

# Relative Capacity and the Spread of Rebellion: Insights from Nepal

Helge Holtermann<sup>1,2</sup>

Journal of Conflict Resolution  
2016, Vol. 60(3) 501-529

© The Author(s) 2014



Reprints and permission:

[sagepub.com/journalsPermissions.nav](http://sagepub.com/journalsPermissions.nav)

DOI: 10.1177/0022002714540470

[jcr.sagepub.com](http://jcr.sagepub.com)



## Abstract

This article explores how insurgencies emerge and spread within a country over time through an analysis of the Maoist insurgency in Nepal. It argues that important processes underpinning the spread of insurgency are likely to change with shifts in the relative military capacity of belligerents. Importantly, insurgents can to a greater extent spread the insurgency by using coercion, material incentives, and movement of forces when they are militarily strong than when they are weak. This in turn leads to changes in the local conditions favorable to insurgency. I hypothesize that inaccessible terrains, preexisting rebel networks, and proximity to insurgent areas are likely to be important determinants of local insurgency onset during rebel weakness, but should decline in importance as the rebels gain strength. I find support for these arguments in a mixed-methods analysis of Nepal's insurgency that combines a qualitative narrative and a quantitative event history analysis.

## Keywords

civil wars, asymmetric conflict, capabilities, internal armed conflict, diffusion, rebellion

Quantitative studies of civil war processes tend to assume that similar mechanisms operate throughout a conflict and that explanatory variables therefore have constant effects. Studies of Nepal's civil war, for instance, have modeled spatial variation in

---

<sup>1</sup>Department of Political Science, University of Oslo, Oslo, Norway

<sup>2</sup>Peace Research Institute Oslo (PRIO), Oslo, Norway

## Corresponding Author:

Helge Holtermann, Department of Political Science, University of Oslo, 0317 Oslo, Norway.

Email: [helge.holtermann@stv.uio.no](mailto:helge.holtermann@stv.uio.no)

levels of violence using exclusively preconflict local conditions, and assumed that these conditions mattered equally in all phases of the conflict (e.g., Do and Iyer 2010; Nepal, Bohara, and Gawande 2011). But there are good reasons to believe that this assumption does not hold. In particular, we know that the distribution of military power between belligerents may change over the course of a war (Christia 2012). Such changes are likely to influence belligerents' available options and strategic calculus, which plausibly affects conflict processes like violence and mobilization.

This article looks at how changes in relative capacity affect the emergence and spread of insurgent activity within a country over time. Relative capacity matters for how and where insurgency spreads, I argue, by affecting three central considerations for the rebel organization: survival, mobilization, and power projection. First, relatively weaker rebels have a greater need to hide from state forces than do stronger rebels. This suggests that inaccessible areas should be particularly prone to the rise of insurgency during rebel weakness, but less so when rebels have greater capacity. Second, weak rebels tend to depend more on voluntary collaboration by local people than do stronger rebels, who have a greater coercive and financial capacity to incentivize collaboration. This suggests that local preexisting rebel networks will be especially advantageous during rebel weakness and decline in importance if the rebels gain strength. Finally, weak rebels tend to have a lower capacity to project power across large distances than do stronger rebels, since they have fewer and less mobile forces. One may therefore expect that proximity to insurgent strongholds should be more important for the spread of insurgency during relative rebel weakness than during rebel strength.

I assess these arguments through an analysis of the Maoist insurgency in Nepal (1996–2006), a case of strong growth in rebel capacity relative to the state over time. Arising from a small party with meager resources and a few pockets of support, the insurgency grew to encompass nearly the entire country within a decade. I first provide a qualitative narrative describing the processes underlying the spread of insurgency in different phases of the conflict. Implications of the theory are then assessed statistically using district-level event history models of insurgency onset, defined as the beginning of local rebel activity that includes lethal violence. As hypothesized, in the initial period of rebel weakness, inaccessibility, preexisting local Maoist networks, and proximity to areas with ongoing insurgency strongly increased the likelihood of insurgency onset, but the influence of all these conditions diminished with time and increase in rebel capacity relative to the state.

Overall, the analysis demonstrates the importance of contextualizing micro-level analyses by taking into account how changes at the macro level—not the least in relative capacity—affect local processes. It also suggests that we might need to reconsider propositions that factors like rough terrain *in general* “should favor insurgency and civil war” (Fearon and Laitin 2003, 80). The extent to which it favors insurgency is likely to depend on the balance of power between belligerents, which is not constant across conflicts or periods within conflicts. This insight may also help explain why previous studies have found widely different effects of factors such as road access on insurgent violence across conflicts (e.g., Do and Iyer 2010; Zhukov 2012).

The article is structured as follows: I briefly discuss the literature on insurgency processes, highlighting the puzzling variability of findings and the gaps in research on the spread of insurgency. Next, I lay out the arguments for how relative capacity matters to the spread of insurgency and derive hypotheses from them. The empirical analysis begins with the qualitative narrative and continues with the quantitative test. In the conclusion, I discuss the scope of the arguments and their implications for the study of civil war dynamics more generally.

## The Puzzling Variability of Rebellions

In the early 2000s, theories about the causes of civil wars tended to assume considerable homogeneity of key processes, like mobilization and warfare, across and within civil wars (e.g., Collier and Hoeffler 2004; Fearon and Laitin 2003). Recent research, especially at the subnational level, has proven such assumptions problematic by demonstrating that these processes vary across and within civil wars. Reasons for joining a rebel group, for instance, have been found to differ considerably even within groups, spanning ideology, fear, profit, revenge, and adventure (Arjona and Kalyvas 2012; Humphreys and Weinstein 2008; Viterna 2006). The same applies to the methods organizations use to mobilize people, which range from coercion and abduction (Beber and Blattman 2013) to persuasion (Eck 2010; Wood 2003). Warfare—another central aspect of civil wars—also takes different forms across civil wars (Kalyvas and Balcells 2010) and sometimes also within them (Lockyer 2010).

