The Dynamics of Violence in Vietnam: An Analysis of the Hamlet Evaluation System (HES)*

STATHIS N. KALYVAS & MATTHEW ADAM KOCHER

Department of Political Science, Yale University

The authors analyze a unique data source to study the determinants of violence against civilians in a civil war context. During the Vietnam War, the United States Department of Defense pioneered the use of quantitative analysis for operational purposes. The centerpiece of that effort was the Hamlet Evaluation System (HES), a monthly and quarterly rating of 'the status of pacification at the hamlet and village level throughout the Republic of Vietnam'. Consistent with existing theoretical claims, the authors find that homicidal violence against civilians was a function of the level of territorial control exercised by the rival sides: Vietnamese insurgents relied on selective violence primarily where they enjoyed predominant, but not full, control; South Vietnamese government and US forces exercised indiscriminate violence primarily in the most rebel-dominated areas. Violence was less common in the most contested areas. The absence of spatial overlap between insurgent selective and incumbent indiscriminate violence, as well as the relative absence of violence from contested areas, demonstrates both the fundamental divergence between irregular and conventional war and the need for cautious use of violent events as indicators of conflict.

Introduction

One of the most exciting recent developments in the field of civil wars studies is the explosion of 'micro-level' research, denoting an *empirical* move toward subnational research designs that rely on the analysis of finely disaggregated data; and a *theoretical* move toward the specification of microfoundations. The shift toward the micro level reflects a desire to improve the specification of causal mechanisms underlying statistical correlations and to address problems of

measurement and interpretation that cannot be easily resolved at the cross-national level (Kalyvas, 2008; Cramer, 2007; Cederman & Girardin, 2007; Humphreys, 2005). In particular, three areas have mobilized researchers.

The first investigates the logic of participation and recruitment: who joins, how, when, what type of organization – and likewise, who leaves and how? (Arjona & Kalyvas, 2008; Humphreys & Weinstein, 2008; Oyefusi, 2008; Blattman & Annan, 2007; Guichaoua, 2007; Kalyvas & Kocher, 2007b; Weinstein, 2007; Viterna, 2006; Wood, 2003). The unit of analysis in these studies is the individual, and data consist mainly of ex-combatants surveys.

The second area relates to the dynamics and location of conflict: where and how do

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rival sides clash, and what explains the type, intensity, and duration of these clashes? (Ziemke, 2008; Do & Iyer, 2007; Hegre & Raleigh, 2007; Bohara, Mitchell & Nepal, 2006; Buhaug & Rød, 2006; Murshed & Gates, 2005; Deininger, 2004; Restrepo, Spagat & Vargas, 2004; Trejo Osorio, 2004). The unit of analysis here is spatial, including regions, administrative districts, or geographic 'polygons'. Data are culled from a variety of sources, including newspapers and local NGOs, and the analysis often employs GIS (Geographic Information Systems) methods.

The third area of research is based on the conceptual disaggregation of violence and conflict. The focus is primarily on the patterns of homicidal violence, as distinct from the logic of conflict in general (Bundervoet, 2009; Hagelstein, 2008; Hultman, 2008; Kocher, Pepinsky & Kalyvas, 2008; Balcells, 2007; de la Calle Robles, 2007; Eck & Hultman, 2007; Weinstein, 2007; Humphreys & Weinstein, 2006; Kalyvas, 2006; Straus, 2006; Verwimp, 2006; Barron, Kaiser & Pradhan, 2004; de la Calle Robles & Sanchez Cuenca, 2004; Verwimp, 2003; Azam & Hoeffler, 2002). This research area has generated considerable diversity in units of analysis and specific foci. Some studies have analyzed spatial variation of violence while keeping conflict, actors, time, and type of violence constant. Others have focused on types of violence (direct vs. indirect; homicidal vs. non-homicidal; selective vs. indiscriminate; strategic vs. expressive; violence used to control vs. violence used to exterminate), types of perpetrators (incumbents vs. insurgents; insurgents across countries), types of victims (co-ethnics vs. non-co-ethnics), or types of conflict (irregular vs. conventional civil wars). The proliferation of questions is a natural reflection of the complexity of violence; at the same time, it also reflects the field's youth.

Our goal is twofold. First, we take advantage of unique, and up to now unequaled, data to investigate violence against civilians during the Vietnam War: the Hamlet Evaluation System (HES).[1] These data, collected by the US military, include measures of both selective and indiscriminate violence and levels of territorial control across all Vietnamese hamlets for a substantial temporal cross-section of the conflict. We are unaware of any other dataset that includes data so finely grained and covering so many units. Second, we use these data to conduct an out-of-sample test of a central claim in the literature on civil war violence. Specifically, we investigate whether the spatial distributions of selective violence by the Vietcong and of indiscriminate violence by the South Vietnamese and the US military, conform to the empirical predictions of Kalyvas's *Logic of Violence in Civil War* (2006). This is a rare opportunity to evaluate an existing theory on a different, yet fully comparable and more comprehensive, body of data.

Our analysis shows that selective violence by the Vietcong was much more common in hamlets that were predominantly, but not fully, controlled by them than it was in hamlets that were fully under Vietcong control, hamlets that were contested between the rival sides, or hamlets under predominant or full government control. We also find that government bombing and shelling most heavily affected hamlets that were under total Vietcong control. The two types of violence we analyze happened in different places; furthermore, they did not occur in the most contested territory, the type of place that most resembles the front line of

[1] We obtained electronic copies of the HES data held by the National Archives and Records Administration (NARA), along with photocopies of supporting documentation. The data were archived as zoned-decimal files. We converted them to ASCII with help from Fay Booker, Data Librarian at Social Science Research Computing in the University of Chicago. Our analyses were carried out with STATA 10 and ArcGIS 9.2.

a conventional war. The absence of spatial overlap between insurgent selective and incumbent indiscriminate violence, and the relative absence of violence from contested areas, both consistent with Kalyvas (2006), suggest a disconnect between front lines and violence and demonstrate the fundamental divergence of irregular and conventional war. They also call for a cautious use of violent events as indicators of conflict intensity (e.g. Dube & Vargas, 2008): a decline in armed clashes or insurgent violence is consistent both with insurgent success (since violence is much less likely in places under full insurgent control) and insurgent failure. Our findings show that a theoretical understanding and an empirical analysis of control, as well as disaggregated measures of violence, are essential for understanding the violence of civil wars.

We begin with a brief overview of the Vietnam War and its violence. Next, we discuss our theoretical priors, describe the data and the methods used, and provide the results of our analysis before concluding.

War and Violence in Vietnam

It is hard to characterize the Vietnam War in a simple way because of its duration and complexity: it was simultaneously a civil and an interstate war, as well as an irregular and a conventional war, involving a variety of actors over time (Young, 1991). Few, however, would disagree that the core of the conflict was an 'insurgency', also known as a 'guerrilla' or 'irregular war'.

