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Opportunity, Democracy and Political Violence: A Sub-national Analysis of Conflict in Nepal

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ABSTRACT
With more than 8000 deaths in eight years, a Maoist insurgency, reinforced by ethnic cleavages, has resulted in substantial levels of political violence in Nepal. With fresh district-level data, and drawing on theoretical insights from both the conflict and human rights literatures, research that has relied primarily on cross-national comparisons, we develop and test hypotheses using a sub-national research design. We find support for "opportunistic" strategic interaction between government and opposition. Opportunity is conceived geographically, politically, and internationally, and our findings contribute new evidence for the importance of geography but also of democracy in their effects on the levels of violence used by both government and opposition.
Opportunity, Democracy and Political Violence: A Sub-national Analysis of Conflict in Nepal

Over the last decade Nepal has experienced both a faltering transition towards democracy and the rise of insurgency. A new constitution established a constitutional monarchy and parliamentary democracy, legalized political parties, and permitted competitive elections. The 1999 elections generally conformed to international standards. Yet during this democratization, the state has been seriously weakened by violence at the top and from below. King Birendra and nine members of the royal family died in a domestic killing spree in 2001. His brother, King Gyanendra, replaced him on the throne, and faced a “People’s War,” a Maoist rebellion that spread to involve most of the country by 2002. While this conjunction of regicide and insurgency is particular to Nepal, the complicated and even paradoxical relationship between democracy and political violence is found from Algeria in the 1990s, to Peru in the 1980s and 1990s, back to the rise of fascism in the 1920’s and 1930s. In 2002, the king suspended parliamentary democracy and dismissed the prime minister.

What explains political violence? How does the use of violence by the state relate to the threat posed by the opposition? What conditions favor the use of violence? What role does democracy play? These questions bring together two separate streams of research on civil wars and human rights violations. In explaining the state’s resort to substantial violence against its own citizens, conflict scholars have examined social,
ethnic, and economic cleavages (Gurr 2000; Harff 2003; Muller 1985), and more recently the political opportunities for insurgency (Collier and Hoeffler 2001; Fearon and Laitin 2003; Ron 2001). Human rights (“physical integrity rights”) scholars have examined institutional factors, notably the presence of democracy as well as the level of threat to the government posed by the opposition, to explain why governments resort to violence (Cingranelli and Richards 1999; Gartner and Regan 1996; Henderson 1991; Keith 1999; Poe and Tate 1994). The explanation advanced here builds on parallel insights in both research areas. We begin with the standard assumption that both government and opposition seek power and examine the strategic interaction and circumstances of both opposition and government. From the conflict scholars, we have ideas about the strategic conditions favoring insurgency, and from the human rights scholars we have ideas about how the government will respond as the insurgency escalates and international and domestic costs and restraints (democracy) are brought to bear.

Both conflict and human rights scholars address these questions about the state’s use of violence using cross-country data. Here we approach these questions with a different research design. We analyze new sub-national data, which, while generally reducing the number of observations allows the combination of systematic methods with the detailed and nuanced information usually only available in qualitative case studies. Varshney (2002) has recently demonstrated the power of this type of design in his examination of the influence of social capital on ethnic violence in India. Our data permit the inclusion of important control variables that have not been readily available for the testing of the conflict and human rights models, and the dependent variables are the amount of killing by both the insurgents and the state rather than a simple binary
onset of conflict variable, or the content-analysis based ordinal rankings of violations generally used in human rights research. Measurement is facilitated by relying on single sources for our units of comparison and the sub-national design controls for heterogeneous cross-country and international factors, as recent cross-cultural survey research methodology suggests (King, Murray, Salmon and Tandon 2003). Even if the left-hand side variable is comparable, and most cross-country human rights and conflict research use some standard “cut-points” for the binary or ordinal variable, when we think about the operation of the right-hand side variables we should not assume that individual policy makers in different states, no more than individual citizens responding to survey items, understand or perceive the information they receive in comparable ways. The heterogeneity in cross-cultural norms, institutional setups, and the unique historical experiences can produce different reference points or anchors. A lack of common anchor within the sample can bias the perception of threat, and hence the measurement of such variables. Consider the stimulus represented by opposition activities. Even when the measurement of the stimulus is as precise as information about opposition killing, it may not be a cross-culturally common and uniform stimulus. Cultural and historical differences may influence the perception of acceptable levels of violence. In the survey research field, King et al. (2003), recognize this as a Differential Item Functioning (DIF) problem, and offer measures to solve it through survey instrumentations. We avoid this problem by using sub-national data. We begin by discussing the theoretical argument and hypotheses, then describe the data and measures and present our results.

Theoretical Argument
A variety of quite different research programs have converged on the concept of political opportunity as a critical concept in understanding political behavior and public policy. Public policy initiatives depend on “policy windows” opening, which provide opportunities for action. These windows may result from shifts in administration or from events or problems developing that demand a response from government and create an opportunity for acting on policy proposals already available in the policy community (Kingdon 1984). In explaining the mobilization of social movements, Tarrow focuses on political opportunity structures, which are conceived as resources external to groups, including shifts in access to power and in ruling coalitions (Tarrow 1994, 18). In the analysis of insurgency, scholars emphasize the “importance of opportunities for rebellion” (Collier and Hoeffler 2001; Collier and Sambanis 2002, 4). Ron uses a combination of ideological and political opportunity approaches to understand the political violence of the Maoist Sendero Luminoso insurgency in Peru (2001). Fearon and Laitin (2003) explain the onset of civil wars and insurgency using the opportunities or propitious conditions that improve the chances of a successful rebellion. In addition to poverty, political instability and the newness of the state, their most interesting result is that mountainous terrain is significantly related to the onset of civil wars (Fearon and Laitin 2003, 84). In contrast to other conflict scholars (see Russett and Oneal 2001, 70), they do not find that democracy influences civil war.