Subnational studies also suggest that the conditions fueling insurgency may differ across and within cases. Consider the relationship between road access and rebel activity: from Fearon and Laitin's (2003) model of insurgency, which emphasizes insurgents' need to hide from government forces, one should expect rebel activity to occur mostly in areas poorly served by roads. Some studies, including several from Nepal (Do and Iyer 2010; Murshed and Gates 2005), indeed find that more conflict-related violence occurred in areas far from roads, but areas with better road access have been found to attract *more* violence in conflicts in Central Africa (Raleigh and Hegre 2009) and the North Caucasus (Zhukov 2012). How can we explain such differences in the environments where insurgencies thrive?

While there has been some theorizing about why warfare varies (Butler and Gates 2009; Kalyvas and Balcells 2010), little has been done to address this question. I argue that variation in the geographic locus of insurgency, much like variation in warfare, is closely related to the relative military capacity of the combating organizations. To show this, I look at where violent insurgent activity emerges and spreads within a country when a rebel group begins weak but grows stronger over time.

## The Growth and Spread of Insurgency

Many studies have explored which areas tend to see most violence during civil war, but relatively few have looked at the subnational growth and spread of insurgency

from a spatial angle.<sup>1</sup> This also applies to the literature on the Maoist insurgency in Nepal. Several studies have sought to identify preconflict local determinants of violence throughout that conflict or in a certain period of it (Do and Iyer 2010; Murshed and Gates 2005; Nepal, Bohara, and Gawande 2011). By design, these studies do not capture changes in processes over time. Do and Iyer (2010) is the only study analyzing the *spread* of Nepal's insurgency.<sup>2</sup> While their study takes a step toward capturing conflict dynamics, it does not include any time-varying covariates. The model thereby rests on an implausible assumption that the emergence of insurgency in one area is independent of conflict processes in nearby areas and developments at the macro level.

Beyond the Nepal literature, there are also some studies looking at the spatiotemporal dimensions of insurgency. Several of them are mainly descriptive, however. Townsley, Johnson, and Ratcliffe (2008), for instance, look at the extent to which insurgent violence is clustered in time and space, while Schutte and Weidmann (2011) look at the extent to which violence follows a *relocation* pattern, shifting from one place to another, or an *expansion* pattern,<sup>3</sup> remaining in its original place while emerging other places. Sánchez, Solimano, and Formisano's (2005) study of spatiotemporal patterns of violence in Colombia has a more explanatory orientation. Interestingly, they find that some local conditions, like political polarization, were strongly associated with more violence in the first period of La Violencia but not in the last period. However, they do not offer much theory to help make sense of this.

There is a shortage of theoretical work on the geographic spread of insurgency. One influential contribution is McColl's (1969) account of how revolutionary insurgencies evolve, which is based on several case narratives. Revolutionary insurgencies, he argues, have a "territorial imperative" of establishing "base areas" and developing them into insurgent states within the state. He divides an insurgency process into three phases (very similar to Mao's strategic phases): first, the "mobile phase," in which revolutionaries turn to remote rural areas to mobilize while hiding from state forces. After some base areas are established comes the "guerilla phase" in which insurgent influence spreads out from the bases and approaches urban centers. If the insurgents manage to develop their military capacity to match the government, the conflict enters an "equilibrium phase" in which the government concentrates its forces in larger cities and the insurgents develop their base areas into states within the state. Although McColl's study provides useful ideas, it does not pay much attention to exactly what processes drive the spread of insurgency and which mechanisms cause strategic changes. I now turn to these issues.

## Relative Capacity and Coordinated Expansion

Insurgent collective action can arguably spread through three ideal-type processes: first, *isolated growth*, where people in one place independently decide to rebel without any external influence; second, *coordinated expansion*, in which organized agents trigger collective action across places using tools like coercion, training, or

organizational development; and third, *diffusion*, in which people in one place decide to rebel on the basis of considering others' practices elsewhere, without any coordination involved.<sup>4</sup> Practices may diffuse in several ways, including through learning and imitation (Elkins and Simmons 2005).

In modern-era insurgencies, coordinated expansion is likely to predominate. While peasant or anticolonial rebellions before the mid-twentieth century could involve more or less disconnected communities rising in rebellion (Tilly 1978, 185-87), this has rarely been the case for rebellions thereafter. From World War II, the technology used by most rebels developed toward "robust insurgency," involving a strong rebel organization usually led by educated elites and supported by transnational networks (Kalyvas and Balcells 2010). The leaders focused on carving out base areas within the state where they could mobilize, train, and educate their forces. In such insurgencies, the rebel organization's allocation of military, organizational, and political resources will strongly influence where insurgent activity takes place.

Several considerations affect where a rebel organization chooses to invest its resources at a certain point in time. First, rebel leaders are likely to invest resources where they think local conditions are conducive to insurgency, especially emphasizing the prospects of *survival* in the face of counterinsurgency and *mobilization* of human and material resources. Second, it will consider the feasibility and *cost of projecting power* from one area to another. All these considerations are likely to be shaped by the relative military capacity of the rebels and the government. This in turn means that the conditions under which we are likely to see insurgency arise will change with developments in relative capacity over time. Subsequently, I explain how each of these considerations hinges on relative capacity and derive hypotheses about the expected spatiotemporal trajectory of conflicts where rebel relative capacity grows over time.

### *Survival and Accessibility*

For militarily weak rebels, staying alive is a most important preoccupation. Guevara ([1961] 1998, 172), for instance, wrote that "[o]ur mission, in the first hour, shall be to survive..." As long as they are militarily inferior to government forces, the rebels will be safer in inaccessible areas weakly penetrated by state administration. Difficult terrains like mountains or dense forest, scattered settlements without roads, and long distance from centers of state power all raise the cost for the government of asserting control and tracking down the insurgents (Fearon and Laitin 2003; Buhaug 2010). We should therefore expect militarily weak insurgents first to turn to relatively inaccessible, but still settled areas.