Historically, the conflict is a composite of many successive wars: it began as a war of resistance, pitting mostly communist insurgents against the Japanese occupiers. Following the Japanese defeat, it mutated into an anticolonial war against the French (1946–54), going through various phases and ending with the partition of the country. The North was ruled by the Communist Party and the South turned toward the West,

first supported by the French and later the USA. Partition was followed by substantial migration in both directions: many southern communists went north and many northern anticommunist Catholics migrated to the South. However, the communist insurgent infrastructure of the South remained in place and survived a wave of repression.

In 1959–60, the communist remnants of the South, fortified with 'returnees' from the North, launched a new insurgency. They relied on the infrastructure of the 1946–54 period, mixed a socially redistributive with a nationalist message, recalled the memories of the anticolonial struggle, and castigated the governmental repression against real and suspected communist activists (Elliott, 2003; Race, 1972). In most respects, this was a textbook insurgency, though it was active not just in a remote periphery but in the heartland of South Vietnam. Mixing selective incentives (especially land reform) with selective violence against political opponents, the insurgents, who became known as the National Liberation Front – NLF, widely known as Vietcong – were able to sap the presence of the state (often referred to as GVN for Government of Vietnam) in much of the country, undermining its ability to control its territory.

By 1965, the GVN was on the verge of collapse. It was saved by the US decision to intervene massively. The conflict then mutated into a combination of intrastate and interstate war, fought irregularly (by the Vietcong) and conventionally (by North Vietnamese troops) against GVN regular and paramilitary forces, and the US military. The United States implemented a massive counterinsurgency campaign to wrest control of the countryside from the insurgents (Ellsberg, 2003; Sheehan, 1989). In Huntington's formulation (1968: 650): 'The war in Vietnam is a war for the control of the population'. This campaign was quite successful, judging from both qualitative (Elliott, 2003; Trullinger, 1994; Race,

1972) and quantitative studies (Thayer, 1985). Following its politically successful but militarily disastrous 1968 Tet Offensive, the insurgency was considerably weakened. However, the high cost of the war led to gradual US disengagement, followed by a North Vietnamese conventional invasion, which caused the GVN's defeat and the country's reunification under communist rule.

The war caused human suffering on an immense scale. The exact number of South Vietnamese civilian fatalities is unknown but estimates range from 500,000 to 2,000,000. Millions more were wounded or displaced. Violence took many forms, from bombing to assassination (Sleezer, 1993). Violence was both 'indiscriminate' and 'selective' – indiscriminate when the targeting was not individualized, as during aerial or artillery bombardment, and selective, when victims were singled out individually.

A stylized story of violence in the Vietnam War goes as follows. First, GVN outposts were neutralized by insurgents who proceeded to execute collaborators and sympathizers of the government, thereby consolidating their control. Because the Vietcong developed a strong local organization, they were able to collect good intelligence which led to a discriminating use of violence (Pike, 1970; Hosmer, 1970). Consider this Vietcong statement, made at a September 1960 village meeting in Dinh Tuong province: 'The most important element of the uprising is to kill the cruel and wicked tyrants, and only if the right target is eliminated will the motivation of the uprising gain results. For this reason, in the matter of killing tyrants there must be careful research and evaluation. When annihilating there must be a list, and dossiers with the crime clearly spelled out. Only if this is done will the masses and the other cruel and wicked tyrants see why that contemptible person is being punished, and only then will the gang of spies shrink back so that the masses can rise up strongly' (quoted in Elliott, 2003: 266).

Vietcong violence reflected a logic of eliminating opponents and intimidating neutrals with considerable local input – in other words, it was 'joint' (Kalyvas, 2006). A Vietcong cadre, reflecting on 30 killings that had taken place in his village, described a process whereby 'All death sentences were proposed by the village. Ultimate decisions about them were made by the district, but the district has never rejected any such proposals made by the village, because the district authorities did not know anything. They had to rely on the judgment of the village. If the village wanted the victims to die they would die, or if it wanted them to live they would live' (quoted in Elliott, 2003: 338–339).

While selective, Vietcong violence was also massive. Between 1957 and 1972, according to one estimate, the Vietcong assassinated 36,725 and abducted 58,499 persons (Lewy, 1978: 454). According to Hosmer (1970: 44), who provides data covering 1966–69, the Vietcong assassinated 1,153 government officials (and abducted another 664), 1,863 government employees (abducting another 381), and 15,015 civilians (abducting 24,862). Hosmer (1970: 45) adds that these figures 'significantly understate the total number'.

As villages came under insurgent control they became dangerous for government personnel, who reduced their visits and overall presence. Intelligence stopped coming, causing larger GVN units to be ineffective in targeting their enemies. According to Elliott (2003: 424), 'the major factor in the initial decline of GVN intelligence on the situation in the countryside was a change in the security of the intelligence agents: the GVN lost the ability to protect them. Obviously the risk calculation changed. Given the seriousness of likely reprisals for such activity, those who were in it for the money must have found that it wasn't worth risking their lives. Those who bore grudges against the revolution found that the costs of exacting revenge had escalated dramatically'. The absence

of information caused a switch toward indiscriminate violence as the GVN and its US allies relied on aerial bombardment and ground shelling of suspected Vietcong hamlets (Sheehan, 1989) – but with counterproductive results (Kocher, Pepinsky & Kalyvas, 2008).

The realization that large-scale combat and attrition tactics were failing led to an overhaul of counterinsurgency strategy. First, the United States underwrote a massive augmentation of the South Vietnamese military, with increased emphasis on paramilitary forces (Thayer, 1985: 155–172). Second, the United States adopted a new tactical posture, emphasizing small-unit patrols and more direct occupation of the countryside (Sorley, 1999: 17–30). The establishment of a large and permanent rural presence gradually shifted control to the government side.

The stylized story of violence in the Vietnam War resonates with some of the claims put forward by Kalyvas (2006). Contrary to a widespread perception that irregular wars are mere contests for 'hearts and minds', they can be seen primarily as a competition for territorial control, where violence is used to challenge and to create order. To be sure, both incumbent and insurgent actors must generate popular 'collaboration' and deter 'defection'. However, the extent of collaboration they can achieve hinges largely on the degree of control they are able to exercise. Armed actors can protect civilians who live in territory they control, giving civilians a strong incentive to collaborate with them, irrespective of their true or initial preferences. Given that the resources necessary for the consolidation of control are usually lacking, rival actors resort to selective violence.

This argument implies a process in three steps. First, a locality is 'conquered' through military action, but popular collaboration may not fully shift. Second, selective violence is used against 'defectors' – supporters of the rival faction – which requires

local information gained primarily through denunciations. Third, this violence leads to the consolidation of control, as the population aligns with the new rulers.

In this scenario, selective violence is largely a function of control. Political actors do not want to exercise it where they already enjoy high levels of control and cannot exercise it where they have no control. Instead, they want to use violence where their control is incomplete. Individuals denounce their neighbors only where it is safe: areas of full control (where armed actors do not need their information) and areas of dominant control (where armed actors *do* need their information). They will not denounce in contested areas, because they face a high risk of retaliation (their potential victims' families can counter-denounce them to the rival actor).

This theory predicts where selective violence is most likely to emerge: areas of predominant control by one or the other actor. Outside this space, such violence is much less likely: armed actors may demand information but individuals will not supply it (or veto its application), or individuals may supply information but political actors will prefer not to act on it. This theory also predicts who the perpetrator will be: the actor exercising predominant control. Lastly, it implies that indiscriminate violence is most likely in areas of very low levels of control, where no information is available about individual behavior.

