

Dynamics of Violence in Civil War: Evidence from Vietnam

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1. Introduction

This is a first-cut look at the determinants of violence and control in civil wars using a unique dataset developed during and about the Vietnam War: the Hamlet Evaluation System (HES). We focus here on two dependent variables that are essential to understanding civil war dynamics: violence and control. We proceed as follows: we provide some background on the Vietnam War and the HES; we then conduct an analysis of a randomly chosen temporal cross-section (January 1972).¹ Last, we examine a geographical cross-section (the province of Dinh Tuong) over a wide temporal range (1969-1973). We selected this particular province because it is the object of a recent yet very extensive regional study using both American and Vietnamese sources (Elliott 2003).

2. The Vietnam War

It is not easy to characterize the Vietnam War in a simple way because of its duration and complexity: it was both a civil and an interstate war, as well as an irregular and a conventional war involving a variety of actors over time. Historically, this conflict is a composite of many successive wars: it began as a resistance war during the Japanese occupation of Vietnam, pitting mostly communist insurgents against Japanese occupiers. Following the country's liberation, it mutated into an anticolonial war against the French (1946-1954), undergoing various periods and ending in a compromise that saw the country's partition. The North became communist, while the South turned toward the West, with the Americans replacing the French as its main sponsors. Partition was followed by substantial migration in both directions, as many Southern communists left for the North and many northern anticommunist Catholics migrated to the South. However, the communist infrastructure in the South was not destroyed despite a wave of repression in 1954-59.

In 1959-60, the communist remnants of the South, fortified with "returnees" from the North, launched an insurgency in the South. Available regional and local research (Elliott 2003; Race 1972) suggests that the insurgency was greatly facilitated by the organizational infrastructure that was left from the previous period, positive memories of past insurgencies, and the failure of the repression to root out communist activists. This was a textbook insurgency in almost every respect, with the only difference that it did not take place in rough peripheral terrain but in the country's heartland. Mixing selective benefits (especially land reform) with selective violence, the insurgents (who became known as the National Liberation Front – NLF or Vietcong – VC) were able to sap the presence of the state in a substantial part of the country, reducing its ability to control its territory. By 1965, the South Vietnamese regime was on the verge of collapse and was saved only by the American decision to intervene massively. After this point, the war mutated from a classic insurgency into a combination of civil and interstate war fought both irregularly and conventionally by NLF insurgents, South Vietnamese regular soldiers and local militias, and regular American and North Vietnamese troops. The US promoted and implemented vigorously a massive counterinsurgency campaign that attempted to wrest control

¹ Subsequent to our selection of this time period, we discovered that HES omitted the southern half of South Vietnam in 1972. There is no mention of this omission in any of the HES documents, and we can only surmise that it was due to the high levels of pacification of the Mekong Delta region in late 1971: the government may have concluded that it was not worth the resources to compile data on these areas. Thus, our cross-sectional analysis covers only the northern half of South Vietnam, but otherwise the coverage seems complete.

of the Vietnamese hamlets away from the insurgents. As Huntington (1968:650) put it: "The war in Vietnam is a war for the control of the population." This campaign was quite successful, judging from both qualitative studies and HES data. Induced urbanization through massive population displacement toward the cities and mass Vietcong defections weakened the social basis of the insurgency. However, the high human and economic cost of the war led to the eventual disengagement of the US, eventually followed by a North Vietnamese conventional military invasion of the South, which led to the country's reunification under communist rule.

To summarize, while the Vietnam War was a combination of many successive and partially overlapping wars fought by a fluid cast of actors with a changing menu of tactics, it was in its core a classic civil war fought largely through irregular means. As such, it is an ideal case to study given the massive amount of research conducted about it.

3. The Hamlet Evaluation System (HES)

3.1 Introduction the HES

During the Vietnam War, the United States Department of Defense pioneered the use of quantitative analysis for operational purposes (Harrison 1988:20–22). These attempts to quantify the battlefield became notorious during the war due to the reliance on enemy "body counts" as a measure of American military effectiveness. Less well known is a series of linked data-collection efforts developed to evaluate the success of rural pacification or counterinsurgency programs. Beginning in 1967, Military Assistance Command Vietnam, Civil Operations and Rural Development Support, began compiling 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" (CORDS/RAD 1971:1).²

Each province, district, village, and hamlet in South Vietnam was given a unique HES identification number and located by spatial coordinates. With the cooperation of local officials, US District Senior Advisors (DSAs) evaluated the status of each hamlet and village under their jurisdiction on a monthly and quarterly basis. The HES was originally an attempt to systematize and digitize a less formal prior practice of the South Vietnamese government to assign letter ratings of the security status at the local level (NARA n.d.).³

The HES went through three major phases. The first system, introduced in 1967, was called "HAMLA." It required DSAs to rate hamlets from A – E or V on 18 indicators of relative insurgent/government control (NARA n.d.). The coding system appears to have been highly subjective, though program evaluations determined that the indicators generally were not coded on a single dimension (NARA n.d.). In 1969, a new version called HES70 was introduced with the goal of reducing the degree of individual DSA judgment in coding decisions by asking specific factual questions, for instance: "Do local residents who are prime VC targets sleep in

² Under the South Vietnamese administrative system, the "village" was a well-defined territorial unit, with "surveyed boundaries and form[ing] contiguous coverage of the territory of each district." The term "hamlet" was used to identify clusters of habitation within villages. In some areas, hamlets were fixed to a particular surveyed and bounded territory; in other places, the "same" hamlet could shift location from place to place within a village (CORDS/RAD 1971:A-3). The average Vietnamese village contained five hamlets.

³ Indeed, the South Vietnamese communists themselves developed a similar quantitative system for hamlet evaluation, down to the use of alphabetical categories to designate degrees of control (Elliott 2003:857–858).

their homes at night?", "Is there a GVN hamlet chief for this hamlet?", or "Is there a market in this hamlet?" The questionnaires were subsequently resolved into pacification indices via sequential applications of Bayes Rule.⁴ A third system, HES71, was introduced in 1971, adding several new questions to the DSAs monthly and quarterly ledger and re-organizing the method for generating pacification indices. In most respects, the raw data from HES70 and HES71 are identical.

The development of the system had both benefits and drawbacks:

One of the paradoxes of the HES is that as its designers sought less subjectivity, they also increasingly attempted to measure more subtle indicators of "progress" in the complex struggle.... By attempting to take the judgments out of the hands of the district advisors, who were closest to the scene, the HES managers in Saigon and Washington also created an ever-widening gap between the local reality and what came out of the computers at the other end... Despite the fact that they themselves often did not know the exact situation in many of the areas in their jurisdiction, they certainly knew where they were most likely to be shot at (Elliott 2003:858–859).

While later versions of the system may have been less useful as an operational tool, they were more consistent than the earlier versions with contemporary social scientific practice, which makes indicator validity the province of theory. While as a measurement tool, later versions of HES "rested...on unprovable assumptions about the relationship of economic and community development to political behavior in a revolutionary struggle," (Elliott 2003:859) the proliferation of indicators represents a distinct *advantage* for contemporary analysts of civil war micro-processes, because it allows us to *test* some of these "unprovable" assumptions.

The developers of the HES were surprisingly pluralistic and inclusive in their decisions about which factors to include in the DSA surveys: ethnic and religious composition, land tenure, education, and local infrastructure were all considered potentially important predictors of government control. Simple correlation matrices show conclusively that the data were coded from diverse information; if DSAs were making the data up, they were at least being creative about it. These features of the data make it possible to apply multivariate methods that were not available to the creators of the system due to the data-processing limitations of the time.

3.2 Spatial proxies and effects

Among the most attractive features of the HES dataset is the potential to apply the tools of Geographical Information Systems (GIS) for the development of geographical and spatial indicators, visual analysis, and spatial statistics. We have begun to exploit the first two approaches in this paper, while the last will be a focus of future applications.

⁴ Initial prior probabilities were assumed to be neutral between the pacification categories. Conditional probabilities were assigned using some method that has apparently not been included in declassified documents. Each month, Bayes Rule was applied to update the pacification status for each hamlet and village on a series of indices, using the new monthly scores provided by DSAs.

As noted above, every hamlet and village in the dataset is identified by spatial coordinates. In theory, the geographical centroid of each place is identified to a precision of 100 X 100 meters (see the Appendix for technical details). To date, we have constructed two potentially useful spatial indicators. The first is a hamlet-by-hamlet measure of rough terrain, measured as the standard deviation of a 9km² area around each location. In principle, this approach offers a much more fine-grained method for testing the terrain effects identified by Fearon and Laitin (2003).⁵ We were sceptical of the usefulness of this variable for Vietnam, which is a distinctly non-rough country (at least in topographical terms), and initial tests seem to bear out these concerns.

Second, we have measured the linear distance of each hamlet and village in South Vietnam to the western borders with Cambodia and Laos, and to the demarcation line with North Vietnam. These variables represent rough proxies for the accessibility of regions of South Vietnam to external base areas and supply routes for North Vietnamese manpower and logistical support. We are thus able to address systematically a long-standing debate over the degree of "autonomy" of the National Liberation Front (NLF). If proximity to the external borders of the country was a significant determinant of communist control at the local level, then we have strong evidence to support US and South Vietnamese claims that the NLF lacked operational autonomy. Furthermore, these data offer a micro-level test for the importance of external sanctuaries to rebel movements.

GIS also allows us to visualize the distribution of key variables in geographical space, which has the potential to generate insights that may be neither obvious nor easily testable in statistical frameworks. We present one striking inductive finding about the relationship between geography, ethnicity, and civil war processes that would have been difficult, if not impossible, to identify in any other way.

Finally, the standard statistical assumption of residually independent observations is unlikely to hold for civil war processes at the micro-level. War is an inherently spatial enterprise, in which what occurs at one location is likely to depend crucially on what happens nearby. On the downside, the high likelihood of spatial dependence among observations in the HES should undermine our confidence in the results of non-spatial statistical models. On the upside, however, the data convey a great of information about the spatial structure of the observations, which can be exploited systematically through spatial statistical models. For instance, it is relatively straightforward to measure the linear distance between any two observations in the dataset, which might be used to proxy for network effects.

3.3 Links to Additional Data Sources

During the remainder of the 1960s, the Department of Defense developed additional tools to measure various aspects of pacification. In each case, the new dataset was anchored to the earlier data via the HES hamlet locator number. For instance, the National Police Infrastructure Analysis System (NPIASS) recorded key information about individuals "neutralized" by the Phoenix Program (Adams 1991:82).⁶ The Terrorist Incident Reporting System (TIRSA)

⁵ See Kocher (2003) for a cross-national application of a rigorous GIS-based test of the rough terrain hypothesis.