If the rebels grow militarily stronger, however, the benefit from hiding in remote areas wanes. One reason is that the formation of larger military units and procurement of heavy weaponry may allow the insurgents to withstand attacks. Another is that the insurgents will gain safety in numbers; more manpower enables

them to expand their area of activity, which makes it difficult for the government to concentrate its forces and carry out devastating, large-scale attacks. This gives the following hypothesis:

**Hypothesis 1:** When a rebel group is very weak compared to the counterinsurgent, insurgency onset is more likely in inaccessible areas; but as the group gains relative strength, inaccessibility becomes less important for the likelihood of insurgency onset.

### *Mobilization and Preexisting Ties*

Insurgents also need to ensure that local populations collaborate and provide material resources. At the minimum, they rely on local people for food, and as long as they are vulnerable to government attacks, they must avoid information leaks to government agents (Kalyvas 2006; Leites and Wolf 1970, 10). The tools that rebel organizations can use to obtain such collaboration are likely to depend on their military strength: while they are weak, they usually lack the capacity to enforce compliance and the means to offer economic incentives for collaboration. In this situation, they are likely to focus on fostering political sympathy and emotional attachment to their cause (Wood 2003) as well as solidarity and networks that create social incentives for collaboration (Petersen 2001). Since forging strong social ties and building mass political support are demanding and time-consuming tasks (Fireman and Gamson 1979, 22), it is advantageous for the rebels to concentrate their efforts where they already have some social and organizational ties to local populations. In agreement with this, much case evidence suggests that weak rebel groups initially tend to mobilize mainly among people they are already politically or socially connected with (Viterna 2006, 21-24; Weinstein 2007, 108-11; Wickham-Crowley 1992, 138-53).

As a rebel group develops military and financial strength, its repertoire of tools for mobilization also expands. In particular, it becomes better able to induce people to cooperate through offering protection and economic benefits for cooperation and threatening punishment for defection. In addition, people or groups perceiving that they may gain from the political order the rebels are fighting for may find it expedient to cooperate with the insurgents. Rebels are therefore likely to become less dependent on preexisting ties to local populations. One observable implication of this argument is the following:

**Hypothesis 2:** When a rebel group is very weak relative to the counterinsurgent, insurgency onset is more likely where the rebels have preexisting ties to the population; but as the group gains strength, preexisting ties become less important for the likelihood of insurgency onset.

## Power Projection and Proximity

Whether insurgent activity begins in an area at a certain time will also depend on the rebels' ability to move their forces and cadres from one place to another (Zhukov 2012). The entry of insurgents from outside is likely to be especially important for insurgent activity to take hold in areas without strong preexisting rebel ties. In such areas, they may act as political entrepreneurs, offer protection and training to local recruits, and carry out attacks.

The ability to project power, however, is likely to be closely associated with rebel military capacity (Buhaug 2010). An important reason is that insurgents in irregularly fought civil wars are likely to mainly *expand* their area of activity rather than to *relocate* to new areas (Schutte and Weidmann 2011).<sup>5</sup> Mao's policy of gradual expansion from the countryside to the cities is the typical pattern. While the rebels seek to enter the cities, they are not willing to give up their established power in the countryside. Irregular wars are also therefore typically characterized by *fragmented sovereignty*, in which most areas are not fully controlled by any party, and where the rebels usually continue activities even where the government is more powerful (Kalyvas 2006). Since they seek expansion, a weak rebel group cannot afford to send many cadres across large distances. It is more likely to send cadres to nearby areas from where they can easily return to the base for supplies and to aid in combat. If the rebels manage to build up a large surplus of forces in an area, however, it becomes feasible to transfer divisions far from their origins. As a consequence, *proximity* takes on a more important role for insurgent expansion when the rebels are weak than when they are strong. The following hypothesis can be derived from this argument:

**Hypothesis 3:** When a rebel group is very weak, insurgency onset is more likely where there is ongoing insurgent activity in nearby areas, but as the group gains strength, proximity to insurgency-affected areas becomes less important for the likelihood of insurgency onset.

## The Evolution of Insurgency in Nepal

The Maoist insurgency in Nepal from 1996 to 2006 is a suitable case for exploring these hypotheses. First, it encompassed much temporal variation in relative military capacities: the Maoists began as a very weak armed group but over time became strong enough to offer considerable resistance to the government army and, second, the country offers large spatial variation in several variables of interest, such as accessibility and preexisting Maoist ties.

The next section offers a brief qualitative account of how the insurgency evolved, including some evidence suggesting that the theorized processes were present. I here draw upon interviews by the author in March and April 2010 with political leaders and villagers in Rolpa and Syangja district as well as various secondary sources.

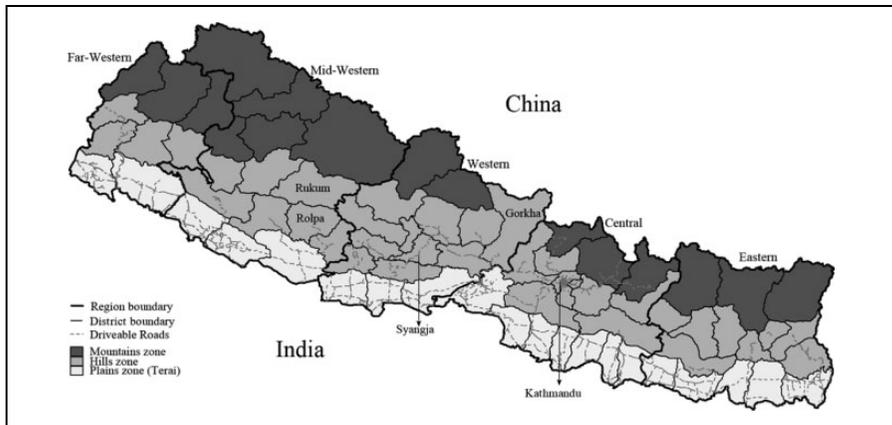
### *Emergence and Early Spread of the Maoist Insurgency*