Kalyvas (2006) develops an index of control with five zones ranging from full incumbent control (Zone 1) to full insurgent control (Zone 5); the most contested zone is 3, where control is 'shared', while Zones 2 and 4 include areas of incumbent and insurgent hegemony, rather than full dominance. The main predictions are that incumbent selective violence is most likely in Zone 2 and indiscriminate violence in Zone 5, while insurgent selective violence is most likely in Zone 4 and indiscriminate violence in Zone 1. Remarkably, violence in the most contested

Zone 3 is less likely. Kalyvas tests his theoretical claims using historical evidence from several conflicts and systematically using data from a regional study of the Greek Civil War. How do these predictions hold for a different conflict? The main obstacles to establishing external validity are the lack of data on control and the absence of disaggregated data on selective and indiscriminate violence. Fortunately, the HES includes exactly the right data for conducting an out-of-sample test.

Data: HES

Insurgencies produce complex patterns that are exceptionally difficult to characterize with narrative methods. In Thayer's (1985: 4) words: 'Vietnam was a highly fragmented struggle … with few large battles … . Instead, thousands of small actions took place every day on the battlefields of 44 different provinces, 260 districts, and 11,000 hamlets … . The war had no fronts. This is why the war in Vietnam was so difficult to grasp'. To overcome the operational difficulties of fighting a 'war without fronts', the US Department of Defense developed several data collection and analysis programs intended to make the battlefield more legible. One of the most important of these programs was the HES. Developed by analysts from the Office of the Assistant Secretary of Defense for Program Analysis and Evaluation, and operated by Military Assistance Command – Vietnam (MACV), the HES was designed to provide US and GVN commanders with an estimate of Vietcong and allied control, 'pacification' in the jargon of the time, over the Vietnamese population at the level of its smallest population units, the village (a spatially delimited unit, much like a town in the United States) and the hamlet (a cluster of dwellings). The HES emerged as a result of the length of the conflict and the US investment in it. Initial attempts to measure population security began as early as 1963, and the HES developed through a gradual process of learning (Thayer, 1985: 137).

MACV compiled a gazetteer of hamlets, assigned them unique identifiers, and pinpointed their geographical coordinates. With the assistance of Vietnamese officials, US District Senior Advisors (DSAs) completed questionnaires on each village and hamlet in their jurisdictions, evaluating them on 140 monthly and quarterly indicators.[2] HES indicators covered many topics, ranging from the presence and activity of security forces, police, and civil administration (of both sides), through the education, ethnic and religious composition, and economic condition of the local population.

Our key independent variable is local control, which the HES attempted to capture in a sophisticated way. Questionnaires were processed in Saigon and the resultant variables resolved into 'level 1 models', ordinal indices that rated hamlets on a scale from A (best from the government viewpoint) to E (worst from the government viewpoint). For example, one question, coded VQC3, asked about the likely reaction time of 'friendly' forces if called upon by local authorities. Coded at the village level and updated on a quarterly basis, this question was used in the construction of the level 1 'Friendly Military Presence' model, on the theory that hamlets in villages where the authorities could not expect rapid reinforcement were somewhat less likely to be controlled by those authorities.[3] Level 1 models were combined into level 2 and higher level models using decision tables. For example, the Level 2 'Enemy Military' model (Model 2A) was derived from the 'Enemy Military Presence' (1A) and 'Enemy Military Activity' (1B) models as follows: if both the level 1 models were coded 'A', the level 2 model was coded 'A' as well; if the level 1 models were coded 'A'

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[2] For more detailed information on the HES, see Kocher (2004). The data are fully described in CORDS/RAD (1971).

[3] See the Appendix for a detailed description of how the HES indicators were amalgamated into level 1 indexes via sequential applications of Bayes Rule.

and 'B', then the level 2 model was coded 'B', and so forth.[4]

For this study, we use two indexes to measure local control: the HES Security Macromodel (Model 3A) and the Enemy Political Sub-Model (Model 2C). Model 3A is used in our analysis of insurgent selective violence, while Model 2C is used to predict incumbent indiscriminate violence. Operationally, we have found the two indexes to be interchangeable. However, Model 3A includes a question about bombing and shelling, while insurgent selective violence is a component of Model 2C. The five categories of Model 3A correspond roughly to Kalyvas's five zones of control; that both independently arrived at five categories is significant and helpful.[5] Indeed, the logic that underlies these two indexes is very similar (Thayer, 1985: 137–153). To validate their correspondence, we ran the same analyses using narrower, lower-level indexes ('Level 1'), including the Friendly and Enemy Military Presence Models, the Enemy Political Activity Model, and the Administration Model. Though the number of hamlets in each category varies somewhat across these models, the patterns of insurgent selective violence are consistent across them, reinforcing our confidence in the correspondence between the two indexes.

Our key dependent variables, insurgent selective violence and incumbent indiscriminate violence, are also derived primarily from the HES. For the latter, we use HES question HMB5, which asks if incidents of 'selective terrorism' occurred in the hamlet during the current month. Incumbent indiscriminate violence is measured with question VMC2, which asks if US or South Vietnamese shelling or airstrikes occurred near populated areas of the village in the current month.[6] Unfortunately, this question was measured only at the village level, not the more finely grained hamlet level. As a supplementary measure, we use point data on air strikes from the Combat Activities Asia (CACTA) file, another Vietnam-era digital system.[7]

Over the years, the HES came in for a great deal of criticism (see Race, 1972; Kolko, 1985; Thayer, 1985; Gibson, 1986; Elliott, 2003). Most of the objections turn on the inability of blunt quantitative indicators to capture complex social phenomena. We disagree, judging the HES to be remarkably sophisticated relative to measurement standards in the field of conflict studies *today*. Other critics disputed the adequacy of the HES for measuring attitudes. We use it only to measure behavior; we do not assume that territorial control is either principally caused or essentially constituted by prior consent or legitimacy. A more specific criticism is that the units of observation are not constant over time: 'hamlets were consolidated, split apart, and even eliminated from the survey – as seems to have happened in

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[4] The complete decisions tables are found in the National Archives and Records Administration, Hamlet Evaluation System (HES70) Documentation, Records Group 330 – Records of the Office of the Secretary of Defense, Document Number 3-330-75-141.

[5] We converted the letter scale (A to E) to a numerical scale (1 to 5) for comparability with Kalyvas (2006). The texts of the questions used in the construction of this index are provided in the Appendix, which also provides a qualitative interpretation of the Model 3A categories that was developed by the HES managers.

[6] See the web-only appendix to this article for the exact texts of these questions.