⁶ At the present time, the NPIASS is available only in a "public use" version that lacks key information on US/GVN violence.

recorded incidents of violence directed against South Vietnamese civilian officials by the NLF or the North Vietnamese military. In theory, these other databases can be linked to the HES via the locator number, providing an unusual combination of micro-level data on both control and violence.

3.4 Drawbacks and Potential Sources of Bias

The HES was the product of a peculiar bi-national bureaucratic structure, under conditions of political and military stress. As such, there are a number of limitations to the dataset that should be taken into account in evaluating any findings drawn from it. In the context of the Vietnam War, the HES was used as a means to evaluate operational progress. Thus, it was tied directly to the fortunes of individuals who may have had the power to influence the content, directly or indirectly. This conflict of interest became all the more acute as “Vietnamization” gradually passed the responsibility for coding the HES out of the hands of American DSAs and into those of the Government of Vietnam (GVN) (Elliott 2003, **).⁷ Consequently, the HES should be viewed with skepticism especially when it is used as a measure of *absolute levels* of, e.g., control, violence, or civilian welfare. Where we rely on the HES for these purposes, we attempt to validate our findings with qualitative accounts.

The HES is far more interesting, and less suspect, as a data source for sub-national or micro-level research questions. We have no strong prior reason to expect measurement biases to be systematically associated with independent variables of interest within the dataset. At most, one should anticipate a narrowing of the overall variation and a consequent underestimation of some effects.

The measurement procedure should also lead to overestimates of inter-period effects. DSAs did not code each location independently in each time period. Rather, printed forms with the last period’s values were updated each month. Since we have a strong prior expectation of time stability for most cases, this coding procedure may have had net advantages for the overall accuracy of the system.

In addition to these concerns, there are large gaps in the dataset across both time and space. The first version of HES, HAMLA, covers the period January 1967 – December 1968. The second version, HES70, came online in July of 1969, and we have only the last six months of 1969 before another large gap in the data, covering the period January 1970 – June 1971. HES71 is available beginning in July 1971 and runs only through January 1974. Thus, the dataset fails to cover some of the most pivotal years of the war: the development of the insurgency (1960-1965), the period of stalemate following the US intervention in 1965, the post-Tet US/GVN counteroffensive, most of the period of consolidation of GVN control from 1970 – 1972, and the final years of the war, when US aid to the South Vietnamese declined and the NLF began to make a comeback.

⁷ The division of military labor in Vietnam tended to place pacification in the hands of the GVN for most of the war. “Program evaluation,” in the form of the HES, was in the hands of Americans until the withdrawal of US forces. Thus, the conflict of interest was presumably never as acute for DSAs as it became for the Vietnamese officers who replaced them.

Finally, it is clear from qualitative accounts that hamlets were not homogenous spaces. At times, sections of the same hamlet could be controlled by different actors, while portions in between were contested. Civilians often moved within hamlets in the quest for security. Thus, ecological biases are built into the dataset even at this fine a level of disaggregation.

Despite these concerns, the HES is a unique resource for the study 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.

4. Violence in the Vietnam War

Violence against civilians was used by both insurgents and incumbents. In a war without fronts whose central goal was population control, violence was primarily used to shape the behavior of the civilian population and induce them to collaborate exclusively with one side only. It is generally acknowledged that the NLF was much more discriminating in its use of violence than the GVN and the US, at least until the late 1960s (Pike 1970; Hosmer 1970). The reason was that the NLF had a much better organization locally, hence its information was much better and its violence was much more selective. This point was made very clearly at a September 1960 meeting of the NLF in Dinh Tuong province, just when the insurgency was beginning:

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 *te* and spies shrink back so that the masses can rise up strongly (quoted in Elliott 2003:266).

This method succeeded and produced a reinforcement effect, further weakening GVN control and its ability to collect information. The sequence was as follows: first the GVN posts were neutralized, then intelligence stopped coming, causing the larger GVN units to be ineffective and raising the danger for GVN local agents and sympathizers even more (Elliott 2003:424). Elliott (2003:424) adds that “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.”

This left indiscriminate violence as the main option. Sheehan (1989) describes how the South Vietnamese military and the US high command in Vietnam administered indiscriminate air and artillery bombardment on peasant hamlets at an estimated cost of about 25,000 civilians killed

and 50,000 civilians wounded a year.⁸ An American provincial adviser told Fall (2000:110) that in his area, “we shot a half-million dollar’s worth of howitzer ammunition last month on unobserved targets. Yet the whole provincial budget for information-and intelligence-gathering is \$300.” This violence was premised on the theory that it would “terrorize the peasants out of supporting the Viet Cong. … Their attitude was: ‘We’ll teach these people a lesson. We’ll show them how strong and tough we are’” (Sheehan 1989:109). As an American Air Force general put it: “The solution in Vietnam is more bombs, more shells, more napalm … till the other side cracks and gives up” (Sheehan 1989:619). This violence which, along with unintended victims of military actions, caused altogether between 300,00 and 430,000 victims (Lewy 1978), alienated the population (Taber 1965:95); it also produced a massive population movement both toward the cities and local GVN garrisons. Elliott (2003) describes how Vietnamese peasants moved just outside the hamlets from where the GVN bombed the countryside. Even though this violence weakened the NLF considerably by undermining its social basis, it failed to win the war. As a result, the US sponsored a shift, during the late 1960s and early 1970s to a highly controversial and centralized program of selective violence, called the “Phoenix Program.” The goal was to kill, jail, or intimidate into defection the members of the Vietcong apparatus in the South “person by person” (Adams 1994:178). By 1971, the war was transformed into “one in which whom we killed was far more important than how many we killed” (Herrington 1997:69); a CIA operative told Moyar (1997:146) that “we had 75 percent of the key [Vietcong] cadres named.” Tens of thousands of Vietnamese were imprisoned or killed, and this appears to have been quite effective in getting South Vietnamese peasants to minimize their collaboration with the Vietcong after 1971 (Moyar 1997:298-318). On the other hand, it is estimated that the Vietcong assassinated 36,725 persons and abducted 58,499 persons between 1957 and 1972 (Lewy 1978:454)—though this may be an underestimate.⁹ The Vietcong did not refrain from indiscriminate violence, sometimes targeting villages that defected or peasants who fled their villages and moved to refugee camps.¹⁰

The description makes it clear that insurgent violence was primarily selective and “joint” in its implementation (Kalyvas forthcoming), in the sense that it reflected the goals of both the supralocal organization and its local agents. As a Vietcong district cadre, reflecting on the thirty killings that had taken place in his village between 1960 and 1963 put it:

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

⁸The South Vietnamese also used selective violence in the early 1960s--especially before the conflict escalated into a full-fledged war (Molnar 1965:184). However, selective violence remained quite marginal in the overall scheme of incumbent violence--until years later.

⁹ It is not clear if these numbers represent only government officials and employees; Hosmer (1970:44) provides data for the period 1966-1969 according to which 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) claims that even these numbers “significantly understate the total number of GVN employees and others who were abducted or assassinated in those four years.” Starting from July 1968, the Public Safety Division of MACCORDS started the Terrorist Incident Reporting System (TIRSA) to collect and report incidents of insurgent violence. We plan to incorporate the TIRSA data in our analysis in future papers.

¹⁰ For example, the insurgents massacred 114 Montagnards during an attack on the village of Dak Son, in Phuoc Long Province in the last months of 1967 and abducted 300 refugees from a camp in Binh Dinh province during the same period (Hosmer 1970:43).

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. Besides, the district also wanted to protect the prestige of the village authorities because they were closer to the scene (quoted in Elliott 2003:338-9).

We now turn to the cross-sectional analysis, using HES data from January 1972.

5. January 1972

5.1 Introduction: Facts about the War, Control and Violence.

The picture that emerges about the situation in January 1972 is of a conflict displaying low levels of intensity. Most hamlets appear to have been more or less (though not completely) pacified: 42.17% had no known or suspected NLF infrastructure, 43.86% had sporadic insurgent covert activity; only 9.97% had regular covert activity and sporadic overt activity at night, 1.88% were controlled by the NLF at night only, and 2.12% were fully controlled by the insurgents. As it turns out, a substantial number of hamlets—around 30%, are missing. These missing hamlets have been classified as abandoned.

The most comprehensive indicator of control is the pacification rating, an indicator derived from answers to 11 questions. About half of all hamlets (47.37%) were classified as either “A” or “B”—fully or almost fully pacified.¹¹ The NLF had some covert activity in 14.52% of the hamlets (“C”), and more presence in few more hamlets (Table 2; Ns refer to missing data).

Insurgent units were elusive and civilian fatalities low. Local security forces came into contact with enemy forces in just 342 hamlets (4.36% of all hamlets), and in only 87 of them was contact established more than once. Insurgent activities produced civilian fatalities only in 61 hamlets (and only in 4 were more than five civilians killed); incumbent military activities led to civilian fatalities only in 21 hamlets (and only in 1 were more than five civilians killed). Physical damage to property was either absent or minor (in 105 hamlets).

Table 1: Pacification

Status	Frequency	Percent	Cumulative Percent
A	581	10.52	10.52
B	2035	36.85	47.37
C	802	14.52	61.89

¹¹ “A” hamlets were those where armed enemy military forces are very highly unlikely to have entered inhabited areas of the hamlet during the month; friendly local security forces conduct adequate security operations in the hamlet both day and night; GVN law enforcement is adequate both day and night; at most sporadic VC activity; VC does not collect taxes from hamlet residents. “B” hamlets were similar to “A” but friendly security forces operations were marginal to adequate by night, VC collect taxes sporadically at most; in “C” hamlets, friendly local security forces conduct marginal operations at night and there is sporadic to regular covert hamlet VC activity, but only sporadic overt activity; GVN hamlet chief is usually present only during daylight; in “D” hamlets enemy forces are likely to have entered the hamlet during the month while friendly security forces conduct only marginal operations day or night. “E” hamlets are those where the VC is the primary authority day and night, collects taxes regularly; they may be visited by friendly security forces which differentiates them from “V” hamlets which are fully controlled by the VC.

D	212	3.84	65.73
E	144	2.61	68.33
V	11	0.20	68.53
Missing	1738	31.47	100.00
Total	5523	100.00	--

According to the Office of the Assistant Secretary of Defense (Public Affairs), 4,405 people were assassinated in 1972, while another 13,119 were abducted by the insurgents (cited in Lewy 1980:454). This was a higher toll compared to 1971, but lower than 1968, 1969 and 1970 in terms of assassinations, though the number of abductions was exceptionally high (there were 8,759 abductions in 1968, the second year in that respect). Comparatively speaking, the toll of Vietcong violence does not seem significantly lower compared to previous years.