The Maoist insurgency arose during a turbulent period. In 1990, a swift nonviolent popular uprising backed by most of the political parties ended thirty years of monarchical rule. The new constitution restored multiparty democracy, but, to protests from the far-left and minority organizations, Nepal remained a centralized Hindu state with Nepali as the only official language, and the king retained considerable powers. Some far-left parties nonetheless participated in the 1991 parliamentary election under the United People's Front (UPF) alliance, which gained 5 percent of national votes and nine seats in parliament. Disagreements soon arose within the UPF over the question of armed revolution, however. This led to a split in 1994, after which one faction took the name CPN-Maoist and began preparing for insurgency. On February 13, 1996, they launched the insurgency with attacks in various parts of the country (International Crisis Group [ICG] 2005, 22).

The Maoists began as a very weak rebel outfit. Political support and organizational networks were strong only in a few remote districts. Their military forces consisted of a couple hundred fighters with simple training and mostly homemade guns. The government, in comparison, had an army of about 43,000 in addition to a police force of 28,000 (International Institute for Strategic Studies 1996/1997–2006/2007). Realizing their initial weakness vis-à-vis the government, the Maoists during the first five years saw themselves in Mao's phase of "strategic defense," and concentrated on developing organizational and military capacity and creating "base areas" in the countryside (Gates and Miklian 2011). Advancements were made on all points during these years, much aided by a weak response by the unstable governments in Kathmandu. Despite hundreds being killed and Maoist influence growing in the countryside, only the police force was used against the rebels up to late 2001, when the army became involved.

In the first year of the insurgency, Maoist activity was highly concentrated in the districts of Rolpa and Rukum in the Midwestern Hills region (Figure 1). This was partly the result of preceding efforts by the central Maoist organization to make this area the main stronghold of the insurgency. Already from 1994, the party brought political entrepreneurs and military specialists from other places to mobilize and provide training in Rolpa and Rukum (Gersony 2003, 37).<sup>6</sup> In accordance with the hypotheses, the area was quite inaccessible due to forested, hilly terrain, and lack of roads. Also, the Maoist party had a uniquely strong foothold here. When explaining why they initially focused their activities here, CPN-Maoist chairman Pushpa Kamal Dahal, a.k.a. "Prachanda," also highlighted these factors, mentioning the "consistent revolutionary leadership" of the area and that "there are no transportation facilities, there is no electricity, and communication is also very weak for the ruling classes" (Onesto 2000).

Processes in this area after the insurgency began also fit the theory well. Its inaccessibility greatly impeded the counterinsurgency by forcing the police to spread its forces thinly to cover the major villages in the districts. This left them without firm



**Figure 1.** Ecological zone map of Nepal.

control almost anywhere and made it possible for the Maoists to capture arms and ammunition by raiding poorly manned police stations (Marks 2003). Preexisting rebel networks also aided the growth of insurgency: they provided a pool of loyal collaborators in the villages to whom the insurgents went for food, shelter, and information. Furthermore, several Maoist recruits mentioned links to active insurgents as important for their decision to join (Holtermann, 2014).<sup>7</sup>

It was not until late 1997 that insurgent activity started taking hold also in other districts. The insurgency expanded to two types of areas: first, to Midwestern districts nearby the strongholds of Rukum and Rolpa and, second, to a few scattered districts in the Western and Central Hills, which had relatively strong preexisting local Maoist movements.<sup>8</sup> The expansion in the Midwest was driven to a large extent by movement of insurgents from Rolpa and Rukum to adjacent districts. Most of these districts lacked a strong preexisting Maoist movement, which hindered rapid bottom-up growth of insurgency. It was only with the infusion of coercive and organizational resources from outside that the insurgency gained a strong local foothold (Gersony 2003, 71). The Maoists only became able to do this from late 1997, when they began developing larger squads which were to become mobile and not tied up to specific districts (Onesto 2005, 94-95). Still, in accordance with the theory, during this phase of limited military capacity they did not move many fighters far away from their stronghold. Most insurgents instead traveled back and forth from the “Main Zone” of Rolpa and Rukum to nearby districts, so-called Associated Zones (Onesto 2005, 200).<sup>9</sup>

In the few spots beyond the Midwestern Hills where insurgency began, the processes were more bottom-up and based on the preexisting local movement. The distance from the “Main Zone” precluded the inflow of large contingents of insurgents from outside. A Maoist leader from Gorkha district, for instance, said that it took time to build up insurgent capacity because of the need to recruit locally in the

context of harsh counterinsurgency (Onesto 2005, 77). Their location relatively close to Kathmandu also made the movements in these districts more vulnerable to counterinsurgency campaigns (Onesto 2005, 79). These challenges may help explain that insurgency did not spread rapidly from these spots of insurgent activity outside the Midwest in the initial years.