Windows, opportunities or favorable conditions, the theoretical assumption common to these research programs is that there are always reasons for action, either by the government as a policy, or by citizens in nonviolent or violent opposition to government. Ethnic grievances, greed, and political ambition are perpetual, general, and
part of the human condition. What are variable are the circumstances that improve the chances for successful action, both circumstances that affect the government and circumstances that affect the insurgents or opposition. With conflict, geography and the relative weakness of the state are important components of explanatory models (see Fearon and Laitin 2003; Gates 2002).

The standard model used in human rights research includes both economic and political variables (Cingranelli and Richards 1999; Henderson 1991; Mitchell and McCormick 1988; Poe and Tate 1994). In this model, economic scarcity, as measured by per capita income, is expected to increase the level of political tension and the likelihood of resort to violence by rebels and then by the government (Mitchell and McCormick 1988, 478). The most stable findings are that democracies tend to experience lower levels of state killing, torture, and imprisonment, and that civil and international warfare tends to increase the likelihood of these sorts of violations. While the warfare finding may seem definitional to conflict scholars, it is interpreted as a severe threat to governments and this interpretation importantly moves analysis in the direction of understanding state repression and killing as the outcome of strategic interaction with opposition groups.

Significant progress in this analytical direction is clearly presented in studies by Lichbach (1995) and Gartner and Regan (1996). Gartner and Regan argue that governments calibrate their repression to the level of opposition threat, and that “failure to control for the violent nature of political dissent” accounts for the “limited success” of the earlier research. Their empirical model uses data for Latin American countries. They construct an ordinal ranking of political repression and an ordinal measure of “opposition
demands.” They do not have a direct measure of opposition activity, and as they point out they do not include control or “contextual variables.”

Both streams of research converge on the importance of strategic interaction with the opposition in understanding the use of violence, and both have taken important steps in empirical modeling. Conflict scholars have employed a fuller range of control variables. They have included the strategic conditions that can support opposition and insurgent activity, leading to some variation in the way variables are interpreted. For example, Fearon and Laitin see their theory as Hobbesian rather than economic (2003, 76), and while per capita income is included in their model, it represents a proxy for the relative weakness of the state.

One way to conceive a more unified theoretical approach would be to think about the state’s as well as the insurgents’ opportunities for violence. This implies that the state as well as the insurgents requires the opportunity to use violence. The policy window for repressive policy is opened by insurgent use or likely use of violence. Violent reprisal, even in democratic states, is acceptable if it is in response to violence, plausibly provoking further aggressive moves by the insurgent opposition in a tit-for-tat sequence. The state’s policy window is shaped by institutional and international factors. Democratic conditions hold state officials accountable for their actions and likely restrain officials from disproportionate responses. Democracy narrows the policy window for violence. While international conditions, notably the actions of transnational groups and organizations with human rights agendas (see Keck and Sikkink 1998), are generally conceived to raise the costs of state use of violence, or narrow the policy window in our terms, international conditions may also present an opening. The 9/11 attack on the
United States and the “war on terror” likely opened a policy window for increased state use of repression world-wide, and for an uncertain period shifted expectations about the permissiveness of the international system towards state use of anti-terror measures and consequent human rights violations.

By extension, we must also include the agent’s opportunities for violence. As with other public policies, there is a principal-agent logic at work in the use of violence. Members of repressive organizations, whether rebel or government, also can be expected to bring their selfish motivations to their work. In the previous studies, scholars have simplified analysis by assuming that “the act of repression has no utility” (Gartner and Regan 1996). The obstacles to moving beyond this assumption in empirical research are formidable, but likely to be worthwhile. Violent conduct is its own reward for some agents, referred to elsewhere as “entrepreneurial repression” (McCormick and Mitchell 1997, 514), and the incentive to engage in such conduct by members of the security services can be considered as prevalent and common a motivation as greed. Therefore the focus must be on the conditions narrowing the agents’ opportunity to use violence, that is to say the factors that facilitate or impair the political control of the bureaucracy of violence. The key advantage of agents over principals is information. Agents know better than principals the size of the threat that they face, they may be tempted to exaggerate the threat to attract more resources or achieve more freedom of action, and they know the methods they are employing to address the threat. Principal-agent logic (Arrow 1985; Banks and Weingast 1992) suggests that the major instruments of control are recruitment, appropriate compensation for the agents, and monitoring by the principals to correct for the information asymmetry that favors the agent. Democratic
conditions facilitate citizen complaints about agent behavior, as well as collective action
to systematically monitor police and security forces and pressure state officials to punish
this behavior. An example is the formation of the B’etselem human rights organization
in Israel. The quality of communication and information flow is likely influenced by
other factors beyond the ability of interest associations to form and operate and the
evidence of an active and participatory citizenry. Gates, in his examination of the
“microfoundations of rebellion,” argues that geography “is a fundamentally important
variable for understanding the supervision, oversight, and control of a rebel organization”
(2002, 113). It is plausible that political as well as geographical arrangements influence
the flow of information.