Unfortunately HES does not provide any information on the violence of the South Vietnamese and US forces. On the other hand, HES lists 4,361 attempts at selective VC terrorism for 1972, which suggest that some hamlets were the sites of violence involving more than one person at a time. Selective insurgent violence appears to be a rather marginal phenomenon in January 1972; attempts at selective terrorism were directed against resident of 3.78% of all hamlets (excluding missing cases).¹² It is unclear how this relates to the assassinations and abductions recorded by the OASD. HES also provides data on non-selective violence defined as “acts of general or non-selective terrorism (mining, sabotage, harassing fire, bombing of a public space, etc). This category, which is vague and may include accidents, constitutes likewise a sporadic phenomenon, occurring in about 5% of all hamlets.

5.2 Determinants of Control

At the height of American involvement in Vietnam, Huntington (1968:652) argued that war-induced urbanization and economic modernization were rapidly bringing Vietnam “out of the phase in which a rural revolutionary movement can hope to generate sufficient strength to come to power.” Recent cross-national civil war studies have widely confirmed that modernization, usually proxied by *per capita* GDP, dramatically reduces a country’s risk of civil war. However, a number of mechanisms are consistent with the empirical relationship (poverty-induced grievance, economic substitution, and state strength are the most prominent), and observational equivalence at the cross-national level of analysis threatens to hamstring further empirical progress.

The consistent coding of numerous variables across large numbers of cases in the HES offers us the opportunity to disentangle the effects of multiple competing interpretations of the effect of modernization on civil war. For instance, if the opportunity cost to recruitment as a guerrilla is a key mechanism linking modernization to civil war (Collier and Hoeffer 2000), then we should

¹²This is based on variable HMB5 which measures “attempts at selective terrorism (kidnapping or assassination) directed at particular GVN officials, prominent residents or local leaders of the hamlet during the month.” Note that these attempts at selective violence did not necessarily occur *in* the hamlets to which they are attributed, but rather happened *to* someone from the hamlet. We can safely assume that in most cases hamlet residents were killed in their hamlets or closely adjacent, but this is not always the case. In January 1972, 44 out of the 138 total attempts at selective violence were committed against the residents of hamlets that had *no insurgent presence in the hamlet* during that month.

expect to see government control stronger in areas where economic development improves the overall standard of living.¹³ The HES includes several useful proxies for economic development. We use categorical indicators of television and radio ownership as reasonable measures of local development.¹⁴ The HES also includes plausible indicators of poverty: we use a 5-category measure of the percentage of households that required aid to remain above the subsistence level.

Table 2: Urbanization and Control

Pacification Status	Rural	Urban	Total
A	11.60% (392)	47.01% (189)	15.36% (581)
B	54.35 (1837)	49.25 (198)	53.81 (2035)
C	23.43 (792)	2.49 (10)	21.21 (802)
D	6.21 (210)	0.50 (2)	5.61 (212)
E	4.08 (138)	0.75 (3)	3.73 (141)
VC	0.33 (11)	0.00 (0)	0.29 (11)
	100.00	100.00	100.00
Total	(3380)	(402)	(3782)

$$\chi^2(5) = 402.38; \text{pr} = 0.00$$

Kocher (2003) argues that the relationship between GDP/cap. is spurious, the artifact of a strong association between levels of urbanization and economic development. Locally dense populations favor conventional armies, because they can be more easily policed and because they tend to compel force-on-force military encounters that guerrilla armies cannot win. We use two measures of local population density to test this conjecture. The first is a binary urban/rural variable;¹⁵ the second is the natural log of hamlet population. Table 3 demonstrates that control in Vietnam was highly responsive to the urban-rural divide: over 96% of urban hamlets (compared with 66% of rural hamlets) fell into one of the two highest pacification categories.

In the multivariate analysis that follows, we hold constant several additional factors that may play an important role in producing government control. Topographic rough terrain and distance to the western and northern borders (described in Section 2, above) are reasonable proxies for geography that favors rebels and for rebel access to external bases and sources of supply,

¹³ One must, of course, assume that guerrillas tend to fight in the same areas where they are recruited. The NLF had several types of guerrilla units; some fought in their own villages, others did not.

¹⁴ DSAs estimated the percentage of households in the hamlet that owned televisions and radios on 4- and 5-point scales, respectively.

¹⁵ In the HES an urban hamlet “contains, or is part of, a population mass of 20,000 or more. The population density is high. Houses are close together and the incidence of multi-family dwellings is high. In an urban hamlet, there is a high likelihood of National Police presence. Most urban hamlets will have at least one gas station, probably several. There will be many shops and restaurants which are likely to have signs or billboards in front....” Several other factors are mentioned as well, which suggests that the coding of this variable was highly subjective.

respectively. Minority ethnic and religious groups, for instance Montagnards, members of the Cao Dai and Hoa Hao sects, and Catholics, were all thought during the Vietnam War to be important elements of the GVN social base (Huntington 1968:210 – 211). We control for minority ethnicity with binary variables coded one if the hamlet was “predominantly” inhabited by members of the specified religious community, zero otherwise. Finally, we address longstanding debates about the relationship between land tenure and peasant revolution using a 5-category indicator of the percentage of village households that own “all or part of the land they farm.”¹⁶

The logit estimates in Table 4 provide some support for all three of the interpretations of the modernization effect discussed above.¹⁷ All things equal, urban hamlets were between 2.5 and 3.3 times more likely to be controlled by the government than rural hamlets, and each 1-unit increase in the log of hamlet population produced about a 20% higher probability of government control. Hamlets with some television ownership were about twice as likely than those with none to be GVN-controlled, while hamlets with moderate TV ownership had a probability of government control 4½ times greater than those with some TV ownership. Similarly, above the lowest level, each 1-category increase in radio ownership corresponds to between a 2.5 and 4.2 times greater chance of government control.¹⁸

¹⁶ This variable was measured at the *village*, rather than hamlet, level, and the values for the village were extrapolated to all hamlets in the village. Thus, we should proceed cautiously with any results based on this variable.

¹⁷ The dependent variable in these analyses is a binary variable specifying whether or not “prime VC targets sleep in their homes at night” (yes = 0, no = 1). The developers of HES71 assumed that the choice by officials and collaborators to sleep at home was a good method of assessing local knowledge about control. Ordered logit models using the pacification index as dependent variable produce broadly similar results.

¹⁸ The highest category of television ownership predicts GVN control perfectly and was consequently dropped in estimation. By 1972, radio ownership in Vietnam was widespread enough that less than 10% of hamlets fell into the lowest category. Unsurprisingly, nearly all such hamlets were Montagnard and located in the highlands.

Table 3: Determinants of Control in Vietnam, January 1972

	Model 1	Model 2
Log of Hamlet Population	0.844 (0.041)	0.836 (0.047)
Urban/Rural	0.301 (0.062)	0.408 (0.093)
< 10% own TVs	0.500 (0.067)	0.521 (0.078)
10 – 40% own TVs	0.225 (0.075)	0.237 (0.084)
< 10% own Radios	0.949 (0.164)	0.932 (0.183)
10 – 40% own Radios	0.408 (0.078)	0.415 (0.090)
40 – 70% own Radios	0.234 (0.048)	0.251 (0.058)
70 – 100% own Radios	0.284 (0.077)	0.264 (0.081)
< 10% need Assistance	1.706 (0.166)	1.288 (0.142)
10 – 40% need Assistance	1.379 (0.170)	1.291 (0.180)
40 – 90% need Assistance	1.131 (0.168)	1.175 (0.214)
All of nearly all need Assistance	0.444 (0.122)	0.417 (0.138)
Rough Terrain	0.992 (0.003)	0.984 (0.004)
Log of Distance to Western Border	1.691 (0.226)	2.299 (0.394)
Log of Distance to North Vietnam	1.297 (0.092)	1.056 (0.395)
Catholic	0.176 (0.036)	0.193 (0.042)
Cao Dai	0.945 (0.437)	2.149 (1.301)
Montagnard	0.312 (0.051)	0.523 (0.102)
Refugee Camp		0.477 (0.079)
< 10% own Land		1.810 (9.374)
10 – 40% own Land		4.847 (0.954)
40 – 90% own Land		2.504 (0.460)
All of nearly all own Land		1.916 (0.366)
Pseudo- R2	0.181	0.206
N	3502	2905
Percent Correctly Predicted	68%	71%

MLE logit estimates. All coefficients expressed as odds ratios. Categorical variables are analyzed in binary decomposition. DV: "Do residents who are prime VC targets sleep in their homes at night?"

Bold: $p < .05$, **Bold Italic:** $p < .01$

Need for assistance is somewhat more difficult to interpret, as only three out of the four categories in each model achieve statistical significance, with the two lowest categories pointing toward lower government control, while the highest category suggests greater control. One reasonable interpretation is that poverty induced a marginally more favorable attitude toward the NLF, unless poverty became total dependence, in which case the South Vietnamese government was the only capable provider. Another possibility is that hamlets where all or virtually all households received assistance were more likely to be GVN refugee camps, which had a high probability of government control. The inclusion of a dummy variable for refugee camps in the second model, and the resultant decrease in the size of the assistance effect across the board, tends to support this conjecture. Refugee camps were about twice as likely to be GVN-controlled as other types of hamlets.

Geographical proximity to external borders *does not* appear to increase the probability of NLF control; instead it is a strong predictor of *government* control. Each one-unit *increase* in the log of distance to the Cambodia/Laos border corresponds to between a 70% and 220% greater probability of NLF control.¹⁹ This finding is striking evidence that communist control of South Vietnamese hamlets was largely autonomous from direct North Vietnamese support. However, it is surprising to find such a strong effect in the opposite direction. One possibility is that the finding is an artifact of American and South Vietnamese strategy, which focused heavily on the interdiction of North Vietnamese manpower and logistics. The US and the GVN may have focused their operations more intensively on the region closest to the western border.

Similarly, in these data, rough terrain has a small, though statistically significant effect on government control, but it is in the opposite of the expected direction. A hamlet at the 90th percentile for roughness, which was about 43 meters standard deviation over a 9km.² area, was 35 – 70% more likely to be government controlled than a hamlet in the flat lands. Once again, US/GVN strategy may have focused disproportionately on the central highlands of Vietnam, obviating the usual guerrilla advantages in rough terrain.

Some types of ethnic minority hamlets had a higher probability of government control. Predominantly Catholic hamlets were between 5.2 and 5.7 times more likely to be classified as GVN controlled than non-Catholic locales. Montagnard hamlets had a 2 to 3 times greater chance of being GVN-dominated than majority Vietnamese hamlets. Cao Dai hamlets, on the other hand, do not appear to have been different in any significant way from majority hamlets in their propensity to fall under the authority of the government.

Finally, the second model provides striking results on the role of land tenure. Rather than undermining government control, these data suggest that peasant land ownership may undermine government control. Each 1-category increase predicts between .8 and 4.8 times lesser chance of government control.