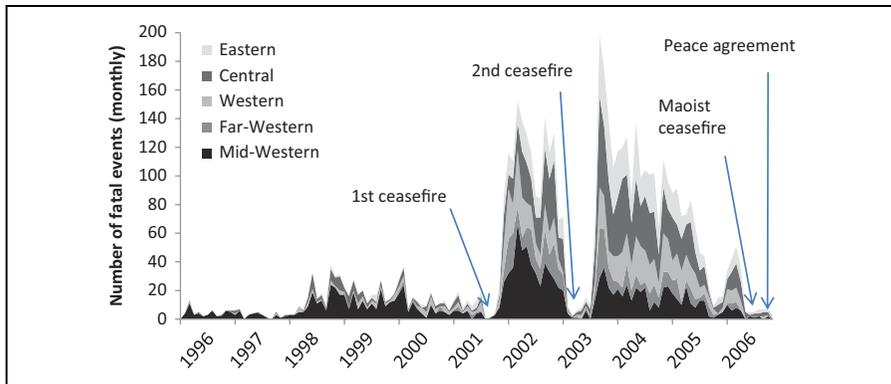
### *Spread of the Insurgency in the Later Years*

The Maoist slowly built up military capacity over the initial years, and by early 2000 they had pushed the police out of the villages in their stronghold districts. Their new control in the countryside allowed them to introduce regular, general taxes and begin conscription-like recruitment drives (Ogura 2005). These resources enabled them to rapidly build capacity, and in 2001 they formed a “People’s Liberation Army” with mobile forces up to the brigade level. They were still weaker than the Royal Nepalese Army, especially in terms of weaponry, but they now presented a significant military challenge (Mehta and Lawoti 2010). In line with the theory, the increase in capacity was followed by a strategic shift in which the Maoists turned attention toward more central, accessible areas. In February 2001, they adopted an offensive strategy named “Prachanda Path,” aiming for a “great leap forward” by expanding the insurgency to the big cities, including Kathmandu, and the economically important Terai plains toward India (CPN-Maoist 2001).

The planned offensive was interrupted by events in Kathmandu, however. In June 2001, King Birendra and most of the royal family were massacred by the crown prince, and Birendra’s brother assumed the throne. Soon after, the government declared a ceasefire, and high-level negotiations began for the first time. The government was unwilling to consider the key Maoist demand of an elected constituent assembly, however, and in November 2001, the Maoists attacked the army for the first time. The next few months saw a large spike in violence, as the army became fully engaged in the conflict. Moreover, the insurgency spread rapidly and would encompass almost the entire country only two years later.

As expected, the insurgency became less spatially bound in this period, and expansion took place also far away from Maoist strongholds. A major reason for this was interregional movements of large groups of insurgents. During the ceasefire from July to November 2001, many guerillas were transferred from Maoist strongholds to the new frontiers (Nayak 2007, 926). The import of rebels from outside could be decisive in the local growth of insurgency. In Syangja in the Western Hills, for instance, the armed conflict took hold after a raid in November 2001 in which a large rebel force, mostly composed of nonlocals, seized the district headquarters for five hours.<sup>10</sup>

Coercion also became a larger element of Maoist mobilization efforts, as the theory would suggest. In places where the Maoists initially relied on volunteers for help and used violence only against active opponents, they began threatening punishment of anyone who did not pay taxes or perform various tasks.<sup>11</sup> They also



**Figure 2.** Regional patterns of violence in Nepal.

increasingly used abduction as a recruitment method; only in 2002, more Maoist abductions were registered than in the entire 1996–2001 period (Eck 2010, chap. 3, 11). Generally, accounts from this period suggest that Maoist rule to a considerable extent had become associated with fear of punishment (Lecomte-Tilouine 2009; Ogura 2005; Pettigrew and Adhikari 2009).

The increase in Maoist power also made other actors more interested in allying with them to reap future gains. From around 2002, for instance, the Maoists constructed an alliance with the largest regional political movement of the Terai, the Madhesi Janadhikar Forum (MJF). In exchange for the Maoists promoting regional autonomy and Madhesi rights, the MJF supplied the insurgency with activists and legitimacy (Gates and Miklian 2011, 427). This became a gate opener to the region, where the Maoists had almost no political foothold, and eased the spread of insurgency to most of the Terai during 2002 and 2003 (ICG 2011, 7).

As expected, the spread of insurgency predominantly took the form of expansion rather than relocation. The Maoists did not abandon their original areas, as they moved into the cities and the plains. Rather, the Midwestern Hills remained their key stronghold throughout the conflict, and their central leadership was based there during the later years (Roy 2008, 122). After the Maoists gained control of most of the Midwest during 2002, the bulk of violence shifted to more contested regions (Figure 2). But, as expected due to the irregular nature of the conflict, violence did not entirely seize in any region.

In 2004, the rebels declared the start of a last “strategic offense” phase, but it soon became apparent that they were not able to take the major cities, and a stalemate followed. The situation rapidly changed after the King dismissed the government and formed his own war cabinet in February 2005. Having been sidelined by the king, the large parties entered an alliance with the Maoists in November 2005 to regain power. The alliance initiated, but did not fully control, a popular uprising in April 2006, which forced the king to step down. The following negotiations between

the Maoist and the new government led to a peace agreement in November 2006 that ended the war (ICG 2006).

## Quantitative Analysis

### *Design and Model*

While the narrative suggests that the processes outlined in the theory were present, systematic comparisons are needed to assess the hypotheses. I use district-level event history models for this purpose. The district is a suitable level of analysis because the theory concerns where and when armed insurgency became entrenched, rather than the precise location of rebel violence. At a lower geographic level, like the Village Development Committee, violence is likely to be driven to a larger extent by tactical choices of insurgents in the district. Moreover, the district was an important organizational level for the Maoists, especially in the initial years, when the main armed squads were under district command, but also later in the war, when “District People’s Governments” had strong financial powers (ICG 2005, 14; Ogura 2005, 185).<sup>12</sup>

The dependent variable, *insurgency onset*, is defined as the beginning of local rebel activity that includes lethal violence and operationalized as *the first time a district experiences at least five days of lethal insurgent violence within any half-year period*.<sup>13</sup> I use violent events data collected by the Informal Sector Service Center (INSEC), a Nepalese NGO with representatives documenting violence in every district throughout the conflict (INSEC 2010). A low threshold of violence is appropriate because I am concerned with the onset, and not the intensity, of violence. The reason for choosing a threshold above one event day is to reduce the potential for Maoist raids organized from outside a district to influence the measure.<sup>14</sup>

I use a conditional logit model grouped on onset dates to estimate how the explanatory variables affected where insurgency arose at different points in time. This model derives estimates by combining results from binary outcome analyses at each onset date (representing a “failure” in survival analysis terminology).<sup>15</sup> Each day one or more districts see onset, the onset district or districts are compared to all other districts that have not yet seen insurgency onset. This makes it possible to trace insurgency dynamics at the finest possible time scale (Raknerud and Hegre 1997) and avoid imposing assumptions about the distribution of onsets over time.