[7] The data on bombing sorties come from records of post-flight pilot reports that were compiled as the Combat Activities Asia file (CACTA), active from October 1965 through December 1970 (see Kocher, Pepinsky & Kalyvas, 2008). The data were converted to a contemporary, platform-independent format by Management Support Technology Inc., of Fairfax, Virginia under contract to the Defense Security Cooperation Agency Humanitarian Assistance and Mine Action unit (DSCA-HAMA), US Department of Defense. We used GIS to identify every bombing sortie that targeted coordinates within 2 kilometers of an HES hamlet, and we constructed two hamlet/month variables: a binary indicator of whether or not each hamlet was bombed in each month and a count of sorties directed at each hamlet in each month during the period of our study.

some cases where revolutionary control was deeply entrenched' (Elliott, 2003: 858). In fact, as Elliott himself points out, many hamlets did change their locations over time and many were abandoned or newly set up, often in response to violence or shifts in control. Changes in the HES thus responded to real changes on the ground, though no doubt with only partial adequacy. Finally, Bole & Kobata (1975) find evidence that the HES was biased in the direction of government control (the so-called 'optimistic bias'), perhaps in response to bureaucratic incentives to show 'progress' in the pacification effort.[8] We address this concern by adopting a different substantive interpretation of the HES control categories, one more in line with the description of these categories.

Overall, we believe that the HES is a unique resource for the study of the dynamics of civil wars in terms of its scope, detail, and level of analysis. Data collection on this scale during wartime requires high levels of commitment and the resources of a powerful government to undertake successfully. Thus, the HES is likely to remain for some time the only systematic micro-level database of civil war dynamics covering such a large territory and time period. An added advantage of the HES for our purposes is that it contains both a sophisticated indicator of territorial control and a measure of insurgent selective violence, thus allowing us to conduct the intended test.[9]

The HES went through three major phases. The first system, introduced in 1967, was called 'HAMLA'. It required DSAs to rate hamlets using 18 indicators of relative insurgent/government control. The coding system was highly subjective. In 1969, a new version called HES70 was introduced with the goal of reducing the role of individual judgment in coding decisions by asking specific factual questions. A third system, HES71, was introduced in 1971, adding several new questions and reorganizing the method for generating indexes. In most respects, the raw data from HES70 and HES71 are identical.

The data we use in this article are part of the HES70 system, covering the period July to December 1969 – a panel of over 60,000 observations. HAMLA lacks information on violence, our dependent variable, which is unfortunate, since it forces us to omit some of the most violent and pivotal years of the war from our analysis. Though we have data for years after 1969, we omit these as well, for several reasons. First, the data preserved by NARA are fragmentary: we have no data at all for January 1970 to June 1971; from January to December 1972, we have data on only 10 of 44 provinces. The Paris Peace Accords were signed in January 1973, ending direct US involvement in the war. The brief period we do have, from July to December 1971, corresponds to the high point of GVN control over the countryside (Elliott, 2003). Consequently, there is far less variation in territorial control compared with 1969, with very few hamlets in Zones 4 and 5. Both insurgent assassinations and incumbent bombing declined sharply, owing to the new security situation. Finally, during these last few years, the war took a sharp turn away from insurgency and toward conventional warfare, as exemplified by the 1972 Eastern Offensive. We anticipate different patterns of violence in wars with a conventional form, calling for a different analysis (Kalyvas, Balcells & Rohner, 2008; Balcells, 2007).

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[8] The designers of the HES recognized this problem and attempted to minimize it (Thayer, 1985: 145–149).

[9] A full test would also examine insurgent indiscriminate violence and incumbent selective violence. The HES includes a variable that measures insurgent 'non-selective terrorism' (HMB6), but we judge it to be inappropriate because it combines several types of violence that probably have different causal backgrounds. In particular, it includes both paradigmatic instances of terrorism, such as 'bombing of … public place[s]', along with 'harassing fire' and 'mining', which are typically used to inflict casualties on military forces. The HES includes no questions on incumbent selective violence. Some data on the issue were collected as part of the Phoenix Program (Kalyvas & Kocher, 2007b), but they cannot be matched to the HES units.

Results

Before testing the effect of control on violence, we first examine insurgent selective violence and incumbent aerial bombing side by side. The underlying model of irregular war that led to our predictions implies that these two types of violence do not overlap spatially: insurgent selective violence should take place primarily in areas of predominant insurgent control, while incumbent indiscriminate violence should be most common in areas of full insurgent control.

Figures 1 and 2 plot bombing sorties (black triangles) and hamlets with selective violence (black Xs) in the same coordinate space in, respectively, Dinh Tuong Province and Long An Province.[10] The pattern is clear and striking: the two types of violence do not overlap spatially. In Dinh Tuong, bombing sorties clustered in the northeastern and south central regions of the province, which we know to have been Vietcong strongholds (Elliott, 2003). Selective violence is scattered throughout the province, but most of it clusters outside of heavily bombed areas, often along the boundaries of strong Vietcong regions. The same pattern of insurgent selective violence on the fringes of areas with substantial aerial bombing can be observed in Long An, where the roadless northern half of the province was heavily bombarded from the air, as were regions of the center of the province. Further substantiating the non-coincidence of these two types of violence, the coefficient of correlation between insurgent selective violence and incumbent bombing is only 0.011.[11]

[10] These provinces are representative of what we see throughout South Vietnam, but the patterns are not readily visible on a larger scale.

[11] In this case, the bombing variable is the number of sorties that fell within 2 kilometers of each hamlet.