These theoretical considerations imply some testable hypotheses. As rational
choice scholars suggest, government and insurgent use of violence are related. The use
of violence by one side provokes a violent response from the other side, both as
punishment for past violence and as a deterrent for future violence:

\[ H1: \text{Government violence increases with insurgent violence.} \]

Fearon and Laitin (2003, 80) argue, there are always grievances, but not always
conditions that make insurgency feasible. They specify and test the importance of
geography and mountainous terrain. Further, as Gates (2002) argues, geographical
distance influences the ability to control agents. He is concerned with how rebel
organizations maintain allegiance, but also affected is the ability of the principal, whether
rebel commander or state official, to ensure that agents do not use violence for their own
ends. Distance alone does not necessarily attenuate communication. For example, in
Nepal communication with the capital Katmandu is relatively easy over long distances on
the plains, or “Terai,” bordering India in comparison to the deceptively shorter distance in the rugged, inaccessible, high altitude regions. We conceive elevation as representing a measure of the ease of communications as well as factor encouraging insurgency. These considerations lead to the following hypothesis:

\[ H2: \text{The intensity of violence varies by mountainous terrain.} \]

Institutional factors are theoretically justified in the model as they increase or constrain the state and its agents’ opportunities for violence. Democracy and good communications improve the flow of information about the use of repression and constrain opportunities for political violence. State officials are sensitive to higher degrees of accountability and insurgents are more likely to be inactive in these areas where the citizens are actively engaged in political participation. These citizens are less likely to represent a conducive environment for insurgent activity and recruitment.

\[ H3: \text{The higher the level of political participation the lower the level of violence.} \]

Research suggests (Putnam 1993; Varhney 2002) that an important component of effective democratic accountability is social capital and the engagement of citizens in organizations at the community level, and that this has implications for levels of political violence present in communities. A community endowed with a high level of social capital fosters values of trust and cooperation, which encourages improved levels of local governance (see Putnam 1993). Geographically, Putnam divides the “Hobbesian” south of Italy from the cooperative north. Our hypothesis is that higher levels of social capital create both fewer opportunities for insurgents and better managed and controlled state security forces. As a result of the significant presence of collective action, there are likely to be higher levels of informal monitoring of the state’s security agents. We expect
a negative relationship between social capital and state and insurgent killing. Areas with high levels of social capital will increase the accountability of state officials and again deter insurgent activity.

\[ H4: \text{The higher the amount of social capital the lower the level of violence.} \]

Consistent with \(H3\) and \(H4\), we examine three measures of democracy: participation, social capital, and an interactive measure of participation*social capital. We include ethnic diversity, population density, and a poverty ranking index as control variables in the analysis.

**Data Description and Variable Definition**

Nepal is an extremely poor country of some 23 million people, 80 percent dependent on subsistence agriculture (United States Department of State, 2003, 1). The violence has resulted in about 8,000 deaths; about two thirds of the dead are thought to be non-combatants, most of whom are killed in the “cross-fire” (Gersony 2003, 74). The country is divided into 75 districts and these districts represent our units of analysis. The violence data are killings by the government and by the Maoist insurgents in each district and are obtained from Informal Sector Service Center (INSEC),\(^1\) a human rights NGO in Nepal. The Informal Sector Service Center (INSEC) was founded in 1988 to advance human rights in Nepal. INSEC is an independent, non-profit-making and non-partisan human rights organization. It is based in Kathmandu and has branches in all regional centers of Nepal.

The violence data includes both combatant and civilian deaths. INSEC has been collecting this data from the beginning of the conflict between the rebels and the state. The conflict began on February 13, 1996 when the Maoists attacked police posts in Rukum, Holeri and Sindhuligadi.\(^2\) In this paper, we aggregated 1996 and 1997 violence data into a single year (1997) as a yearly break down is not available. The description of the variables and their sources are presented in Table 1.

Table 1 about here

Above the district level, the country is divided into five development regions. Each region includes all types of terrain and has on average 15 districts. Region one is in the East and region five is in the far West. Our other geographic measure isolates the mountainous nature of the terrain. Elevation is captured by three dummy variables. The highest terrain, the Himalayan range bordering China, is ELEV1. The middle hills range is ELEV2. ELEV3 are the plains bordering India, representing a fertile belt running east to west. This belt, about five hundred miles in length, is the most densely populated and most urban area of Nepal.

To measure democracy we use both participation in the May 1999 parliamentary elections and a measure of social capital. Participation is the percentage turnout in each district. The election was for the lower house of the Nepali parliament (205 single-member constituencies) and the overall turnout was 66 percent. We calculated a social

\(^2\) Time Line of Maoist activities (Nepali Times, May 26, 2003)
capital index ($SOCIALCAP$) from the Nepal Living Standard Survey (NLSS) data collected by Central Bureau of Statistics. The Nepal Living Standard Survey (NLSS) 1995/96 consists of a comprehensive set of data on different aspects of household welfare. It was a joint project of the Central Bureau of Statistics (Nepal) and the World Bank. The survey was based on the national sample of 3373 households.³