### *Explanatory Variables*

The central variable in the first hypothesis, accessibility (from the government’s perspective), is primarily a function of three variables: terrain, infrastructure, and distance from the capital. I measure the concept using an index (*accessibility*) combining the percentage forest cover, the average slope of the terrain, the length of roads per square kilometers (square root transformed), and the distance from the

district headquarter to the capital, Kathmandu.<sup>16</sup> Similar weight is given to terrain (one-sixth weight for each of the two terrain variables), roads (one-third weight), and distance (one-third weight) in the index.<sup>17</sup>

Preinsurgency Maoist organizational networks are proxied by the percentage of district votes for the UPF, the precursor of the CPN-Maoist, in the 1991 parliamentary election (*UPF support*).<sup>18</sup>

Proximity to insurgent areas is captured by a dummy variable recording for each district whether any adjacent district saw ongoing insurgency at any onset date in the country (*nearby insurgency*).

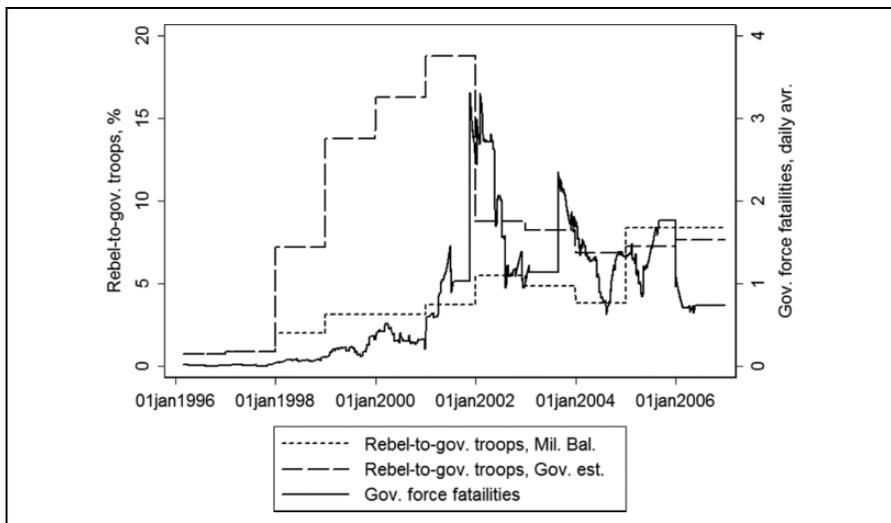
To assess the argument that the role of preinsurgency rebel networks, proximity to insurgent areas, and accessibility changed over the course of the conflict, I interact these variables with the time (in years) since the insurgency began (*time*).<sup>19</sup>

Further, I argued that temporal contingency was mainly due to the rebels gaining military strength relative to the government over time. I assess this by interacting the explanatory variables with measures of relative capacity. The first measure is the number of rebel full-time combatants as a percentage of government forces (*rebel-to-government troops*).<sup>20</sup> Available information on rebel combatants is not very precise. For the first couple of years, the only available estimates come from Maoist commanders (Ogura 2008, 31; Onesto 2005, 90). From 1999, the *Military Balance* gives yearly estimates of rebel troops (International Institute for Strategic Studies 1996/1997–2006/2007).<sup>21</sup> Government officials also gave estimates of rebel troops at several points during the conflict, some of which differed considerably from those in the *Military Balance*.<sup>22</sup>

Since rebel troops data are uncertain, I construct an additional, less direct measure: the average daily number of government force fatalities over time (*gov. force fatalities*). Government force fatalities indicate relative capacity because weak rebels are likely to try to avoid clashes with government forces (Hultman 2007). Government force fatalities also depend on other strategic considerations, however. To reduce the influence of short-term fluctuations due to such considerations, I calculate a moving average of daily government force fatalities in a six-month period: three months before and three months after the date in question. Further, I remove periods with ceasefire when calculating the moving average, giving these periods the value of the preceding date.<sup>23</sup>

Data for government troops are much more reliable and are found in the *Military Balance*. The army is excluded up to 2002, since it was not mobilized against the rebels until late November 2001. The number of government troops increased greatly after 2001 because the army became involved and both the army and the armed police force were expanded.

Figure 3 shows the development of relative capacity over time, using two measures of rebel-to-government troops—one based on the *Military Balance* and one on government sources—as well as the government force fatalities measure.<sup>24</sup> There is considerable variation between the measures. In particular, the Maoists gained strength earlier according to the government estimates of rebel troops than



**Figure 3.** Comparison of relative capacity measures.

the other measures suggest. Still, all three measures suggest that the Maoists became much stronger over the first half of the conflict. In the following analyses, I use two of these measures: the rebel-to-government troops estimates from the *Military Balance* and the daily government force fatalities measure. The results are very similar using rebel troop estimates from government sources (Online Appendix). The sources, summary statistics, and correlations for all the variables are found in the Online Appendix, Tables A5 and A6.

### Control Variables

Several studies of Nepal's Maoist conflict have argued that poverty fuelled the rebellion (e.g., Do and Iyer 2010). Poverty may ease recruitment, since lower regular income opportunities reduce the opportunity cost of becoming a full-time rebel (Collier and Hoeffler 2004). Furthermore, the Maoists' political program, like that of many other leftist rebel groups, appealed to the poor by focusing on wealth redistribution.<sup>25</sup> I use the Human Development Index (*HDI*) based on the 2001 national census as a broad indicator of poverty.<sup>26</sup> There is a risk of endogeneity bias since the data are collected five years into the insurgency, but it is likely to be small since these variables tend to change slowly and violence was quite limited up to this time.