Figure 1.   Incumbent Aerial Bombing and Insurgent Selective Violence, Dinh Tuong Province, 1969
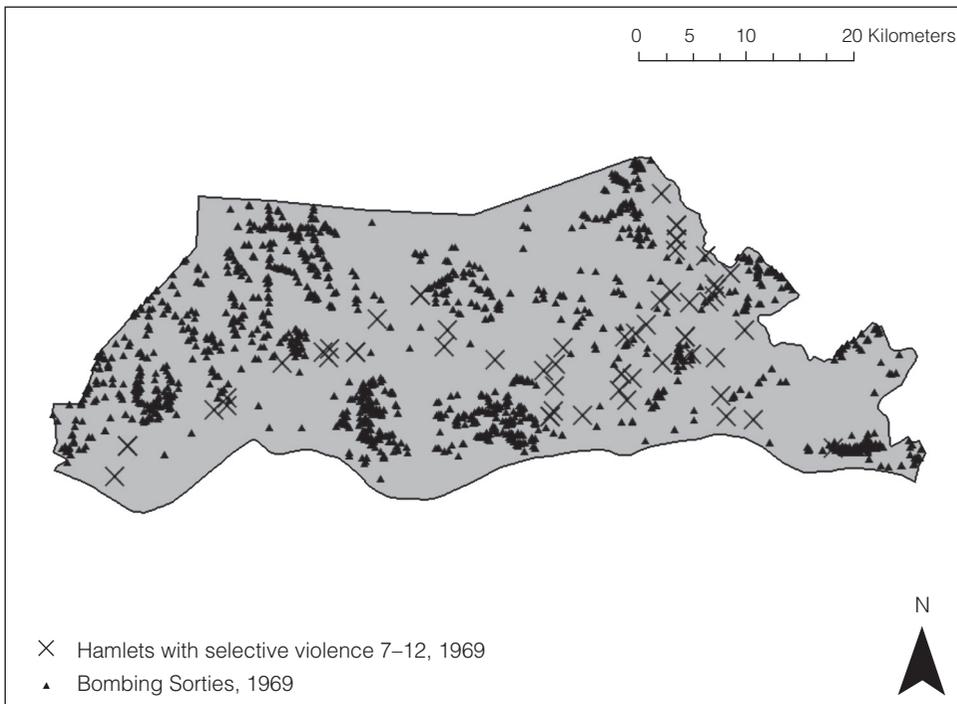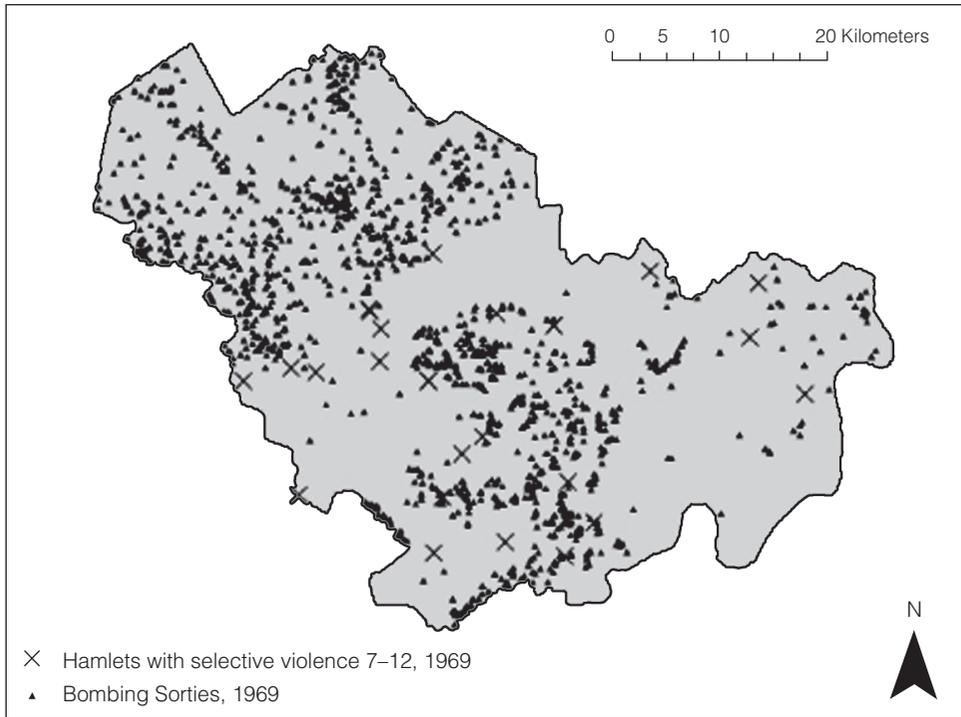
Figure 2.   Incumbent Aerial Bombing and Insurgent Selective Violence, Long An Province, 1969

× Hamlets with selective violence 7–12, 1969
▲ Bombing Sorties, 1969

We now turn to insurgent selective violence. A tabulation of the indicators of local control derived from the HES Security Macromodel (Table I) shows a high degree of territorial fragmentation during the second half of 1969, with only 15% of hamlets under full government control and 6.8% under full insurgent control. In other words, the great bulk of Vietnam's rural settlements were objects of contestation, with the government having the upper hand in mid-1969 – a picture consistent with the secondary literature.

Our data include 1,583 hamlet/month observations of insurgent selective violence. Over the course of the six months from July to December 1969, over 10% of all hamlets were affected at least once, while less than 1% was targeted more than once. These numbers are consistent with the overall level of insurgent selective violence during 1969 when, according to the Office of the Assistant Secretary of Defense (Public Affairs), 6,202 people were reported as assassinated by the Vietcong in all of 1969, while another 6,289

Table I.   Distribution of Control over Hamlets, July–December 1969

Control Status	Frequency	Percent
Full government control (1)	10,172	15.00
Incomplete government control (2)	24,844	36.64
Contested (3)	17,009	25.08
Incomplete insurgent control (4)	11,160	16.46
Full insurgent control (5)	4,628	6.82
Total	67,813	100.00

were victims of abduction by them (Lewy, 1978: 454). This pattern suggests that Vietcong violence may have become quite efficient: a single well-chosen assassination sent a clear message to a population well-schooled in the shifting fortunes of irregular war. The relatively low level of selective violence is also due to the fact that the HES captured only relatively high-profile murders of local officials and missed the presumably more frequent assassinations of 'ordinary' people suspected of collaboration with the government.[12] This distribution may also reflect the short time periods of our data: only 30–31 days. From our perspective, what is interesting is that even at low levels, insurgent selective violence varies across control zones. Table II provides a cross-tabulation indicating that insurgent selective violence was more common in Zone 4 compared to any other zone, including the more contested Zone 3.[13]

As expected, relatively few hamlets in Zone 2 and virtually none in Zone 1 display incidents of selective violence, reflecting the lack of insurgent access to government-controlled areas. The vast majority of insurgent selective violence occurred in Zones 3 through 5, where insurgents had the capability to selectively target, and more specifically in contested areas (Zones 3 to 4). However, within contested areas, insurgent selective violence was much more common in Zone 4 than elsewhere: single incidents of selective violence were twice as prevalent in this zone as in the contested hamlets of Zone 3 and nearly 4 times as prevalent as in Zone 5; there was virtually no violence in hamlets fully controlled by the incumbents and relatively little violence in hamlets fully controlled by the insurgents. Likewise, multiple incidents per month were much more common in Zone 4: nearly six times as common as in Zone 3 and more than four times as common as in Zone 5. Perhaps most interesting is that selective violence does not peak in the most contested hamlets (Zone 3). By

[12] The question specifically refers to violence directed against 'GVN officials, prominent residents or local leaders of the hamlet'. By this account, 'ordinary' civilians are left out.
[13] One cause for concern is the high percentage of Zone 5 cases coded missing on selective violence. While it is possible that these cases had high levels of selective insurgent

violence, we think it is unlikely that the Vietcong did a lot of selective killing in their own strongholds. Nothing in the secondary literature would support such a claim. The prevalence of insurgent selective violence in Zone 4 compared to the more contested Zone 3 is not affected by missing observations.

Table II.   Insurgent Selective Violence by Control, July–December 1969

Control Status	*Selective Violence in this Period?*			
	No	*Yes, once*	*Yes, repeatedly*	*Total*
1	99.9%	0.08%	0.02%	100.00%
	(10,162)	(8)	(2)	(10,172)
2	98.83%	1.12%	0.05%	100.00%
	(24,518)	(278)	(13)	(24,809)
3	97.24%	2.42%	0.35%	100.00%
	(15,340)	(381)	(55)	(15,776)
4	92.12%	5.85%	2.04%	100.00%
	(9,498)	(603)	(210)	(10,311)
5	97.96%	1.54%	0.49%	100.00%
	(1,588)	(25)	(8)	(1,621)
Total	97.47%	2.07%	0.46%	100.00%
	(61,106)	(1,295)	(288)	(62,689)

$\chi^2 (6) = 180$; $p < 0.001$.

another measure, over 51% of all hamlet/
months with selective violence in this period
were Zone 4 hamlets, even though only
about 16% of hamlets fell into that category.
Table III compares hamlets that were in
Zone 4 at least once during the whole six-
month period with hamlets that never fell
into Zone 4 during that period. Over 18%
of those hamlets had at least one incident of
insurgent selective violence, while only 5.5%
of the latter cases had incidents. Overall, the
observed pattern is consistent with Kalyvas's
(2006) predictions.