In addition to the household level information, the NLSS survey contains community level information as well. The community (ward) level data aggregated to the district level, the level for which we have the participation and violence data, provides the information about the presence of the social networks in the community. In the NLSS survey six different types of the social organizations/networks have been reported at the community level. They are forest user groups, farmers’ groups, water user groups, women’s groups, a credit group, and an ‘other’ group. For all types of organizations, the following four categories of information are recorded: years in operation, number of households involved in a particular organization, percentage of women members, and the average numbers of meetings per year. Using this information, a composite social capital index has been created for each category.⁴ Finally, these individual indices are aggregated to get the social capital index at the district level.⁵

We control for ethnic differences (ETHNICITY), population density. Nepal is culturally very diverse with close to 50 different languages. The dominant language is

³ The original sample size for NLSS was set at 3388 households and the actual sample size was 3373, 15 less than planned. Central Bureau of Statistics (1996): Nepal Living Standards Survey Report 1996, Main Findings, vol. 1, CBS, Kathmandu, Nepal. The households were selected from 274 sampling units called wards. A two-stage stratified sampling procedure was used to select the sample for NLSS.

⁴ While creating such composite index, we followed UNDP’s HDI approach (UNDP, 1997: Human Development Report 1997, New York).

⁵ There are all together 75 districts in the country. Out of 75, two were not included in the NLSS survey due to low population. Those districts were Rasuwa and Manang. One more district, Dolpa, was also excluded during field visits (CBS, 1996).
Nepali and it is also the official national language. For a measure of ethnicity we use the percentage speaking languages other than the dominant language. The Maoists have emphasized the plight of ethnic minorities in their bid to overthrow what they term as the discriminatory feudal system, marrying an ideological agenda to an identity component. There is the hypothesis that civil wars over identity are more difficult to resolve than civil wars motivated by political and economic issues (see Licklider 1995). Prominent among the Maoists’ demands is land reform and redistribution. They also demand the formation of a constituent assembly to draft a new constitution. Their tactics primarily target the security forces, first the police force and then the army. They also kill civilians, local leaders and teachers, and NGO workers (see United States Department of State, 2003, 4). According to Marks, the conduct of the poorly trained police forces in some areas of the insurgency “thrust self-defense into the equation as a major theme for Maoist recruitment” (2003, 10). Maoists in Nepal have links to Maoist groups in India and have tried to learn from the experience of the Peruvian Sendero Luminoso.

We also control for (POPDENSITY), poverty (POVERTY), and government economic development allocations (GRANT). The district level poverty index is a composite index of six indicators including social, economic, gender and educational factors.6

6 The district level poverty index is a composite index of the following six indicators. 1) Child deprivation index: A composite index of child illiteracy rate, child labor rate, and child marriage rate; 2) Gender discrimination: A composite index of ratio of females to males among literate population of 15+ years multiplied by the sex ratio, and ratio of females to males among the population 15+ years engaged in non-agriculture sector multiplied by the sex ratio of the same age group; 3) Educationally disadvantaged ethnic group: The percentage of educationally disadvantaged ethnic population; 4) Population; 5) Landless and marginal farm households: household with farm size less that 0.5 ha as percentage of total farm households multiplied by the proportion of the agricultural labor force; and 6) Per-capa food production: Caloric values of food production divided by the rural population adjusted for adult equivalence.
Empirical Analysis

We begin our analysis by examining trends in the geographical distribution and intensity of political violence in Nepal over time. Figure 1 has two plots. The first plot clearly shows the progressive expansion of the conflict across the country. What began as a small insurgency in the mid-hills of Nepal, involving just a handful of Nepal’s seventy-five districts, had spread throughout the country affecting almost all districts by 2002. During 2003 there was a seven month ceasefire and the figure shows a substantial contraction in the areas affected by the killings. Both Maoist and state activities declined as negotiations were underway. Examining the second plot, the state contained its use of violence in rough proportion to the rebel use of violence until 2001. The second plot depicts a remarkably rapid escalation of violence in the country in 2002. By the end of 2002, the kill ratio was 5 to 1 in favor of the state. Those killed include civilians and prisoners. For example, on February 26, 2002, soldiers killed 32 workers in the district of Kalikot. The army claimed they were Maoists (see United States State Department 2003, 3). In August 2003, the army took 20 prisoners in a raid and summarily executed nineteen. One woman has not been found (International Crisis Group 2003, 5). In 2003, consistent with the geographical contraction of violence, the number of killings by both government and opposition forces declined sharply. These plots are consistent with hypothesis 1. What is particularly notable is that after the state sharply increased its use of violence in 2002 there was not a “ratchet-effect” that held the violence high no matter the activities of the opposition. Despite the well-known propensity of bureaucracies to
gather their own momentum and to drift, the state was able to adjust its use of violence downwards, as did the opposition in 2003.

Right after the events of September 11, 2001, the Maoists unilaterally broke off negotiations with the government and launched a major and successful attack on an army post in Dang (western Nepal). This surprise attack on the army was a turning point in insurgent tactics, and a direct challenge to the king, the army’s supreme commander. Meanwhile prime minister Deuba visited Washington, and obtained financial support ($38 million) from the United States to fight the insurgency. A state of emergency was declared in November 2001, and the Royal Nepali Army (RNA) took over responsibility for internal security from the National Police Force (U.S. State Department 2003). In May 2002, President Bush expressed support for the Nepalese government’s policy toward the insurgents. The Maoists were listed on the United States Department of State Terrorist Watch List (International Crisis Group, 2003, 4). In October 2002, the weakness of the state was again revealed when the king suspended parliamentary democracy and dismissed the government of prime minister Deuba.