¹⁹ The size of effect for the North Vietnam border is much smaller and far noisier, which is unsurprising, considering that most of South Vietnam was *far* closer to the western border than it was to North Vietnam.

5.3 Determinants of Insurgent Violence

Kalyvas (forthcoming) has proposed a theory that posits violence as a function of control; control is operationalized in a five-zone space where zone 1 is fully controlled by incumbents and zone 5 is fully controlled by insurgents. Zones 2 and 4 are where incumbents and insurgents respectively enjoy prevalent but not full control. Last, zone 3 is where control between the two sides is balanced: incumbents govern by day and insurgents by night. Selective violence is predicted to occur where one actor has less than full control (zones 2 and 4). Conversely, there should be little or no violence where one actor has full control (zones 1 and 5). Places where the two actors share control in equal parts (“incumbents by day, insurgents by night”) should be peaceful (zone 3). The five zones of control are roughly equivalent to the HES pacification indicators, as follows: zone 1 comprises hamlets A and B, zone 2 hamlets C, zone 3 hamlets D, zone 4 hamlets E, and zone 5 hamlets VC. Table 5 summarizes the assumed relationship between Kalyvas’s model and the HES pacification categories.

Table 4: Equivalence of HES pacification and Kalyvas’ control ratings

HES pacification rating	Key elements	Kalyvas control rating	Predictions
A	Full control by incumbents; adequate security both day and night.	1	No violence
B	Mainly but not fully controlled by incumbents; Insurgents: sporadic covert activity	2	Incumbent violence
C	Balance of forces: incumbent security adequate by day, only marginal at night; sporadic to regular covert insurgent activity at night.	3	No violence
D	Mainly but not fully controlled by insurgents. Incumbent presence marginal at day; regular covert and overt insurgent activity	4	Insurgent violence
E	Insurgents are the primary authority day and night	5	No violence
V	Full control by insurgents ²⁰	5	No violence

Selective insurgent violence appears to have been very sporadic in January 1972 and affected few hamlets—138 altogether. This may have been due to the fact that the war was ongoing for more than a decade and that a few well-targeted assassinations may have been expected to send the right message; another possibility is that the HES captured only relative high-profile murders of local officials and missed presumably more frequent assassinations of “ordinary” people who were suspecting of informing for the government or were just shirking. From our perspective what is interesting is that even at low levels, insurgent selective violence varies.

²⁰ “V” hamlets appear to differ from “E” ones in that they are “reported” as being controlled by the Vietcong, presumably as opposed to observed.

Cross-tabulating pacification and selective violence (Table 6) shows insurgent violence is concentrated in the contested areas (hamlets B, C, and D). However, *within* contested areas it is most likely in D hamlets (or zone 4) than elsewhere; there is no violence in hamlets that are fully controlled by the insurgents (E and V) and virtually no violence in hamlets fully controlled by the incumbents (A). There is some violence in hamlets B and C, but what is particularly interesting is that the most contested hamlets (C or zone 3) display comparatively low violence, lower than hamlets B and D, a result consistent with our expectations. This pattern holds for alternative specifications of control. For example, using the HES security rating, which is slightly different from the pacification rating, produces an even more striking concentration of insurgent violence in “D” hamlets.

Table 5: Selective Insurgent Violence as a Function of Control

Pacification Status	No Selective Violence	Selective Violence	Total
A	99.83% (580)	0.17% (1)	100.00% (581)
B	95.82 (1950)	4.18 (85)	100.00 (2035)
C	96.63 (773)	3.38 (27)	100.00 (800)
D	88.29 (181)	11.71 (24)	100.00 (205)
E	100.00 (9)	0.00 (0)	100.00 (9)
V	100.00 (11)	0.00 (0)	100.00 (8)
Missing	100.00 (8)	0.00 (0)	100.00 (11)
Total	96.24 (3512)	3.76 (137)	100.00 (3649)

$$\chi^2 (6) = 58.93; \text{pr} = 0.00$$

We also ran a test to determine whether the mean value of selective violence varied significantly for each value of the pacification rating. We created a binary variable: whether each village belongs to a pacification category or not and we test to see whether their status is statistically related to the likelihood that they will be the sites of selective violence. Significance tests for three hypotheses are reported below. Hamlets A and D are the only status categories significantly different from the rest, the former *with no* violence and the latter *with* violence.

Table 6: Difference of Mean (Selective Violence) by Pacification Category.

Pacification Category	0 = No 1 = Yes	Mean	Obs.	Prob < t H1	Prob > t H2	Prob > t H3
A	0	0.044	3060	--	--	--
	1	0.002	581	1.00	0.00	0.00
B	0	0.033	1606	--	--	--
	1	0.042	2035	0.070	0.139	0.930
C	0	0.039	2841	--	--	--
	1	0.034	800	0.743	0.514	0.257
D	0	0.033	3436	--	--	--
	1	0.117	205	0.00	0.00	1.00
E	0	0.038	3632	--	--	--
	1	0	9	0.724	0.553	0.276
V	0	0.038	3630	--	--	--
	1	0	11	0.744	0.511	0.256

H1: mean (0) < mean (1); H2: mean (0) ~ mean (1); H3: mean (0) > mean (1)

We also expect that indiscriminate violence should be a function of information (also proxied by control): the less information an actor has, the more likely he is to resort to indiscriminate violence (assuming violence is chosen in the first place). We know from qualitative accounts (e.g. Elliott 2003; Sheehan 1989) that indiscriminate US and GVN aerial and artillery bombing was directed against areas controlled by the NLF, but we lack data. Regarding insurgent non-selective violence, we find that, surprisingly, the magnitude of non-selective violence goes in the opposite direction than we would expect: it is low in areas strongly controlled by the incumbents and gradually increases in areas controlled by insurgents: surprisingly, the NLF were relatively more likely to target villages that they had control over (Table 7). This is difficult to interpret; it may also be an artifact of the data or capturing accidents (e.g. people stepping on land mines) rather than intentional violence.

An interesting aspect of non-selective violence is that it is much more likely to have occurred in refugee camps; while these camps are classified as mostly “C” (i.e. equally controlled by both sides), they represented a major defeat for the insurgency since it included populations that had often been well-disposed toward the Vietcong and were gradually, yet surely, brought under incumbent control (Wiesner 1988) (refugee camps do not stand out in terms of selective violence).

Table 7: Non-selective Insurgent Violence as a Function of Control

Pacification Status	No Non -Selective Violence	Non - Selective Violence	Total
A	97.93%	2.07%	100.00%

	(569)	(12)	(581)
B	95.82	4.18	100.00
	(1950)	(85)	(2034)
C	93.13	6.88	100.00
	(745)	(55)	(800)
D	88.29	13.17	100.00
	(178)	(27)	(205)
E	77.78	22.22	100.00
	(7)	(2)	(9)
V	81.82	18.18	100.00
	(9)	(2)	(8)
Missing	87.50	12.50	100.00
	(9)	(1)	(11)
Total	94.96	5.04	100.00
	(3464)	(184)	(3648)

$$\chi^2 (6) = 58.25; \text{pr} = 0.00$$

Overall, the NLF does not seem to have resorted to massive indiscriminate violence, perhaps because it was able to retain some presence even when losing control. The best known cases of indiscriminate violence include random bombings of cities used mostly for demonstration effect, massacres in refugee camps, an attempt to deter massive population movements, and a few high – profile massacres, the best known of which is the massacre of between 5,000 and 6,000 people in Hue following the Tet Offensive.

5.2 Multivariate Analysis of Insurgent Violence

The logistic regressions in Table 8 further address Kalyvas' argument about the relationship between control and selective violence. We coded the pacification index into three binary variables (B, C, and D) (we left A, E, and V out because they are in essence empty cells). We have introduced some control variables as well.²¹

The results are also somewhat supportive of Kalyvas account of civil war violence. In Model 1, below, the effect of pacification on selective violence is significant for all three categories, but the jump in violence is much more pronounced when one moves from C to D (the commonsensical expectation is that the “jump” would occur between B and C, as one moves from incumbent control to contestation). The likelihood of insurgent violence when one moves from a hamlet C to D is 75 times greater. This “jump” is somewhat smaller when one introduces additional controls (Model 2).

²¹ The introduction of controls in this case was done inductively, as neither of us had strong prior beliefs about which factors *beyond* control should be predictive of selective violence. Moreover, we were not able to find indicators for two possible such factors. Social polarization in the case of Vietnam is not effectively captured by patterns of land tenure which changed a lot during the war; we were also unable to identify indicators of political polarization independent of the conflict. The war's duration makes it very difficult to identify such an indicators.

Table 8: Determinants of Selective Violence

	Model 1	Model 2
Pacification Category B	33.957 (34.400)	26.670 (27.083)
Pacification Category C	28.444 (29.418)	14.814 (15.372)
Pacification Category D	76.312 (79.558)	24.250 (25.448)
Log of Distance to western border	4.242 (0.850)	2.220 (0.503)
Urban/Rural	3.537 (0.884)	3.660 (1.133)
Rough Terrain	0.968 (0.010)	0.975 (0.010)
GVN chief visits brief		2.451 (1.366)
GVN chief visits brief by frequent		5.033 (3.027)
GVN chief visits extended		5.761 (3.651)
GVN chief visits extended & frequent		8.274 (5.692)
GVN chief resides in hamlet		43.300 (35.650)
NLF forces present once		16.285 (6.676)
NLF force present sporadically		63.410 (40.478)
NLF forces present regularly		99.424 (91.734)
GVN Visit * NLF Present		0.794 (0.070)
Pseudo_R²	0.144	0.2975
N	3602	3597

MLE Logit estimates. All coefficients expressed as odds ratios. DV: Insurgent selective violence
% correctly predicted omitted because DV is a rare event.

Bold: $p < .05$, **Bold Italic:** $p < .01$

Somewhat surprisingly, urban status has precisely the opposite relationship with violence and control: holding the pacification index constant, urban hamlets were about 3.5 times more likely to have selective violence directed against resident officials; rough terrain is also negative and significant. In addition, three variables that arguably proxy for the accessibility of government officials and local notables to insurgent violence turn up highly significant. For each one-unit change in the log of distance to the western border, selective violence was between 2 and 4 times more likely. A six-category variable that measures the frequency and duration of official visits to the hamlets (up to residence in the hamlet) is highly associated with insurgent selective violence. Each one-category increase in the length and frequency of GVN official visits is

associated with a *much* higher probability of selective violence.²² Likewise, the presence of NLF forces in populated places has a *very* strong positive association with selective violence.²³

These results suggest a puzzle: where the presence of insurgents in a hamlet is well known enough to be coded as such by American district-level advisors, why would GVN officials repeatedly run the risk of entering such a place? The most likely answer is that control continued to be extremely fragmented in parts of South Vietnam during this period. Elliott (2003) shows that even when the NLF lost control over settlements, they were often able to maintain a foothold in small wooded “mini-bases” directly adjacent to populated areas. This may have given them the access they needed to kill officials whose identities were publicly known. If Kalyvas’ model is correct, however, access should not be enough to generate a logic of denunciation, and thus the targeting of civilians should be either indiscriminate or absent. On the other hand, since the targets were mostly public officials whose identity was a matter of (at least local) public knowledge, it is possible to conjecture that violence could be selective even in the absence of denunciations (assuming, of course, that no local collaboration was required for carrying out the assassination). Testing these hypotheses will be major focus of our future work using the HES. At the same time, this is a clear instance where systematic and detailed qualitative evidence is essential.

