0.8%	1.5%	100
	Grenade	3.11	9	0.6%	0.4%	30
	Explosive device	5.95	62	4.0%	5.7%	378
	Unknown	1.19	37	2.4%	0.7%	30
	Missile/rocket	6.63	8	0.5%	0.8%	56
	Mortar bombs	7.17	58	3.7%	6.4%	378
	Land bomb (mostly roadside)	4.22	231	14.9%	15.1%	945
	Vehicle bomb	11.76	110	7.1%	20.0%	1320
	Suicide vehicle bomb	15.60	73	4.7%	17.6%	1056
	Suicide bomb	19.06	62	4.0%	18.3%	1180
	Total	4.15	1554	100.0%	100.0%	10,555

Based on the maximum injuries reported in the IBC database. The injury data are not complete and the frequencies should be considered an estimate and are reported here as estimates for comparative purposes.

approximation useful for estimating lethality. A summary table of these findings is represented below.

Overall, indiscriminate acts of violence accounted for a disproportionately high number of the civilian injuries in the regions studied. At the same time, there is clear evidence that when insurgent groups acted to control territory, they also decided to employ more selective forms of violence that generally have less likelihood of injuring civilians as compared to indiscriminate violence. In effect, when insurgent groups had the capacity to kill people selectively whom they regarded as threats, there is evidence that they did so. As such, the corresponding number of civilian fatalities killed by this type of violence was highest during periods of insurgent control. At the same time, indiscriminate acts of violence – even when they were proportionally less common than selective acts of violence during these same periods – were always the most destructive acts as it relates to civilian injuries. In this respect, even during periods when acts of selective violence caused the greatest number of civilian fatalities – see Diyala Province in 2006 and 2007 in Figure 1 for an aggregated example – it was indiscriminate acts of violence that accounted for a greater number of civilian injuries (see Figure 3).

The overall result of these trends is that when insurgents controlled territory, fatality rates were high because both types of violence directed towards civilians were also high, but the incidence of injury (the mean injured) per attack declined (3.2 injured per attack) because these groups
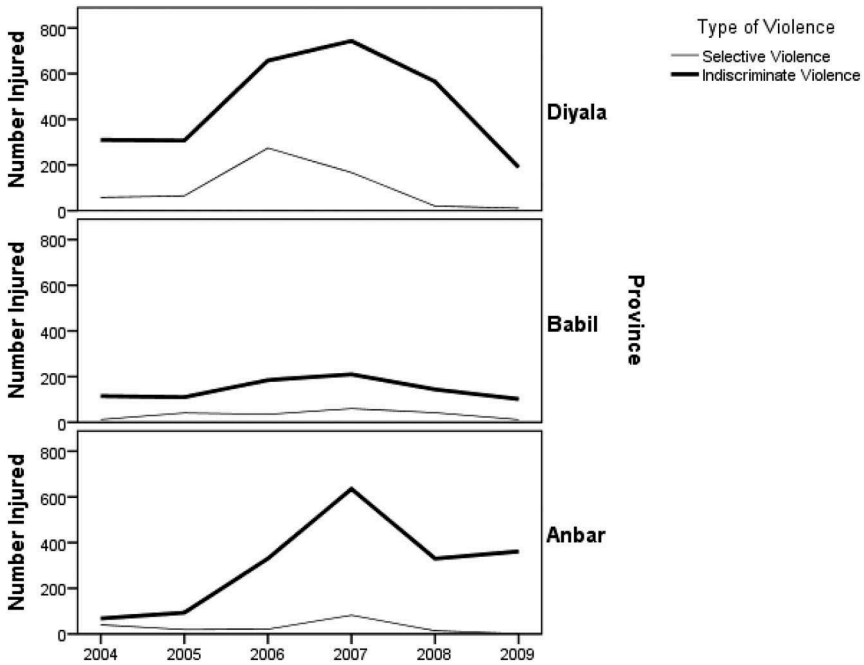
Figure 3. Injuries resulting from selective and indiscriminate non-governmental violence in Diyala, Babil and Anbar province.

were more often using selective violence which is associated with fewer civilian fatalities. In areas that were controlled by government forces the overall number of attacks declined, but incidence of injury per attack (the mean injured) rose considerably (to 5.6 injured per attack). These differences – both the change in types of violence and the difference in the overall number killed per violent act – are significant ($P > .01$). Table 6 represents these trends by presenting the total number of injuries and the percentage of injuries caused by selective and indiscriminate violence in the different zones of control.