With our yearly data, it is not possible to isolate the effect of these various factors and conditions on the rise in violence, but the use of more numerous and different state agents (the police, paramilitaries, and RNA) in 2002 and a facilitating international environment that signaled the opportunity for the state to use repression without expectation of international cost, coincides with a disproportionate state response to the increase in Maoist violence. On the other side, the increase in Maoist violence was consistent with the strategic planning of the insurgency, and with the very visible signals
of state weakness from the June 2001 regicide to the October 2002 dismissal of the government.

In 2003 both sides appear to have drawn back, as illustrated by the plots in Figure 1. The state forces are reacting more proportionately to the opposition violence. We interpret this as evidence of a shift in the international environment, a closing of the window for repression with renewed monitoring and pressure from human rights organizations, the European Union, and other governments. At the same time, the opposition has shifted their tactics from organizing general assaults on the security forces and government infrastructure to target killing.

Also consistent with the cross-national research (Fearon and Laitin 2003), Figures 2 and 3 show the relatively higher casualty figures for the hilly terrains as compared to the plains (Terai). The conflict began in a very remote, mountainous, and forested area with travel limited to tracks rather than roads. It was the army that built the first road in May 2003 (Gersony 2003, 7). In many hill districts, the insurgents have set up their local administrations and training camps in the more remote villages. Rugged terrain makes it easier for them to conduct hit-and-run campaigns against the ill-equipped and ill-manned police posts. The highest terrain, the high Himalayas, is unfit for large scale insurgent or government operations. As the figures suggest, the conflict is evolving and dynamic, and in 2002 killings increased over all types of geographical terrain, although the mountainous terrain saw the worst of the violence. Recently, with the breakdown of the ceasefire (January-August 2003), a change in Maoist tactics has been observed. They have switched from direct assaults on army and police headquarters to using smaller units and to carrying out assassinations in the plains and the large urban areas, including
Kathmandu (International Crisis Group, 2003, 6-7). In addition to the interplay of
government and opposition and the proverbial military propensity for the “high ground,”
what other factors systematically influence the use of political violence, and do the tit-
for-tat and geographical factors remain important after controlling for these other factors?

Qualitative analysis points to the nature of the terrain, but not to ethnicity or
inequality as significant factors. A report commissioned by the United States Agency for
International Development notes that “surprisingly for an area which has produced a
communist insurgency, there are few striking inequalities in land and other property
ownership” (Gersony, 2003, 9). The report points to government neglect, to continued
local grievances including the government’s 1970s ban on the production of hashish, and
a perceived decline in living standards (Gersony, 2003, 12-13). Consistent with the
opportunity approach, none of the grievances appear have represented a sharp shift in
local conditions or unique to the area in which the conflict began, but it was a location of
Maoist activity and a spiral of violence between political activists and security forces
preceded the beginning of the insurgency in 1996 (Gersony, 2003, 39).

For the multivariate analysis, we use the district as the unit of analysis. We
expect the counts of casualties by the Maoists and the state to be jointly dependent.
Consistent with the earlier research we postulate and test a tit-for-tat hypothesis. We
expect a positive association between the two joint count variables: government killing
and insurgent killing. We use a negative binomial model to estimate the joint process,
and the behavioral dependence is assessed through a correlation coefficient parameter.\textsuperscript{7}

\textsuperscript{7} Following Gurmu and Elder (2000), assume that the two joint count variables are Poisson distributed as follows:

\[ y_{i}\sim\text{Poisson}(\mu_{i},\nu_{i}) \]  \hspace{1cm} (1a)
Across all the models presented in Table 2 there is a moderate to strong relationship between insurgent and government killings, as hypothesized ($H1$). There is evidence of an exchange of violence between the government and the armed opposition, although the ratio of government to Maoist killing shifted sharply higher in the last year of the analysis. Examining Model 1A in Table 2, mountainous terrain (ELEV1 and ELEV2, with ELEV3 as the base category), is positively and significantly associated with violence. Supporting Hypothesis 2, both the hills (ELEV2) and the high Himalayas (ELEV3) have higher numbers of killings by both sides. After controlling for geography, social capital is negatively and significantly associated with both insurgent and government killing. Both sides appear to be inhibited in their use of violence in districts possessing higher levels of social capital ($H4$). Both control variables, population density and government grants also reduce the levels of violence. Higher values for population density reflect urban areas, and the negative result for this measure is further evidence of the rural nature of much of the violence. The government grants result is in the direction expected, but there is an alternative interpretation of this result to one of government neglect. Gersony says that at least for the six districts that were the focus of his analysis, “the Maoists refused to allow implementation of hundreds of development projects …

\[ y_{2i} \sim \text{Poisson}(\mu_{2i}, \nu) \]  

where $\mu_{ji} = \exp(x_{ji}^\top \beta_j)$, $j = 1, 2$ are two link functions, and $\nu$ is a common unobserved heterogeneity term with gamma density $g(\nu)$. Details of the likelihood function can be found in Gurmu and Elder (2000) and presented in the appendix.