6. Dinh Tuong Province

6.1 Introduction to Dinh Tuong

Dinh Tuong province was a key battleground of the Vietnam War.²⁴ The province lies south of Ho Chi Minh City (then Saigon), between the Mekong River and the so-called “Plain of Reeds,” a largely uninhabited swamp that served as a key base area for NLF guerrilla units. The province was considered a major strategic objective for both the US/GVN and the NLF (Elliott 2003:xxii). Aside from its position along a main east/west line of communication (the Mekong), a long section of South Vietnam’s major Highway 4 ran through Dinh Tuong, linking the capital with the main food-producing regions of the country. About 5% of all casualties suffered by the US and GVN from 1965 – 1975 were sustained fighting over Dinh Tuong (Thayer 1985), making it the most lethal province in the southern part of the country. The physical terrain of Dinh Tuong seems to have been exceptionally unsuited to guerrilla warfare: it has literally no variation in altitude and very little forest (DMA Map NC48-07 1972). It was criss-crossed with irrigation channels, mostly non-navigable, and had few secondary roads. The province was intensively cultivated, mostly in rice. Land-tenure prior to the wars was highly unequal, though considerably less so than in other provinces of the Mekong Delta (Elliott 2003:27–28).

²² We suspect that the measure of selective terror is biased toward higher officials of the South Vietnamese government. Thus, the enormous effect for GVN chief’s residence in hamlet may be, in part, an artifact of the measurement procedure. However, the size of effect and the significance of lower categories of the index suggests that there is a real effect here as well.

²³ The presence of insurgents was probably not coded from the same information as the violence measure. A cross-tab of these variables shows that selective violence was directed against the officials of hamlets with *no* insurgent presence on 44 occasions.

²⁴ Under French colonial occupation, the province was called My Tho, after its capital and largest city. The South Vietnamese government renamed the province Dinh Tuong; following the reunification of Vietnam, the name was again changed, to Tien Giang.

6.2 Control and Violence in Dinh Tuong

In the years covered by the HES data, Dinh Tuong was a microcosm of the larger war, but at a higher level of intensity. The entry of the US 9th Infantry Division, in late 1966, created a stalemate of sorts in the big-unit war. American units patrolled incessantly, seeking contact with elusive NLF main-force guerrilla units. When contact was made, massive firepower and helicopter-borne infantry were rapidly brought in to “pile on.” At a tactical level, American forces generally held the upper hand. Nevertheless, these measures do not seem to have significantly affected NLF influence in the hamlets. In December of 1967, nearly a year after the commitment of US forces to the Mekong Delta, only about 15% of the settlements in Dinh Tuong were regarded by DSAs as “secure day and night”; over 70% were “contested”; and 12% were under “VC control” (HES 1967). Map #1 shows the spatial distribution of control over the province: small groups of “secure” hamlets clustered directly around the province and district capitals; the NLF securely controlled hamlets near the Plain of Reeds to the north and in the so-called 20/7 Zone in the south-central region; the remainder of the province was heavily contested.

Map # 1

On January 30, 1968, the NLF launched the Tet Offensive, a coordinated surprise attack on hundreds of US and GVN political and military targets all over South Vietnam. My Tho, the provincial capital of Dinh Tuong, was *the* principal strategic objective of the NLF in the Mekong Delta (Elliott 2003:XX). While the attackers were driven out of the city center within three days, they continued to occupy areas on the fringe of the capital for several months afterwards, engaging in crippling attrition battles against superior US and GVN firepower.

Although the initial Tet attacks proved unsuccessful in most places, the NLF stripped local guerrilla units of manpower to reinforce large-scale attacks against the principal cities. Dinh Tuong was particularly hard-hit in this regard, as large numbers of guerrillas were detached to support the attack on Saigon. Contemporaneous interviews with captured guerrillas and Vietnamese post-war histories fault the Front for failing to exploit its temporary advantage to destroy the local political and militia network in the countryside.

Map #2

In July 1969, when HES70 first came on line in Dinh Tuong, the majority of hamlets in the province were still considered to be outside the control of the government, with nearly 37% of all hamlets classified “D” on the pacification scale (see Map #2). However, the province underwent a substantial shift in control over the remainder of the year. By December 1969, over 55% of hamlets were classified “C” or higher. Aside from the Tet-induced manpower drain on local forces, three related factors seem to have been decisive.²⁵ The first was a massive counter-

²⁵ Elliott (2003:1138) denies the Phoenix Program had an important part to play in shifting control toward the GVN, though he acknowledges that it was active in the province during this period. He shares with many critics a conviction that Phoenix was ineffective because, “[it] degenerated into a morass of individual vendettas and settling

offensive by the US 9th Infantry Division, “Operation Speedy Express,” which claimed a body count of nearly 11,000 between December 1968 and June 1969.²⁶ This offensive was particularly lavish in its use of artillery and aerial bombardment, and it took a heavy toll on local guerrilla units.

Speedy Express forced the disaggregation of large NLF units, which allowed the government to resort to a second element of the pacification strategy: the re-occupation of previously evacuated areas of the province with an extensive network of militia posts (Elliott 2003, 1166). By June 1969, the government had over 50,000 men under arms in Dinh Tuong, including all army and militia units (Elliott 2003, 1171). Finally, the massive bombardments of the counter-offensive led to the depopulation of areas that had formerly been relatively secure zones of control for the NLF, reducing both the manpower and logistical resources from which the NLF could draw.

During the remainder of 1969 and all of 1970, the GVN consolidated its control over hamlets all over the province.²⁷ By July 1971, when data from HES71 first became available, 96% of Dinh Tuong’s hamlets were coded “C” or higher (see Map #3). Post-war Vietnamese histories are clear that 1971 was the nadir of the revolutionary movement (Elliott 2003:XX). NLF guerrillas were forced to retreat to fortified and bunkered bases in wooded clumps on the fringes of inhabited territory, and guerrilla tax revenue dwindled compared with earlier years.

Map #3

Another large gap in the data covers all of 1972. The Easter Offensive of that year forced Saigon to withdraw large numbers of troops from the Mekong Delta region to repel North Vietnamese regulars who almost succeeded in overrunning the defenders. According to Elliott (2003), the NLF in Dinh Tuong made a minor comeback in 1972, largely in big-unit battles involving North Vietnamese units brought from across the Cambodian border. Although the offensive failed to substantially reverse GVN gains in control from 1971, it paved the way for the Paris Agreements of January 1973 and final withdrawal of American troops from all of Vietnam. At the time of the ceasefire, over 90% of Dinh Tuong’s hamlets were classified “A” or “B” on the pacification scale. The GVN managed to reverse some of its losses from the previous year, and the trend is toward greater pacification through the final HES ratings we have available to us in January 1974.

Insurgent selective violence against GVN officials had already become a rare phenomenon in Dinh Tuong by the middle of 1969: approximately 2% of all hamlets had officials killed. The distribution of homicides once again seems to have been concentrated in hamlets at intermediate levels of control. In July 1969, most of the officials killed were from “D” hamlets (see Map #2), but by July 1971 most were associated with “C” hamlets, which is not consistent with our

of accounts, as well as an extortion program – activities which had gone on for time immemorial and were examples of a general abuse of power. A study of this program concludes that even if taken at face value, the actual operations of Phoenix personnel accounted for only 7 percent of all those killed or captured by U.S. – GVN forces.” Note that it does not follow from the corruption of the program and its low proportion of total “neutralizations” that Phoenix was ineffective. Selective violence may be more effective not only because it gets the right people, but also because it creates the perception that the right people are being got (Kalyvas forthcoming).

²⁶ Elliott (2003) notes that only 751 weapons were captured as part of this campaign.

²⁷ The US 9th Infantry Division withdrew from Dinh Tuong immediately following the offensive.

expectations. However, Map #3 tends to support the conjecture about access discussed in Section 5.2, above: three of the five murder victims in this month were from hamlets directly adjacent to “D” hamlets, and a fourth was from nearby.

6.3 Multivariate Analysis of Control in Dinh Tuong

In this section, we test the model of GVN government control from the Section 5.2, above, on a cross-section, time-series covering July – December 1969 and all recorded hamlets in Dinh Tuong province; the results are shown in Table 9. Unfortunately, the question used to indicate control in the 1972 data was not yet asked in the HES70 questionnaire. We have collapsed the six categories of the pacification index into a binary indicator.

We use two estimating methods. The first is a pooled logit with Huber/White standard errors, clustered on the hamlet index. The second is a Generalized Estimating Equations (GEE) population-averaged logit, assuming a within-group autoregressive correlation structure. In both models, we include monthly dummy variables to control for the expected inter-period trend toward greater government control.

The results of the two models are extremely similar, and in general they confirm the results of the cross-sectional analysis of Vietnam as a whole in January, 1972. Indeed, the fit for Dinh Tuong province is better and most of the effects are somewhat stronger.

First, the time dummies are in the expected direction, and all but one are statistically significant. This is a useful validation of the data, given that qualitative accounts point to a strong pro-government trend in control. The effects of urbanization for Dinh Tuong are enormous: all things equal, an urban hamlet was 14 times more likely to be controlled by the GVN than a non-urban hamlet. Likewise, the largest hamlets in the province were 3.6 times more likely to be government-controlled than the smallest.

An average hamlet with widespread television ownership was 6.7 times more likely to fall in the government column than a hamlet with only moderate levels of TV ownership.²⁸ Poverty had a much stronger association with lack of government control in Dinh Tuong than in the January 1972 Vietnam sample. Hamlets needing the most assistance were 18 times less likely to fall under government control than the next lowest category of need.