It has also been argued that peasant dependency on landowners facilitated Maoist mobilization (Joshi and Mason 2008). As a proxy for peasant dependency, I use the percentage of rural households working under any form of tenancy arrangement in 2001 (*tenants*).

Diffusion through mass media channels has been found to be important in studies of riots and protests (Lipsky 1968; Myers 2000). While it is unlikely to be equally important in insurgency, which is a more coordinated phenomenon, it could still play some role. People sympathizing with the rebels might be inspired by, or learn from, news of rebel activities elsewhere. Moreover, news about dramatic events may prompt discussions, or “occasions for deciding,” which gives a chance for rebel sympathizers to signal their stands and unite (Oliver 1989). On the other hand, the government may use mass media to spread antirebel views or deterrent messages discouraging people from rebelling. I use the percentage of households owning radio in a district (*radio ownership*) as an indicator of access to mass media. Radio was the primary news source during the conflict, since both TV and newspapers were rare outside the big cities (United Nations Development Programme [UNDP] 2004, 129). The indicator is also likely to capture important variations in mass media access since rates of radio ownership varied considerably across the country. Notably, however, in most places, the only station was the government-controlled Radio Nepal, which spread anti-Maoist messages.<sup>27</sup>

Several scholars have suggested that the culture of certain “indigenous nationality” groups—particularly the Magars of Rolpa and Rukum—might have eased Maoist mobilization (de Sales 2000; Ramirez 2004). I therefore control for the percentage of Magars in a district (*Magars*). To assess the more general argument about disadvantaged ethnic/caste groups tending to support the Maoists, I also include the proportion of high-caste hill groups in a district (*hill high castes*).<sup>28</sup>

I also include an indicator of broader leftist support: the number of district mandates for any self-declared communist party (*communist mandates*) in the 1991 election (Election Commission 1992). This may help distinguish the impacts of organizational networks, which the UPF support variable is meant to capture, and ideological support.

Finally, I control for the logged district population for 1991, which is relevant primarily because some Himalayan districts are very thinly settled, making them of little political interest.

## Results

Table 1 shows results from four conditional logit models of insurgency onset. The first model includes all district-level variables but no interaction terms, and thereby rests on the typical assumption that all variables have constant effects over time. Model 2 includes interactions between each of the three main variables and *time* since the initiation of insurgency. The interaction terms are jointly significant at the 1 percent level according to a likelihood ratio test, strongly suggesting that the variables have time-varying effects. All interaction terms are in the expected direction: *Accessibility* was associated with a lower likelihood of onset at the conflict’s midpoint, but this association faded over time, as shown by the positive interaction term; preexisting Maoist networks (*UPF support*) increased the likelihood of onset, but its impact also declined over time; and a similar pattern is found for *nearby*

**Table 1.** Results from Conditional Logit Models of Insurgency Onset.

Variables	(1) No interactions	(2) Interactions with time	(3) Interactions with rebel-to- gov. troops	(4) Interactions with gov. force fatal.
Accessibility	-0.695** (0.303)	-1.078** (0.399)	-0.733* (0.324)	-0.697* (0.303)
Accessibility × Time, years		0.377* (0.151)		
Accessibility × Rebel-to-gov. troops,			0.212 (0.188)	
Accessibility × Gov. force fatalities				0.285 (0.226)
UPF support	0.056** (0.019)	0.053** (0.018)	0.048** (0.018)	0.047** (0.018)
UPF support × Time, years		-0.019* (0.008)		
UPF support × Rebel-to-gov. troops			-0.023* (0.010)	
UPF support × Gov. force fatalities				-0.035* (0.014)
Nearby insurgency	1.067* (0.531)	0.863 (0.452)	1.052* (0.456)	1.210* (0.476)
Nearby insurgency × Time, years		-0.414 (0.292)		
Nearby insurgency × Rebel-to-gov. troops			-0.377 (0.297)	
Nearby insurgency × Gov. force fatalities				-0.366 (0.393)
HDI	-8.503 (5.260)	-4.183 (5.454)	-6.333 (5.066)	-6.916 (4.962)
Tenants	-0.011 (0.020)	-0.029 (0.018)	-0.024 (0.018)	-0.022 (0.019)
Radio ownership	0.052 (0.027)	0.049 (0.027)	0.052 (0.027)	0.053 (0.027)
Magars	-0.039 (0.022)	-0.059* (0.023)	-0.052* (0.022)	-0.050* (0.022)
Hill high castes	-1.669 (1.098)	-1.774 (1.047)	-1.608 (1.086)	-1.622 (1.102)
Communist mandates	0.023 (0.123)	-0.056 (0.109)	-0.041 (0.112)	-0.021 (0.114)
Log population	1.533** (0.384)	1.562** (0.379)	1.537** (0.385)	1.566** (0.403)
Onsets ("failures")	62	62	62	62
Districts	75	75	75	75
Log pseudo LL	-199.8	-190.9	-194.4	-194.5
Joint significance test of interaction terms ( $\chi^2$ , 3 df)		17.79**	10.74*	10.53*

Note: HDI = Human Development Index, LL = Log likelihood; Coefficients shown. Robust standard errors in parentheses. Continuous components of interaction terms are mean centered.  
\*\* $p < .01$ . \* $p < .05$ .

*insurgency*. Notably, the table does not give a full picture of these contingent effects, since the estimates only refer to the main variable's impact when the modifying variable is held at its sample mean. I look more closely at these contingent effects subsequently.