As indicated previously, as territory in specific communities shifted towards incumbent control it did increase the likelihood that insurgents, when they chose to employ violence, used more indiscriminate bombings. Generally, the most common experience of the communities in this study was that, as they came under increasing government control, there was a corresponding decrease in acts of both selective and indiscriminate violence used by non-government actors, but the rate at which selective violence decreased was much more dramatic comparatively. Put another way, while insurgent/non-governmental groups attacked civilians less often when they did not control territory, when they did attack they more often used indiscriminate acts of violence. As a result, the overall civilian casualty rate associated with insurgent/

Table 6. Types of non-incumbent violence and civilian injuries in different zones of control.

	Incumbent control			Insurgent control			Actively contested			Total		
	Mean injured	Number attacks (%)	Number injuries (%)	Mean injured	Number attacks (%)	Number injuries (%)	Mean injured	Number attacks (%)	Number injuries (%)	Mean injured	Number attacks (%)	Number injuries (%)
Selective violence	.73	112 (38.1%)	82 (5.4%)	1.1	472 (66%)	523 (22.2%)	1.1	331 (63.9%)	369 (14.4%)	1.1	915 (59.9%)	974 (15.2%)
Indiscriminate violence	7.9	182 (61.9%)	1438 (94.6%)	7.5	243 (34%)	1831 (77.8%)	11.7	187 (36.1%)	2186 (85.6%)	8.9	612 (40.1%)	5455 (84.8%)
Total	5.6	284 (100%)	1520 (100%)	3.2	715 (100%)	2303 (100%)	4.9	518 (100%)	2555 (100%)	4.2	1527 (100%)	6429 (100%)

non-governmental violence declined dramatically as selective violence subsided, but the number of people injured per act of violence increased because these factions more often used indiscriminate tactics (see Table 6). For example, during the year 2009 all the communities studied were probably under the 'tightest' levels of control by government/incumbent forces and the fatalities and injuries associated with selective violence were dramatically reduced to the point where they were comparatively rare occurrences (see Figures 1 and 3). While fatalities and injuries associated with indiscriminate violence were reduced too, this decline – particularly as associated with injury – was not nearly as dramatic (see Figure 3). In this respect, injury and death associated with indiscriminate acts of violence were still widely evident within many of these communities in 2009, even as death and injury associated with selective violence became relatively scarce.

Sometimes, the trends outlined above were generally reflected in local reporting that took place within these communities in 2009. In this respect, it was reported that the routine killing and retribution most associated with selective forms of violence (e.g. assassination) had been largely eliminated as the government gained control of territory, but these same communities were still experiencing acts of indiscriminate violence that were causing considerable death and injury (see Arraf 2009). One practical lesson for medical personnel – at least as it relates to Iraq – is that the overall decline in violence associated with government control mostly served to reduce selective acts of violence that tended to produce the least amount of damage as associated with civilian injuries. While indiscriminate violence was lessened somewhat too, there were still a considerable number of civilians being injured by periodic bombing attacks, mostly because insurgent forces were more inclined to use this tactic in areas where they did not control territory.

Discussion and conclusion

While we are confident the general trends reported in this study are valid, caution is warranted because there are always difficulties in collecting fatality and injury data during a civil conflict. In this regard, while the IBC data should be regarded as comparably quite good, the limits to using media data in a study of civilian fatalities include the following: (1) media reports are not uniform in the information they provide, (2) media do not cover all regions equally, (3) there are differing degrees of information provided in cases covered by media, and (4) civil war degrades state infrastructure that makes routine reporting of fatalities more difficult. Also, during civil war much violence happens 'in secret' which can cause a lag in updating fatalities. Practically, fatality data collected during civil war are always incomplete. As such, the previous analysis should be read as representing general

trends associated with violent civilian death and injury and not an authoritative accounting of either in the region.