Both of these effects are vulnerable to arguments for endogeneity. Elliott (2003) argues convincingly that economic conditions in regions of Dinh Tuong controlled by the government were better than in NLF zones throughout the Vietnam War, largely because those regions were more open to currency-based trade. The NLF tried (unsuccessfully for the most part) to maintain autarky in zones they controlled (check details). Furthermore, economic development was one of the main post-pacification goals of American policy in Vietnam. In other words, assistance may be indicating the prosperity of pacified zones rather than the rebelliousness of impoverished areas. While television was certainly a measure of prosperity, it was exclusively an instrument of government influence, and we might expect the NLF to keep televisions out of their zones. As of yet, we have found no concrete historical evidence to support this conjecture.

²⁸ Radio ownership also was not coded for the 1969 period.

Table 9: Determinants of Control
Dinh Tuong Province, July – December 1969.

	Model 1	Model 2
August	-0.096 (0.093)	0.894 (0.061)
September	-0.369 (0.121)	0.674 (0.064)
October	-0.307 (0.135)	0.720 (0.074)
November	-0.290 (0.143)	0.734 (0.081)
Decmeber	-0.481 (0.150)	0.607 (0.080)
Log Population	-0.317 (0.094)	0.633 (0.074)
Urban	-3.167 (1.115)	0.070 (0.076)
Meters to Cambodia	-0.0001 (0.00002)	0.9999 (0.00005)
Meters to N. Vietnam	0.0001 (0.00003)	1.0001 (0.00005)
Low TV Ownership	-0.819 (0.195)	0.440 (0.106)
Med. TV Ownership	-1.330 (0.412)	0.147 (0.085)
Few Require Asst.	0.509 (0.156)	1.438 (0.315)
Some Require Asst.	2.248 (0.293)	9.896 (5.023)
Most Require Asst.	2.768 (0.640)	18.801 (14.995)
Hao Hao	-0.395 (0.362)	0.841 (0.379)
Catholic	-0.663 (0.479)	0.806 (0.506)
Cao Dai	-0.663 (0.399)	0.730 (0.348)
Constant	-69.011 (17.228)	--
N	2612	2612
P	0.654	0.23
Pseudo-R²		
Correctly Predicted	71%	72%

Dependent Variable: binary pacification score (A, B, & C = 0; D, E, & V = 1)

Model 1: Generalized Estimating Equations (GEE) logit with correlation structure AR(1).

Model 2: Logit with Huber/White standard errors clustered on hamlet. Coefficients in odds ratio.

Bold: p < .05, **Bold Italic:** p < .01

The spatial measure for the western border is statistically significant and substantively influential. The hamlets furthest from the Cambodian border were about 7 times as likely to be under GVN control than those closest to it. This result is consistent with evidence that Dinh Tuong was a major transshipment area for military equipment and manpower: “My Tho and the

Plain of Reeds [were] the crucial lifeline connecting Hanoi and the rear base of COSVN²⁹ in Cambodia with the Mekong Delta” (Elliott 2003, 1153).

Somewhat surprisingly, the measure of distance to North Vietnam is significant but points in the opposite of the expected direction: the hamlets furthest from North Vietnam were 4 times less likely to be government-controlled than those closest to the North. In this case, north/south distance may be acting as a proxy for the 20/7 base area along the Mekong in the southern part of the province. These results are promising, but point to the need for a more complex modeling of the spatial structure of the war in Vietnam.

Finally, in Dinh Tuong all of the indicators for minority religious sects are statistically insignificant. These groups were present in Dinh Tuong, but ethnicity does not appear to have been an important covariate of control, at least in 1969.³⁰

Conclusions

The Hamlet Evaluation System is far from a perfect dataset. A key problem for our analysis of violence is the absence of data on incumbent violence.³¹ Additionally, we do not know whether and how much DSAs purposefully miscoded data to bolster the chances of their promotion. Finally, we don't have a way as yet to address the issue of endogeneity of violence and control. Violence is used to generate control, and levels of control affect the intensity of violence. Contextual qualitative evidence make it possible to disentangle the relation between violence and control through sequencing (Kalyvas forthcoming). The absence of such evidence in this case means that we must look for an instrument. Yet, in spite of these problems, HES is a unique dataset that has the potential to take the study of civil war dynamics to a completely different level.

²⁹ The communist Central Office for South Vietnam.

³⁰ There were no Montagnard villages in Dinh Tuong, and no religious sect accounted for more than 5% of the total hamlets in the province.

³¹ There are just a couple of questions about GVN “misconduct.”

Addendum on Ethnicity, Geography and Control.

Our paper gives some qualified support to the view that minority ethnic group membership may have played an important role in promoting government control at the micro-level in Vietnam. If this finding holds up upon further analysis, it is an interesting result in and of itself, as it tends to undermine a sharp distinction between ideological and ethnic civil wars.

The Hoa Hao religious minority was not a significant predictor of government control (in either direction) in Dinh Tuong province, and all Hoa Hao hamlets were left out of the 1972 cross-section (because Hao Haoism existed only in the southern Mekong Delta region of Vietnam). However, in other cross-sections, Hoa Haoism has at least as powerful a positive association with GVN control as Catholicism.

Seeking to gain further purchase over the mechanisms that linked ethnicity to GVN control, we engaged in some barefoot inductivism using GIS tools and uncovered a striking finding that would be virtually impossible to recognize using any other methodology.

The Mekong Delta is depicted in Map #4, from the point where its two main channels flow into Vietnam across the Cambodian border down to their egress to the South China Sea. In Map #5, we have plotted the pacification variable used in some of the cross-tabs and parametric models in the paper, with A, B, and C collapsed into one category and D, E, and VC collapsed into a second. Visually, it is quite evident that government control is endogenous to the river network, at least in part, something that would be extraordinarily difficult to show parametrically.

Map #6 depicts the spatial dispersion of South Vietnamese hamlets that were coded as predominantly Hoa Hao (Hoa Hao hamlets are red, non-Hoa Hao hamlets are blue). The map suggests that the spread of Hoa Haoism was *also* endogenous to the river network.

Two possible causal pathways suggest themselves. The first (and more plausible) is that the observed statistical relationship between Hoa Haoism and GVN control is spurious: both are caused by the underlying variable of geography. The second possibility is that geography indeed determined the spread of Hoa Haoism, while Hoa Haoism determined government control (through, e.g., an organization capable of competing with the NLF for adherents or the maintenance of ethno-religious militias).

To test this conjecture, one would need to determine if Hoa Haoism is associated with government control in the unusual areas of Hoa Haoism that are off the main channels of communication, a tricky proposition, since smaller rivers and roads can also act as lines of communication sufficient to both propagate the religion *and* sustain or enhance government control.

The result is important to the study of ethnicity and violence because it has implications for the claim that group geographical dispersion is a cause of violence. If civil war processes and ethnicity are both endogenous to geography, then the group dispersion claim may be missing the real mechanisms that explain the association.

Appendix I

Hamlet level variables (Partial list)

Visits by US advisory personnel
Visits by the GVN district chief
Physical control by enemy forces
Enemy-initiated action against local security forces
Level of enemy-initiated military activity
Presence of enemy military forces
Attempts of selective terrorism against GVN officials, prominent residents, or local leaders
Incidents targeted against GVN non military activities (projects, offices, etc.)
Enemy propaganda meetings held
Incidents of personal misconduct involving local security forces
Contact with enemy forces
Civilian casualties as a result of military activities
Civilian casualties as a result of friendly military activities
Physical damage as a result of friendly military activities
Impact of military activity
Population movement into the hamlet
Population movement out of the hamlet
Source of information for the hamlet
Does the district chief agree with responses reported by the DSA?
Status of enemy infrastructure
Collection of taxes by the enemy
Participation of hamlet households in enemy-organized non-military activities
Who conducts security operations
Security operations during daylight hours
Security operations during hours of darkness
Enemy agents move with relative freedom during darkness
GVN administrative personnel unable to move with relative freedom during daylight
Households with members in the PSDF
Activity of the PSDF
Residents who are prime VC targets sleep at home
Performance of PSDF
Adequacy of local security forces
Who enforces the law?
GVN enforces the law during daylight
GVN enforces the law during darkness
Presence of the police or the NPFF
Curfew established for inhabited areas?
Curfew established for surrounding areas?
GVN hamlet chief?
GVN hamlet chief regularly present?
GVN hamlet chief's visits
Hamlet representation at village council meetings

Hamlet households with members in enemy service
Hamlet households with members in GVN service
Participation in non-VC civic or religious activities
RD cadres present
Effect of RD cadre presence
Gieu Hoi cadre
GVN static visual displays
TV set ownership
Attendance at GVN-sponsored meetings
Radio ownership
Market in this hamlet?
Travel to and from by motorized vehicles
Households own motorized vehicles?
Participation in GVN-sponsored economic development programs
Participation in Self-development projects
Self-development projects underway?
GVN medical services accessible?
GVN health workers visit the hamlet?
Children attend primary school?
Primary school sanctioned by GVN?
Lack of teachers?
Absence or overcrowding of facilities?
School attendance restricted because of security conditions?
Households requiring assistance from others to maintain themselves at subsistence level?

Appendix II

The HES spatial locator was created in the modified Universal Transverse Mercator (UTM) system favored by the United States Army at the time of the Vietnam War, the Military Grid Reference System (MGRS). Transverse Mercator projections are based on a central meridian, and they are reasonably accurate outside the polar regions and within 3° of longitude east or west of the central meridian. UTM is a system of 6° zones based on a set of standard central meridians, each identified by a two-digit zone number, together with a set of one-letter zone characters that uniquely identify 8 degrees of latitude. The east-west coordinate is measured from the central meridian (usually with a 500,000 meter false easting to avoid negative coordinates); the north-south coordinate is measured either from the equator or from the southern boundary of the latitude zone. All coordinates are in meters.

The MGRS further identifies locations using 100 X 100 km. grid squares designated by 2-letter combinations that repeat in a uniform pattern over the earth's surface. Locations are then identified by meters west and north from the eastern and southern boundaries of the grid square, respectively. Thus, an example of an MGRS coordinate from southern Vietnam is: 48QYD454535, where "48" is the zone number, "Q" the zone character, "YD" the grid square, "454" refers to 45.4 km. east of the western boundary of the YD grid square, and "535" is 53.5 km. north of the southern boundary of the YD grid square.

Fortunately, for our purposes, all of Vietnam is about 6° wide, which greatly simplifies the task of calculating east-west distances. Unfortunately, Vietnam is also divided between UTM zones 47 and 48, which complicates measurements. To remedy this problem, we reprojected all hamlet and village centroids into a Transverse Mercator projection with the central meridian at $106^{\circ} 30' 00''$. To further simplify measurements of distances between grid squares, we re-calculated all gridded coordinates into distances from the equator and the central meridian, in meters, once again with a 500,000 meter false easting to eliminate negative coordinates.³²

The HES documentation does not identify the datum and spheroid on which the locator variable is based. However, the Indian 1960 datum and the Everest Spheroid were the designated standard of the United States Army in this region during the Vietnam War (US DOA, 1967). Furthermore, all the military maps of Vietnam from the period I have seen are based on this model of the earth's shape.³³ It seems reasonable to assume that the HES was based on the same standard, and I have done so in all calculations and reprojections using these data.