\(^{8}\) A truce between the government and the rebels began in January of 2003 and lasted for about seven months. As a result, in 2003 killings went down to 571 (Maoists: 130, state: 441) from a staggeringly high total of 4746 killings (Maoists: 1056, state: 3690) in the previous year. For robustness, we estimated models with three types of casualty aggregates: 1997-2001, 1997-2002, and 1997-2003. The preferred model presented in the table 2-3 is for 1997-2002, and uses population density as a control variable. We then estimated models by replacing the population density with the log of population. The district area variable was also entered to control for the district size. In all of these variants, the results remained qualitatively unchanged. Results will be provided upon request.
with the annual block grants for local infrastructure made available by the central government” (2003, 41). Model 1B uses participation in the parliamentary election as a measure of democracy.

Table 2 about here

As expected, participation has a negative and significant effect, consistent with $H3$. Districts with higher participation rates experience lower levels of political violence, after controlling for geographic, demographic, and economic influences. Model 1C presents the results for a combined social capital and participation measure, following earlier research (see Putnam 1993). Again, higher levels of democracy are associated with fewer killings.

Table 3 shows the results for more elaborate models, controlling for major regional differences, poverty, and ethnic differences, using the different democracy measures. Controlling for the effects of the independent variables, the relationship between Maoist and state killing remains positive and significant. We control for the development regions using the dummy variables REGION1, REGION2, REGION3, REGION5, going from East to the far West. The base category is the Western region (REGION4). Even after controlling for regional differences, mountainous terrain remains positive and significantly related to higher levels of violence. Social capital and participation are negatively and significantly associated with political violence: the more democracy, however it is measured, the less violence from both sides. While the sign for
the measure of poverty is consistently negative, as expected, it does not reach statistical significance. The ethnicity results are interesting.

Table 3 about here

We find a significant, negative relationship for Maoist killing, yet not for state killing. Ethnicity is the percentage of the population in the district speaking languages other than the official language. The Maoists’ agenda includes advocating the rights of the minorities against the Nepali majority. Consistent with this agenda, killings by the Maoists are more likely to occur in districts with fewer minorities. Ethnicity does not influence the state use of violence.

Conclusion

We have a rich theoretical literature to draw on to understand the use of political violence. The deployment of violence results from the tactical interaction of government and opposition subject to the favorability of prevailing geographical and political conditions for the use of violence. We note that while leaders may order the violence, others, the agents, actually carry out the violence. Some conditions present better opportunities than others for the successful use of violence, both from an agent and from a leadership perspective. We find that certain terrain, notably mountainous terrain, encourages the use of violence, and certain political conditions, notably democracy, discourages the use of violence.

We move the empirical testing from national units of analysis to subnational units of analysis and focus on the evolution of violence in Nepal. There are trade-offs with all
research designs: at the general cost of reducing the number of observations, subnational analysis allows for more precise measurement of many of the variables of theoretical interest, and overcomes the ‘lumpiness’ and distributional variation masked by data aggregated to the national level. Our results are consistent with of the findings from cross-national research concerning the importance of geography (Fearon and Laitin, 2003; Gates 2002). Beyond the influence of terrain, most importantly, and in contrast to the findings for the binary measure of the onset of civil war, we find that the social capital and participation measures of democracy have an inhibiting effect on the amount of killings by both sides. It is worth noting that this result is consistent with the cross-national human rights literature (Poe and Tate 1994) and with the democratic-peace literature (Russett and Oneal 2001). We can think about democracy as narrowing state decision makers’ opportunities to use violence, monitored and restrained by an active and concerned citizenry. While it is too early to disentangle all the factors influencing the spike in violence in 2002, our results also suggest support for the weak-state hypothesis that is only poorly measured by the per capita GDP measure in the cross-national research. In extending the idea of opportunity to the international environment we also suggest that governments as well as guerrillas use violence opportunistically and adjust to prevailing international conditions in addition to domestic geographical and political conditions.
References


http://www.carlisle.army.mil/ssi/


Appendix

Integrating over the heterogeneity term, the joint density is derived as:

\[
f^{\text{GBINB}}(y_{1i}, y_{2i} | x_i; \alpha, \beta_1, \beta_2) = \prod_{j=1}^{\infty} \left[ \sum_{j=0}^{\infty} \frac{e^{-\mu_j} \left( \mu_j^{y_{ji}} \right)}{y_{ji}!} g(v_i) dv_i \right] \]

\[
= \prod_{j=1}^{2} \left[ \frac{\mu_j^{y_{ji}}}{\Gamma(y_{ji} + 1)} \right] \frac{\Gamma(y_{ji} + \alpha)}{\Gamma(\alpha)} \alpha^{-y_{ji}} (1 + \frac{\mu_j}{\alpha})^{-\alpha+y_{ji}} \Psi_i
\]

where: \( \mu_i = \mu_{1i} + \mu_{2i}, y_{ji} = y_{1i} + y_{2i} \) and

\[
\Psi_i = \frac{1}{1 + \rho^2} [1 + 2\rho \sqrt{\alpha} (1 - \eta_i) + \rho^2 \alpha (1 - 2\eta_i + \eta_i \eta_2)]
\]

with \( \eta_i = \left( \frac{\alpha + y_{1i}}{\alpha} \right) \left( 1 + \frac{\mu_{1i}}{\lambda} \right)^{-1} \) and \( \eta_2 = \left( \frac{\alpha + y_{1i}}{\alpha} \right) \left( 1 + \frac{\mu_{2i}}{\lambda} \right)^{-1} \). The correlation coefficient for the model is

\[
\text{Corr}(y_{1i}, y_{2i} | x_i) = \frac{V \mu_1 \mu_2 - \mu_{1i} \mu_{2i}}{\sqrt{(V \mu_1^2 - \mu_{1i}^2 + \mu_{1i})(V \mu_2^2 - \mu_{2i}^2 + \mu_{2i})}}
\]

where \( V = ((\alpha + 1)/\lambda^2 (1 + \rho^2))[\alpha - 4\rho \sqrt{\alpha} + \rho^2 (\alpha + 1)] \). The log-likelihood function of the above joint density function is maximized using the Newton Raphson method.
Fig 1. Casualties Inflicted by Maoists and State
1996/1997 - 2003