In Table IV, we examine the determinants
of insurgent selective violence in a multivari-
ate context. We estimate four pooled ordered
logit models with our ternary dependent vari-
able (0 – no selective violence, 1 – selective
violence once, 2 – selective violence multiple
times). As in the cross-tabulations, control
is measured by the HES Security Macro-
model with the categories dummied out; the
implicit category is Zone 1 (full government
control).

In the first model, we include only our
measure of control; in subsequent models, we
add statistical controls. We examine known
covariates of hamlet-level control to check for
classic spuriousness. Overall, the results con-
firm the patterns found in the crosstabs; if
anything, the results are stronger. In all of our
models, selective violence reaches its maxi-
mum in Zone 4 and its minimum in strongly
incumbent-controlled Zone 1, as predicted;
all four control categories are statistically sig-
nificant at the 1% level across all the models.

Figures 3 and 4 show the marginal effects for
all four models, showing the magnitude of
the association and the clear pattern of selec-
tive violence peaking in Zone 4.

In our second model, we hold constant
four socio-demographic indicators (all
derived from the HES): a binary indicator
that equals 1 if a hamlet is urban, 0 other-
wise; another binary variable that equals 1
if the village in which the hamlet is located
includes at least one urban hamlet; the log
of hamlet population; and an index of eco-
nomic development. Only one of these vari-
ables is consistently significant as a covariate
of selective violence: hamlet population. We
believe this result derives from the nature of
passive reporting on violent events: events in
larger settlements, better connected to com-
munications technology, get reported with a
higher probability. The development variable
is significant in some models, though with
the opposite of the expected sign. Given the
class-based character of the war, one might
assume that the Vietcong would seek to
direct more violence against richer hamlets,
but we find the opposite.

Our third model adds additional controls
for highly variable or 'rough' terrain and for
the distance to external borders (including
the Demilitarized Zone between North and
South Vietnam). Since a key component of
the war involved the infiltration of soldiers
and munitions from the North, through the
mountainous central cordillera of Vietnam,
one might suppose that these geographi-
cal indicators would capture an important

Table III.   Selective Insurgent Violence by Control Zone 4, July–December 1969

	Never in Zone 4	*In Zone 4 at least once*	*Total*
No selective violence,	94.44%	81.88%	90.14%
July–December 1969	(6,885)	(3,108)	(9,993)
Selective violence at least	5.56%	18.12%	9.86%
once, July–December 1969	(405)	(688)	(1,093)
Total	100%	100%	100%
	(7,290)	(3,796)	(11,086)

χ^2 (1) = 443.71; $p < 0.001$.

Table IV.   Determinants of Insurgent Selective Violence, July–December 1969: Ordered Logit Models

Variables	Models			
	(1)	*(2)*	*(3)*	*(4)*
Incomplete government control (2)	2.488**	2.546**	2.058**	2.107**
	(0.357)	(0.367)	(0.353)	(0.353)
Contested (3)	3.362**	3.501**	3.064**	3.108**
	(0.350)	(0.362)	(0.349)	(0.350)
Incomplete insurgent control (4)	4.472**	4.742**	4.297**	4.348**
	(0.350)	(0.366)	(0.349)	(0.351)
Full insurgent control (5)	3.051**	3.812**	3.300**	3.487**
	(0.401)	(0.425)	(0.409)	(0.410)
Urban hamlet		0.078	−0.218	−0.076
		(0.204)	(0.233)	(0.231)
In village w/urban hamlet		−0.084	−0.041	−0.030
		(0.132)	(0.132)	(0.133)
Log hamlet population		0.258**	0.332**	0.310**
		(0.045)	(0.044)	(0.044)
Development index		−0.000	−0.189*	−0.214**
		(0.102)	(0.084)	(0.083)
Log of distance to border			0.031	0.039
			(0.042)	(0.042)
Rough terrain			0.007**	0.007**
			(0.002)	(0.002)
Predominantly Vietnamese				0.165
				(0.089)
Predominantly Buddhist				−0.103
				(0.076)
Cut 1	6.924**	8.783**	9.281**	9.319**
	(0.346)	(0.441)	(0.623)	(0.626)
Cut 2	8.672**	10.577**	11.037**	11.066**
	(0.355)	(0.456)	(0.639)	(0.642)
Observations	62,689	57,367	52,423	50,087

Robust standard errors, clustered on hamlet (in parentheses).
** $p < 0.01$, * $p < 0.05$.

dimension of selective violence. The distance variable is never significant, and while terrain is statistically significant, the size of the effect is consistently miniscule. Once again, the logic of selective violence is distinct from the logic of combat.

Our last model incorporates controls for religious and ethnic identity. Both the secondary literature on the Vietnam War and previous findings from the HES (Kalyvas & Kocher, 2007a) point to a strong association between minority ethnic/religious status and government control. Here we use two binary variables coded 1 for, respectively, Vietnamese ethnicity and Buddhist religious observance, 0 otherwise; very large majorities of the population of South Vietnam spoke Vietnamese and practiced orthodox Buddhism. Neither variable appears to be a significant covariate of selective violence.

We now turn to the analysis of incumbent indiscriminate violence. Table V displays the relationship between control status and incumbent indiscriminate violence, in the form of bombing and shelling. Since bombardment was measured in the HES