Data on the locations of the Vietnam/Cambodia and Vietnam/Laos borders were derived from the Digital Chart of the World (DCW), an Environmental Systems Research Institute, Inc. (ESRI) product originally developed for the US Defense Mapping Agency (DMA) using DMA data. DCW includes a map layer of first-level political boundaries, defined as polygons.³⁴ We

³² The projection and coordinate transformation can be performed easily using a National Information Mapping Agency (NIMA) freeware utility called "GEOTRANS," available for download at: <http://164.214.2.59/GandG/geotrans/geotrans.html>.

³³ See <http://www.nexus.net/~911gfx/sea-ao.html> for very high quality examples of 1:250,000 US Army maps from the Vietnam War.

³⁴ The Pennsylvania State University Library has modified DCW and made it available for web download at <http://www.maproom.psu.edu/dcwl/>.

re-projected the DCW boundaries into the Transverse Mercator projection described above. No official border between North and South Vietnam was ever agreed upon. The parties to the 1954 Geneva Conference decided upon a provisional military demarcation line, with a four-to-six mile demilitarized zone (the infamous "DMZ") to either side. We hand-drew the demarcation line, following the course of the Song Ben Hai river, as it appears in DCW data, and as further described in the terms of the 1954 treaty (The Geographer 1962). All point-to-boundary measurements were made using the ESRI GIS software *ArcInfo*.

We constructed terrain measurements by querying a 1 X 1 km. grid database, projected as above, at each hamlet and village centroid, for the standard deviation of the 3 X 3 km. grid square surrounding the grid square containing each centroid.³⁵

³⁵ For technical details on the construction of the terrain model, see (Kocher 2003, Ch. 2).

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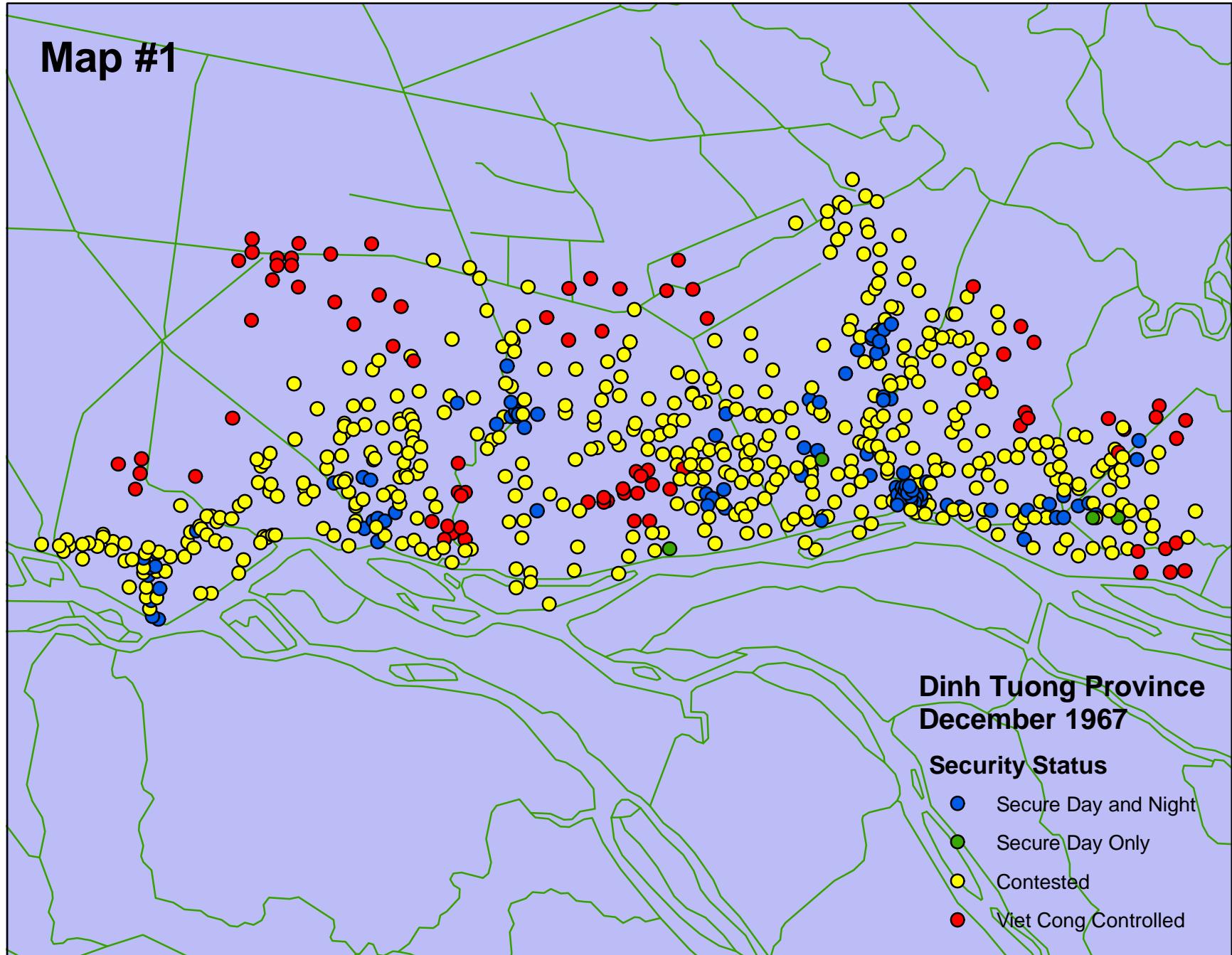
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Map #1