Fig 2. Aggregate Casualties Inflicted by Maoists and State
by Elevation: Plains (1), Hills (2), and High Himalayas (3)

Source: INSEC
Fig 3. Casualties Inflicted by Maoists and State
by Elevation and Over Time

Casualties Inflicted by Maoists

<table>
<thead>
<tr>
<th>Year</th>
<th>Himalaya</th>
<th>Terai</th>
<th>Hills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>2730</td>
<td>261</td>
<td>26</td>
</tr>
<tr>
<td>1998</td>
<td>293</td>
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<td>69</td>
<td>15</td>
</tr>
<tr>
<td>2000</td>
<td>511</td>
<td>51</td>
<td>139</td>
</tr>
<tr>
<td>2001</td>
<td>56</td>
<td>150</td>
<td>651</td>
</tr>
<tr>
<td>2002</td>
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<td>62</td>
</tr>
<tr>
<td>2003</td>
<td>150</td>
<td>62</td>
<td>62</td>
</tr>
</tbody>
</table>

Casualties Inflicted by State

<table>
<thead>
<tr>
<th>Year</th>
<th>Himalaya</th>
<th>Terai</th>
<th>Hills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>261</td>
<td>26</td>
<td>239</td>
</tr>
<tr>
<td>1998</td>
<td>293</td>
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<td>16</td>
<td>69</td>
<td>15</td>
</tr>
<tr>
<td>2000</td>
<td>511</td>
<td>51</td>
<td>139</td>
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<tr>
<td>2001</td>
<td>56</td>
<td>150</td>
<td>651</td>
</tr>
<tr>
<td>2002</td>
<td>269</td>
<td>69</td>
<td>62</td>
</tr>
<tr>
<td>2003</td>
<td>150</td>
<td>62</td>
<td>62</td>
</tr>
</tbody>
</table>

Table 1. Descriptive Statistics and Variable Definitions

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCASUALTIES</td>
<td>Casualties caused by the Maoist guerillas (1997-2002)⁹.</td>
<td>25.84</td>
<td>34.64</td>
</tr>
<tr>
<td>SCASUALTIES</td>
<td>Casualties caused by the State (1997-2002).</td>
<td>70.81</td>
<td>138.74</td>
</tr>
<tr>
<td>REG1, REG2, REG3, REG4, REG5</td>
<td>Dummy variables for development regions: East, Central, West, Mid-West, and Far-West.</td>
<td>0.21, 0.25, 0.21, 0.20, 0.12</td>
<td></td>
</tr>
<tr>
<td>ELEV1, ELEV2, and ELEV3</td>
<td>Dummy variables for ecological or elevation belts: ELEV1 High Himalayan range (northern terrain bordering China), ELEV2 (mid)-Hills, and ELEV3 Terai (Plains: southern region bordering India)</td>
<td>0.21, 0.52, 0.27</td>
<td></td>
</tr>
<tr>
<td>SOCIALCAP</td>
<td>Social capital index calculated from the Nepal Living Standards Survey (NLSS) 1995/96.</td>
<td>1.01</td>
<td>1.32</td>
</tr>
<tr>
<td>PARTICIPATION</td>
<td>Participation is for each district (1999 parliamentary election).</td>
<td>0.63</td>
<td>0.08</td>
</tr>
<tr>
<td>SOCPART</td>
<td>The product of Socialcap and Participation.</td>
<td>.22</td>
<td>.19</td>
</tr>
<tr>
<td>POPDENSITY</td>
<td>Population density (2001)</td>
<td>256.50</td>
<td>388.15</td>
</tr>
<tr>
<td>GRANT</td>
<td>Government grant (1999) divided by the population (2001); Rs.</td>
<td>62.89</td>
<td>98.79</td>
</tr>
<tr>
<td>ETHNICITY</td>
<td>Ethnicity (2001) calculated as the percentage of those who spoke language other than Nepali.</td>
<td>40.70</td>
<td>29.18</td>
</tr>
<tr>
<td>POVERTY</td>
<td>District ranked by level of poverty: 1-75 (75 richest)</td>
<td>4.51</td>
<td>2.27</td>
</tr>
</tbody>
</table>


⁹ The actual starting date of violence is Feb. 1996. However, the data for 1996 and 1997 are lumped together so that separate records are not available.
Table 2. Joint Estimates of Maoist and State Killings: Negative Binomial Models