Figure 3.   Control and Insurgent Selective Violence (Once Per Period): Predictions, July–December 1969
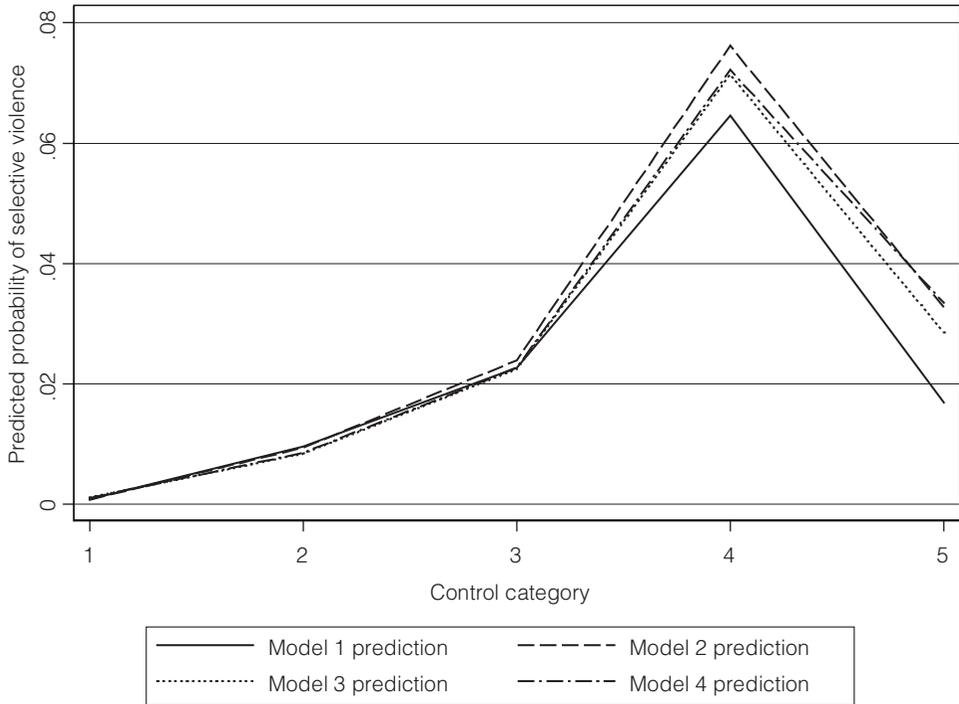
only at the level of the village, not the hamlet, we assigned to each village the control status of the hamlet within it that was closest to insurgent control. For instance, if a village had three hamlets in Zone 2 and one hamlet in Zone 4, the village was coded Zone 4. We find a strong, linear pattern in the data: bombardment was clearly associated with the extent of insurgent influence. Nearly 80% of villages with Zone 5 hamlets were bombarded; villages with no Zone 5 hamlets but at least one Zone 4 hamlet were significantly less likely to be bombed or shelled, and so forth. About 10% of villages with only Zones 1 and 2 hamlets were bombarded, and virtually no all-Zone-1 hamlets were affected. While this table reveals the expected pattern, it is not a particularly strong test of our most important contention: that the most contested hamlets are not the ones with the highest prevalence of bombardment by incumbent forces. These results could reveal an ecological fallacy, in which the results are driven by contested hamlets in villages with both contested and insurgent controlled hamlets.

Table VI permits a more finely grained examination, though only for airstrikes, not artillery fire. Here, hamlets are coded 1 if a fixed-wing air sortie struck coordinates within two kilometers of the hamlet center during the given month, and 0 otherwise. This variable is cross-tabulated with control zones; we also provide the average number of airstrikes per month for each control category. The pattern is identical to what we saw at the village level. The principal difference lies at the cut-point between Zones 4 and 5. At this more precise level of analysis, more than three times the proportion of Zone 5 hamlets was struck compared to hamlets in Zone 4. Likewise, hamlets in Zone 5 averaged four times as many airstrikes per month as Zone 4 hamlets. Bombing was less common still in Zone 3 hamlets: less than 10% of Zone 3 hamlet months had airstrikes.

Figure 4. Control and Insurgent Selective Violence (More than Once Per Period): Predictions, July–December 1969
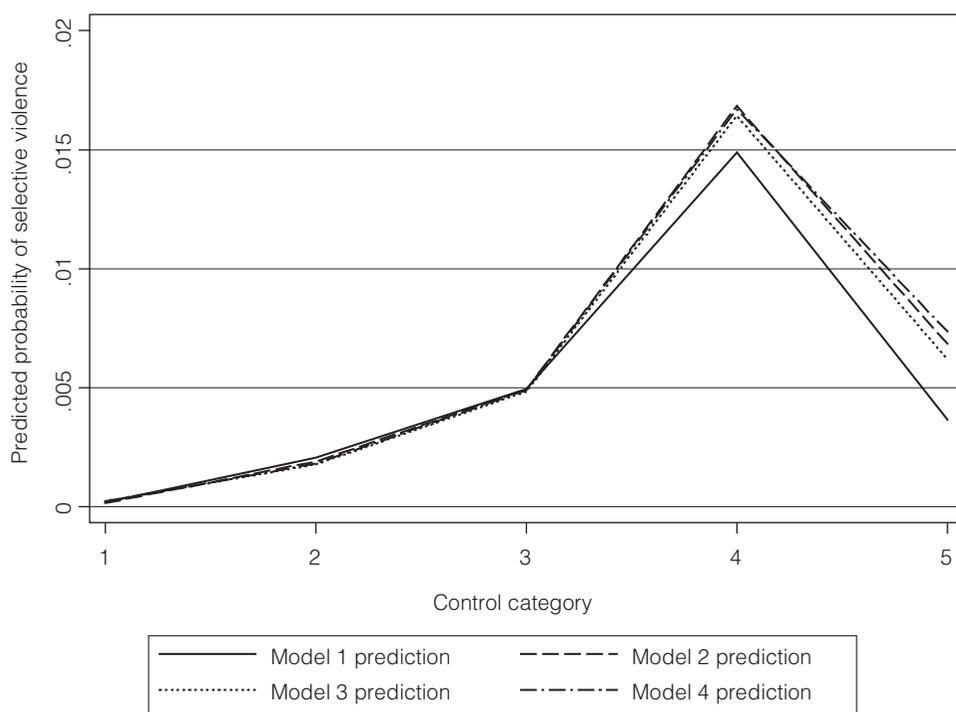
Rather than concentrating heavy bombardments at the point of decision, where control is most heavily contested, incumbents use these relatively indiscriminate technologies of violence to target insurgent strongholds. Thus, insurgency produces conditions in which distinctive modalities of violence are used under quite different conditions.

As a robustness check, Table VII looks at the determinants of incumbent aerial bombing in a multivariate setting, using the same set of control variables found in the analysis of selective violence.[14] We estimate using pooled negative binomial regression, where the dependent variable is the number of fixed-wing air attack sorties per hamlet per month.[15] As in the crosstab of bombing, hamlet-level control is measured with the

HES Enemy Political Sub-Model. We dummy out the control categories, with full government control the implicit category. In addition to reporting the raw coefficients, we report the factor change in the dependent variable for a one-unit change in each independent variable.

Our findings are entirely consistent with the crosstabs. The count of airstrikes is highest for Zone 5 and declines monotonically across the other control zones. Once again, the cut-point between Zones 4 and 5 is enormously consequential – though in exactly the opposite direction compared with insurgent selective violence. While hamlets in Zone 4 were bombed four to five times as heavily as those in Zone 1, hamlets in Zone 5 were bombed 12 to 20 times as heavily. All of the

[14] We add a time trend in these models because of strong evidence in the secondary literature of a decline in bombing in 1969 (Sorley, 1999).

[15] The negative binomial regression is an appropriate model for count data with evidence of overdispersion, as we have here.

Table V.   Villages Shelled and Bombed by Control Zone, July–December 1969

Shelled or bombed	Control status					
	1	*2*	*3*	*4*	*5*	*Total*
Never	89.11%	80.30%	62.92%	42.02%	25.42%	61.36%
	(712)	(2,642)	(2,515)	(774)	(390)	(7,033)
Once	3.63%	4.86%	5.30%	5.16%	1.76%	4.56%
	(29)	(160)	(212)	(95)	(27)	(523)
Sporadically	5.26%	12.07%	23.87%	37.79%	36.51%	23.11%
	(42)	(397)	(954)	(696)	(560)	(2,649)
Regularly	2.00%	2.77%	7.91%	15.04%	36.31%	10.97%
	(16)	(91)	(316)	(277)	(557)	(1,257)
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	(799)	(3,290)	(3,997)	(1,842)	(1,534)	(11,462)

χ^2 (12) = 2600; p < 0.001.