While this study indicated that variation in the types of assault that civilians experienced were associated with the level of control insurgents exercised over territory, it did not definitively establish the specific causal links associated with why insurgents/non-governmental actors vary their tactics as they gain and lose territory. Nonetheless, we believe the most likely explanation is that *control of territory* allows groups to more easily attempt to 'sort' potential supporters from dissenters, and that this is often a particularly violent period in civil war. Furthermore, while the sorting of violence into two categories made a statistical analysis possible, it did obscure much of the more nuanced nature of violence that civilians experienced. Also important is that this study only investigated patterns of co-ethnic violence in which the insurgent factions largely shared the same ethnicity and religion as the civilians being targeted. In areas where the community is mixed ethnic or an ethnic enclave, the patterns of violence vary dramatically (see Poulson 2017).

The primary goal of this study was to aggregate enough IBC data in order to capture how one important variable – *control of territory* – affected patterns of civilian death and injury during six years of the Iraq conflict. Generally, the patterns of violence outlined in this study conformed to trends that have been found in past studies of civil war. Particularly, the patterns of violence deployed were associated with the levels of control in a region. Probably, similar patterns will also be evident in future civil conflicts and these patterns may be ongoing in other regional conflicts, particularly the ongoing civil conflict in Syria. Still, this inquiry only investigated one social structural variable, and even if *control of territory* has generalizable effects that characterize actions in other civil wars, there are many other variables that impact the types and severity of violence directed towards civilians during these conflicts.

This study did not offer a detailed examination of the types of injuries that civilians suffered. It did find that indiscriminate attacks are more common under certain conditions, and that these attacks, not surprisingly, cause the greatest injury to civilians (see also Hicks et al. 2009). In this respect, this study only demonstrated that knowing the levels of control in a region might be broadly indicative of the types of trauma that medical personnel will encounter in these zones. Still, if *control of territory* has broadly generalizable affects, then understanding this dynamic might give providers of medical services some knowledge with which they can anticipate the broad shifts in the patterns of violence they will encounter as control of territory waxes and wanes. Of course, humanitarian agencies and medical personnel that provide medical assistance in conflict zones confront a myriad of problems when they act in these regions (see Pedersen 2002).

Often, simply getting access to these communities is a difficult endeavour. There are also other variables not explored in this study – typography, weaponry available, outside support, whether the violence is in urban or rural areas, etc., – that also affect the incidences, types and severity of violence directed towards civilians in civil war.

Overall, this study and others provide evidence that organizations acting in conflict regions might generally anticipate warring groups will pattern their use of violence towards civilians as related to the degree to which they control territory. When groups control territory, they will more often employ more selective forms of violence designed to sort supporters from those acting against them, and these tactics will cause greater amounts of death, but cause less severe injuries (per act of violence), during these periods of occupation. Conversely, as groups lose *control of territory* it increases the likelihood that more indiscriminate acts of violence, those which also cause the most injuries, will continue to be directed towards citizens in these same communities.

Note

1. The communities in this study – even when proximate to each other – often experienced different levels of control at different times. This makes it hard to represent the time periods associated with each level of control (for each location) in a succinct table. For those interested in the specific control dates for each community contact the corresponding author.

Notes on contributors

Stephen C. Poulson (PhD in Sociology, Virginia Tech) is a Professor of Sociology at James Madison University, USA. He specializes in the study of collective behavior, collective violence and social movements. He is currently investigating patterns of violence directed toward civilians in different regions of Iraq during the conflicts from 2003 to present.

Kelly Burke graduated from James Madison University, USA in 2016 with BS degrees in Sociology and Biology. She has worked as an EMT for a local rescue squad and has volunteered with Remote Area Medical (RAM) teams serving southwest Virginia, USA. She recently completed her first year of medical school at the Virginia Tech Carilion School of Medicine and Research Institute, USA.

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