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1A</th>
<th>Model 1B</th>
<th>Model 1C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maoists</td>
<td>State</td>
<td>Maoists</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1.71 (3.43)**</td>
<td>2.93 (9.68)**</td>
<td>2.39 (6.47)**</td>
</tr>
<tr>
<td>ELEV1</td>
<td>2.19 (2.62)**</td>
<td>1.74 (2.90)**</td>
<td>0.98 (1.57)</td>
</tr>
<tr>
<td>ELEV2</td>
<td>1.87 (3.44)**</td>
<td>1.46 (3.67)**</td>
<td>0.91 (2.29)**</td>
</tr>
<tr>
<td>SOCIALCAP</td>
<td>-0.21 (-2.14)**</td>
<td>-0.17 (-2.09)**</td>
<td></td>
</tr>
<tr>
<td>PARTICIPATION</td>
<td>-</td>
<td>-</td>
<td>-0.64 (-5.62)**</td>
</tr>
<tr>
<td>SOCPART</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>POPDENSITY</td>
<td>-1.25 (-3.59)**</td>
<td>-1.70 (-4.43)**</td>
<td>-1.02 (-5.28)**</td>
</tr>
<tr>
<td>GRANT</td>
<td>-1.19 (-2.35)**</td>
<td>-0.82 (-2.10)**</td>
<td>-0.78 (-2.13)**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>$\hat{\alpha}$</td>
<td>1.30</td>
<td>1.46</td>
<td>1.32</td>
</tr>
<tr>
<td></td>
<td>(8.51)***</td>
<td>(6.48)***</td>
<td>(8.60)***</td>
</tr>
<tr>
<td>$\hat{\rho}$</td>
<td>0.63</td>
<td>0.47</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>(5.80)***</td>
<td>(4.23)***</td>
<td>(5.74)***</td>
</tr>
<tr>
<td>LnL</td>
<td>-12.63</td>
<td>-11.77</td>
<td>-12.64</td>
</tr>
<tr>
<td>N</td>
<td>71</td>
<td>71</td>
<td>71</td>
</tr>
<tr>
<td>$\chi^2\ (\text{slopes}=0)$</td>
<td>54.77</td>
<td>176.66</td>
<td>53.75</td>
</tr>
<tr>
<td>Psuedo-$R^2$</td>
<td>0.030</td>
<td>0.096</td>
<td>0.029</td>
</tr>
<tr>
<td>AIC</td>
<td>25.66</td>
<td>23.94</td>
<td>25.67</td>
</tr>
</tbody>
</table>

Note: POPDENSITY and GRANT variables are logged. *, **, and *** indicate 10, 5, and 1% significance levels, respectively.
Table 3. Joint Estimates of Maoist and State Killings: Negative Binomial Models (Model 2)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 2A</th>
<th>Model 2B</th>
<th>Model 2C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maoists</td>
<td>State</td>
<td>Maoists</td>
</tr>
<tr>
<td><strong>CONSTANT</strong></td>
<td>2.36</td>
<td>3.87</td>
<td>2.53</td>
</tr>
<tr>
<td></td>
<td>(4.64)***</td>
<td>(11.91)***</td>
<td>(6.10)***</td>
</tr>
<tr>
<td><strong>REGION1</strong></td>
<td>-0.64</td>
<td>-1.60</td>
<td>-0.19</td>
</tr>
<tr>
<td></td>
<td>(-1.28)</td>
<td>(-4.42)***</td>
<td>(-0.43)</td>
</tr>
<tr>
<td><strong>REGION2</strong></td>
<td>-0.62</td>
<td>-2.03</td>
<td>-0.16</td>
</tr>
<tr>
<td></td>
<td>(-1.91)*</td>
<td>(-5.68)***</td>
<td>(-0.57)</td>
</tr>
<tr>
<td><strong>REGION3</strong></td>
<td>-0.44</td>
<td>-1.21</td>
<td>-0.17</td>
</tr>
<tr>
<td></td>
<td>(-1.18)</td>
<td>(-3.17)***</td>
<td>(-0.56)</td>
</tr>
<tr>
<td><strong>REGION5</strong></td>
<td>-0.92</td>
<td>-1.12</td>
<td>-0.75</td>
</tr>
<tr>
<td></td>
<td>(-2.27)**</td>
<td>(-3.79)***</td>
<td>(-1.89)</td>
</tr>
<tr>
<td><strong>ELEV1</strong></td>
<td>1.32</td>
<td>1.54</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>(2.31)**</td>
<td>(3.51)***</td>
<td>(1.41)</td>
</tr>
<tr>
<td><strong>ELEV2</strong></td>
<td>1.52</td>
<td>1.60</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>(3.51)***</td>
<td>(3.99)***</td>
<td>(1.67)</td>
</tr>
<tr>
<td><strong>SOCIALCAP</strong></td>
<td>-0.27</td>
<td>-0.20</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(-3.51)***</td>
<td>(-2.18)**</td>
<td>-</td>
</tr>
<tr>
<td><strong>PARTICIPATION</strong></td>
<td>-0.45</td>
<td>-0.50</td>
<td>-</td>
</tr>
<tr>
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<td>SOCPART</td>
<td>POPDENSITY</td>
<td>GRANT</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
<td>------------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-4.52)***</td>
<td>(-4.57)***</td>
</tr>
<tr>
<td></td>
<td>-1.47</td>
<td>-1.26</td>
<td>-1.19</td>
</tr>
<tr>
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<td>-1.85</td>
<td>-1.47</td>
<td>-1.00</td>
</tr>
<tr>
<td></td>
<td>-1.55</td>
<td>-1.26</td>
<td>-1.03</td>
</tr>
</tbody>
</table>

Note: POPDENSITY, GRANT, and ETHNICITY variables are logged. *, **, and *** indicate 10, 5, and 1% significance levels, respectively.