Dinh Tuong Province
December 1969

Map #2

X Selective Violence

Pacification Status

- A
- B
- C
- D
- E

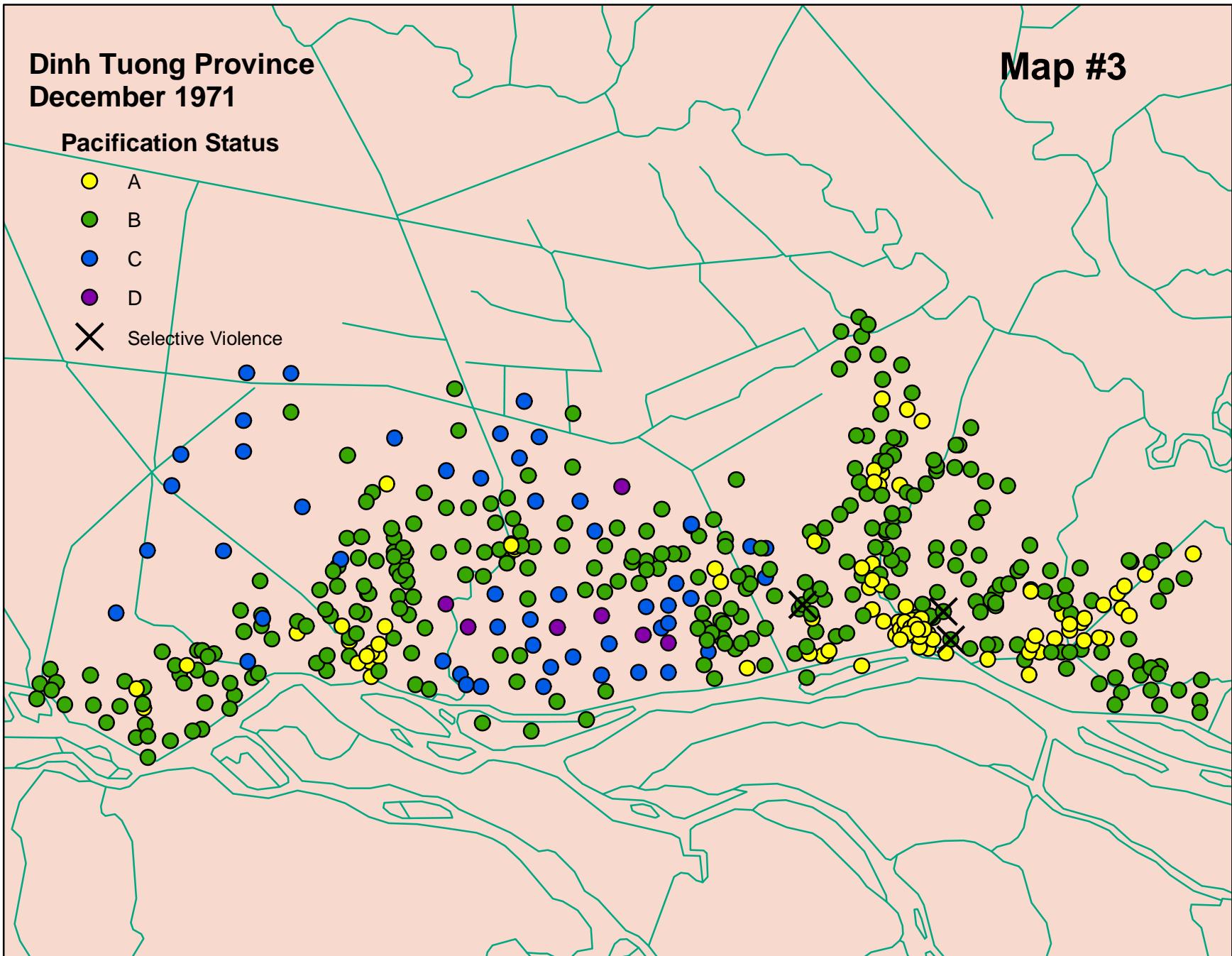
VC

Dinh Tuong Province
December 1971

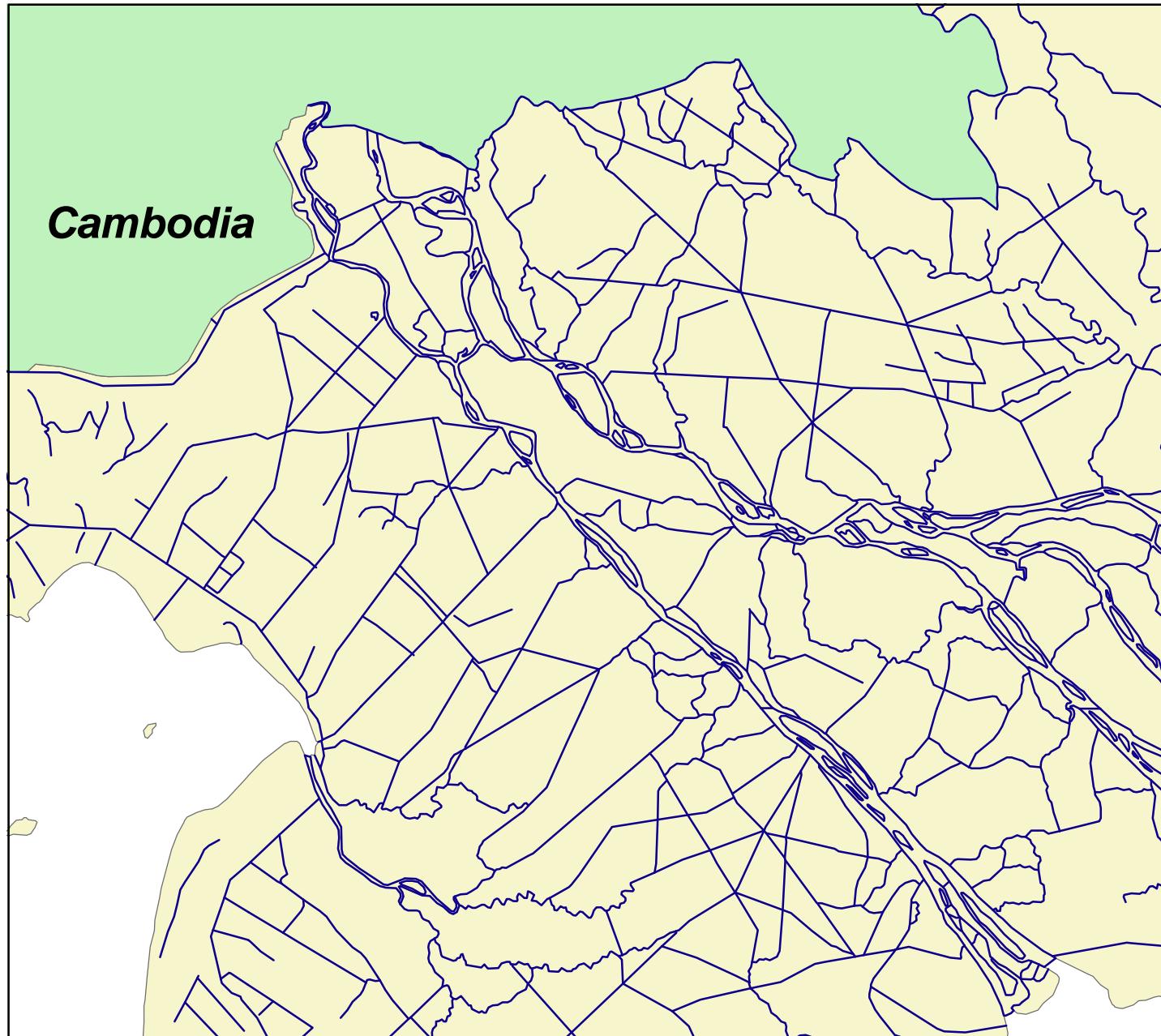
Map #3

Pacification Status

- A
- B
- C
- D
- Selective Violence

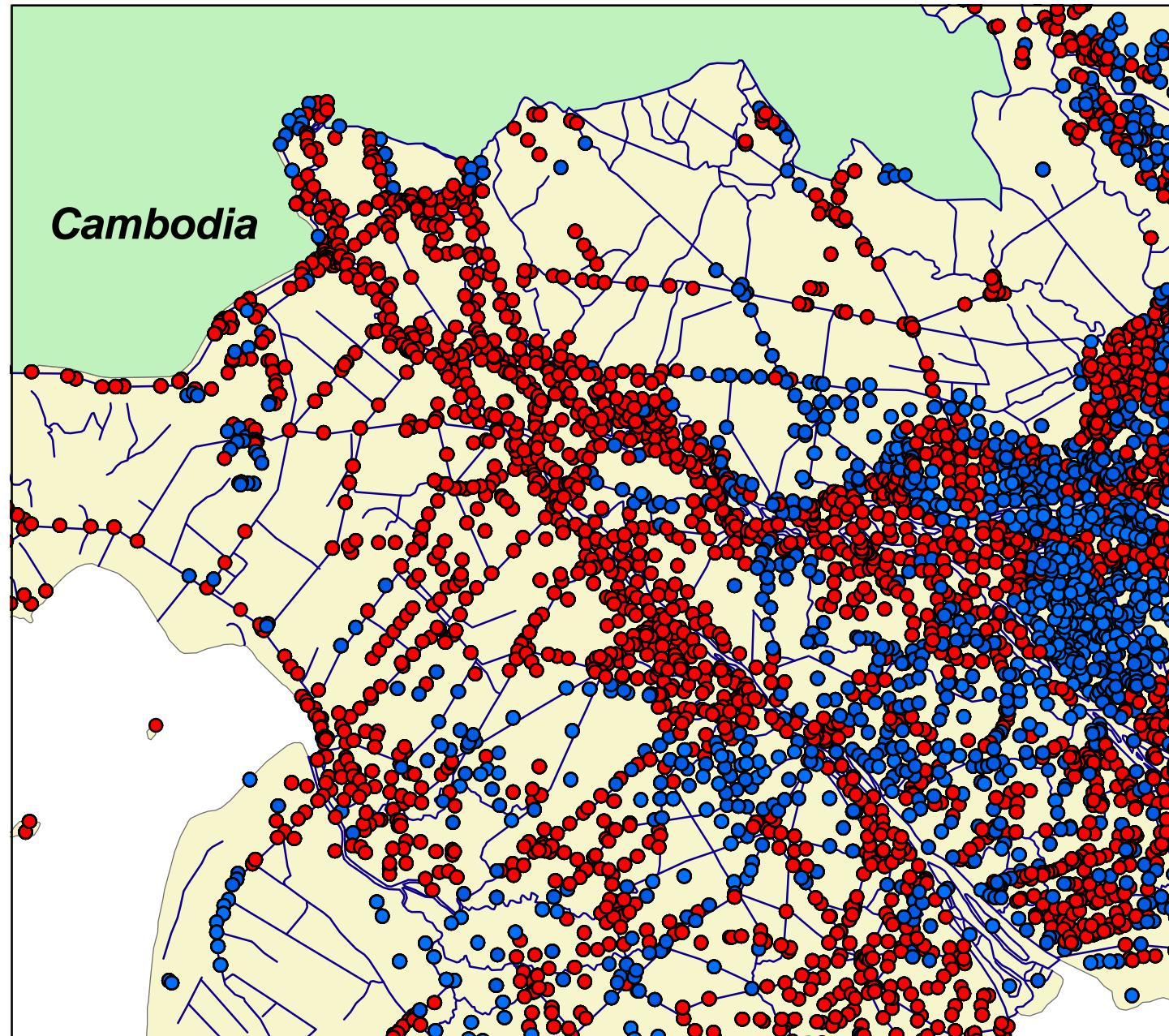


Map #4

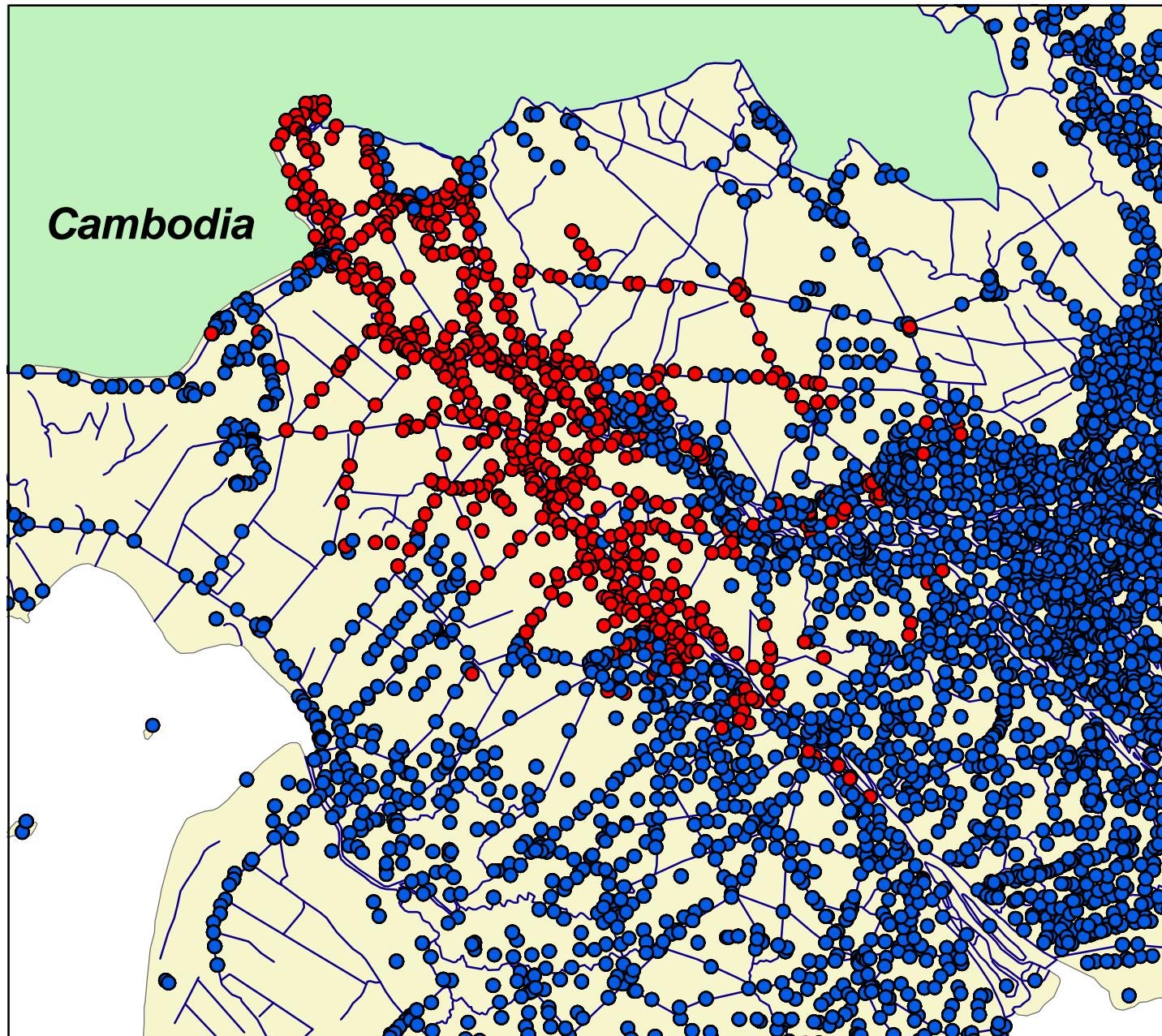


Mekong Delta, 1969

Map #5



Map #6



Mekong Delta, 1969

- non-Hoa Hao
- Hoa Hao