Table VI.   Hamlets Bombed in GVN/US Fixed-Wing Sortie by Control Zone, July–December, 1969

Control status	Not bombed	Bombed	Total	Average monthly bombing sorties
1	95.86%	4.14%	100.00%	0.13
	(10,546)	(456)	(11,002)	(1.35)
2	93.7%	6.3%	100.00%	0.21
	(29,165)	(1,962)	(31,127)	(1.67)
3	90.53%	9.47%	100.00%	0.35
	(13,097)	(1,370)	(14,467)	(1.84)
4	87.57%	12.43%	100.00%	0.65
	(3,810)	(541)	(4,351)	(3.34)
5	59.71%	40.29%	100.00%	2.54
	(1,971)	(1,330)	(3,301)	(5.14)
Total	91.19%	8.81%	100.00%	0.38
	(58,589)	(5,659)	(64,248)	(2.30)

χ^2 (4) = 470; p < 0.001.

control categories are significant in all three models. When we hold additional variables constant, there is some diminution of the importance of local control, but not much.

In addition to the key finding, there is some evidence that socio-demographic, geographic, and identity variables were associated with bombing independently of control status. First, there is indeed evidence of a trend toward decreasing intensity of bombing over the second half of 1969. Second, hamlets classified as urban were bombed about 75% more than rural hamlets. Curiously, rural hamlets in villages containing urban hamlets were somewhat less likely to be bombed than hamlets in entirely rural villages. Third, our evidence shows that more economically developed hamlets were bombed fewer times per month than less developed hamlets. The size of this effect is quite large: for every positive change of one unit in our development index, the monthly bombing count was 50% lower.[16] Our evidence suggests that the geography

[16] Because the rules of engagement in Vietnam specified that airstrikes had to be approved by Vietnamese officials, one possibility is that residents of richer hamlets had greater efficacy with these officials and were able to partially protect them from bombing.

Table VII. Determinants of US/GVN Aerial Bombardment, July–December 1969: Negative Binomial Models

Variables	Models					
	1	*Factor Δ*	*3*	*Factor Δ*	*5*	*Factor Δ*
Incomplete government control	0.477**	1.61	0.630**	1.88	0.483**	1.62
	(0.123)		(0.107)		(0.112)	
Contested	0.993**	2.70	1.022**	2.78	0.835**	2.31
	(0.120)		(0.110)		(0.117)	
Incomplete insurgent control	1.605**	4.98	1.651**	5.21	1.397**	4.04
	(0.154)		(0.128)		(0.133)	
Full insurgent control	2.964**	19.37	2.767**	15.91	2.534**	12.61
	(0.120)		(0.114)		(0.125)	
Monthly time trend			−0.141**	0.87	−0.135**	0.87
			(0.012)		(0.014)	
Urban hamlet			0.557**	1.75	0.571**	1.77
			(0.156)		(0.175)	
Urban hamlet in village			−0.374**	0.69	−0.369**	0.69
			(0.119)		(0.127)	
Log population			0.059	1.06	0.055	1.06
			(0.036)		(0.040)	
Development index			−0.680**	0.51	−0.692**	0.50
			(0.073)		(0.076)	
Log of distance to border			−0.462**	0.63	−0.516**	0.60
			(0.043)		(0.044)	
Rough terrain			0.010**	1.01	0.012**	1.01
			(0.003)		(0.003)	
Predominantly Buddhist hamlet					0.301**	1.35
					(0.074)	
Predominantly Vietnamese hamlet					0.494**	1.64
					(0.109)	
Constant	−2.031**		3.726**		3.783**	
	(0.107)		(0.516)		(0.536)	
Observations	64,248		55,940		53,156	

Robust standard errors clustered on hamlet (in parentheses); ** *p* < 0.01, * *p* < 0.05.

of the conflict also mattered for bombing. Hamlets closer to the external boundaries of South Vietnam were bombed quite a bit more heavily than those further away, probably reflecting the emphasis on interdiction in US bombing strategy. Terrain is statistically significant, but once again the size of the effect is small. Our evidence suggests that linguistic and religious identities were also highly consequential for bombing: predominantly Buddhist hamlets were bombed about 35% more heavily and predominantly Vietnamese hamlets were bombed about 65% more heavily, respectively, than their religious and linguistic minority counterparts.

Conclusion

The HES allows us to explore violence in irregular wars using unequaled data. With a six-month cross-section of over 60,000 observations, we analyzed two types of violence: insurgent selective violence, in the form of individual assassinations, and incumbent indiscriminate violence, in the form of shelling and aerial bombing.

Our analysis uncovers two important patterns. First, these two types of violence do not overlap in space. Whereas insurgent selective violence takes place in hamlets that are predominantly, but not fully, controlled by the insurgents, incumbent indiscriminate violence is most likely in hamlets fully controlled by the insurgents. The absence of this overlap confirms the intuition that the dynamics of violence in irregular war are very different from what one expects to find in conventional conflicts. Combat is not the characteristic modality by which civilians die in irregular wars; and a disconnect exists in these conflicts between frontlines and violence against civilians: it is indeed remarkable that the peak of contestation and the peak of violence against civilians diverge so much. A take-away lesson here is that the use of incidents of violence as indicators of success and failure in conflicts is deeply problematic. A theoretical implication is that conceptualizations of civil war violence must take into account both the quadratic relationship between control and violence and also, more fundamentally, the interactive nature of violence, which entails a relationship between armed actors and civilians.

Second, we find that the distribution of both insurgent selective violence and incumbent indiscriminate violence across space, including the relative nonviolence of the most contested areas, is consistent with the theoretical predictions advanced by Kalyvas (2006). This is a rare opportunity to explore the external validity of a theory on a different, yet comparable, body of empirical evidence. It is remarkable that the predictions Kalyvas tested on data consisting of 244 observations from a regional study of the Greek Civil War are replicated when tested on over 60,000 observations from Vietnam. This empirical test adds weight to the theoretical interpretations about the nature of irregular war put forth in Kalyvas (2006). Our article also suggests

an important avenue for future research: a focus on the logic of territorial control. The HES carries the promise of a significant advance in understanding what gives armed actors military and political advantages, and which factors produce victory or defeat, in irregular wars.

It is no coincidence that the designers of the HES developed sophisticated indicators for different types of violence (selective vs. indiscriminate violence) and for territorial control. They understood that such distinctions were no mere abstract categories but essential tools for understanding irregular conflicts. They fully grasped that the absence of an analysis of territorial control from the theoretical and empirical study of civil war, as well as the use of broad and over-aggregated categories, were likely to introduce a major source of bias. Therefore, we conclude this article by emphasizing the importance of incorporating territorial control into theories of civil war and of locating and collecting empirical data that allow for the systematic testing of these theories.

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STATHIS N. KALYVAS, b. 1964, PhD in Political Science (University of Chicago, 1993); Arnold Wolfers Professor of Political Science and Director, Program on Order, Conflict, and Violence, Yale University (2003–).

MATTHEW ADAM KOCHER, b. 1970, PhD in Political Science (University of Chicago, 2004); Lecturer, Department of Political Science and International Affairs Council, Yale University (2008–).