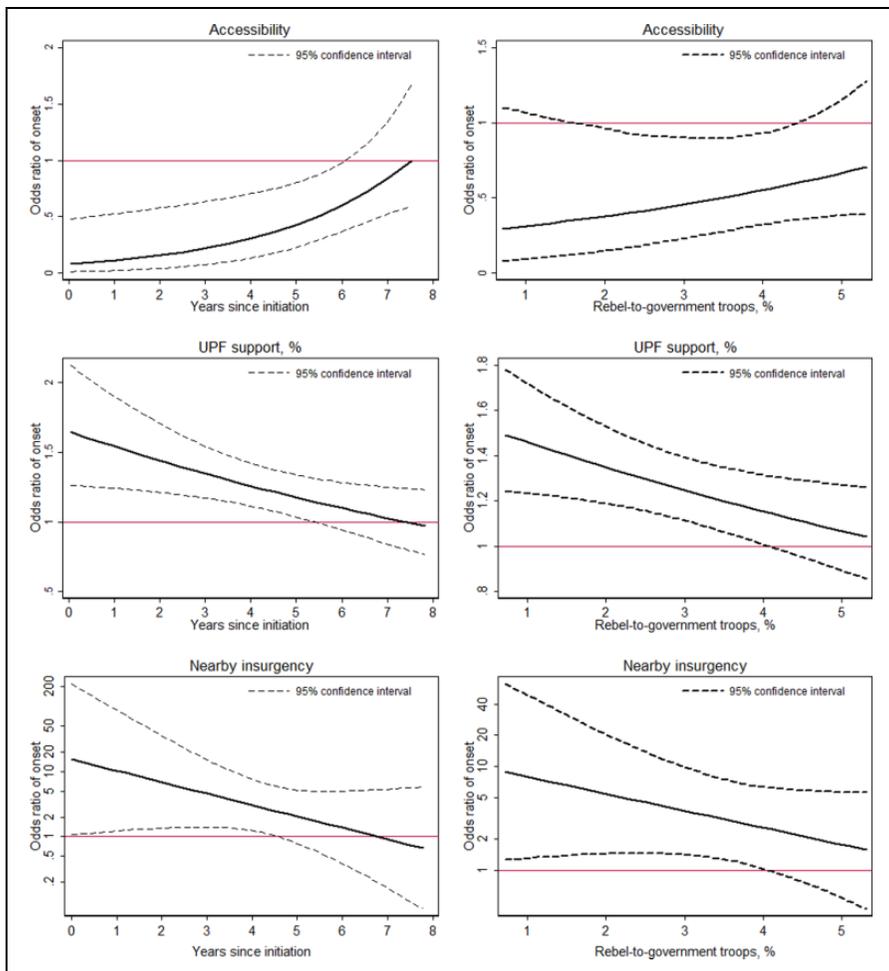
The third model employs interactions with *rebel-to-government troops* instead of *time*. The results are in agreement with the three hypotheses. The signs of all the interaction terms remain the same, but the accessibility interaction coefficient becomes somewhat weaker. In model 4, the three main variables are interacted with the second measure of relative capacity, *government force fatalities*. The results do not change much, providing additional support for the argument that relative capacity moderates the role of accessibility, preexisting rebel ties, and nearby insurgency.

Neither of the two socioeconomic control variables, *HDI* and *tenants*, significantly affects the likelihood of onset, which indicates that socioeconomic conditions played a lesser role in insurgency processes in Nepal than what previous studies have suggested (e.g., Do and Iyer 2010; Joshi and Mason 2008).<sup>29</sup> *Radio ownership*, *hill high castes*, and *communist mandates* are also not significantly associated with insurgency onset. Somewhat unexpectedly, *Magars* is significantly related to a lower chance of onset in the final three models. Finally, a larger district population is positively associated with onset, as expected.

The three hypotheses can only be properly assessed through a more complete demonstration of contingent effects. I use a simulation-based approach to estimate the main variables' effects on the likelihood of onset at different levels of *time* since initiation and *rebel-to-government troops* (Brambor, Clark, and Golder 2006). Figure 4 shows the estimated relative change in the odds of onset when moving the continuous variables, *UPF support* and *accessibility*, from the lower to the upper quartile, and the dichotomous variable, *nearby insurgency*, from 0 to 1, over different values of *time* (left panels) and *rebel-to-government troops* (right panels).

The topmost panels show how the effect of *accessibility* on the likelihood of onset changed over time and relative capacity. Consistent with Hypothesis 1, inaccessible districts were more likely to see insurgency when the rebels were weak, but the variable's impact declined as time passed and the rebels gained strength. When the rebels were at their weakest, districts in the upper *accessibility* quartile had an estimated 70 percent (+22/–83 percent) lower odds of onset than districts in the lower *accessibility* quartile. The reduction in impact is clearest for the interactions with *time*: at the end of the period, inaccessible districts were no more likely to see insurgency onset than accessible districts, judging by the mean estimate. The estimate changes less, but still considerably, with rebel-to-government troops. From the lowest to the highest point of rebel strength, the variable's negative influence more than halved, according to the mean estimate. This might suggest that relative capacity was an important, although not the only, driver of temporal contingency for *accessibility*.

The middle panels show how the impact of *UPF support* varied over time and over relative capacity. The results support Hypothesis 2: when the rebels were at their weakest, the variable had a strong positive influence: the odds of onset



**Figure 4.** Contingent effect estimates. Estimated effects of main variables over time since initiation (left panels) and rebel-to-government troops (right panels).

Note: Accessibility and UPF support are moved from the lower to the upper quartile; nearby insurgency (a dummy) is moved from 0 to 1. Odds ratio = 1 (no effect) marked with a thin red line. The y = axis is logged for the nearby insurgency graphs.

increased by 50 percent ( $\pm 25$  percent) when moving from the lower quartile (0 percent of votes) to the upper quartile (3.3 percent of votes). As time passed and rebel capacity increased, its influence gradually declined. Greater UPF support was significantly related to a higher odds of onset only when the rebel army was below 4 percent of the size of the government army and up to around five years into the insurgency.

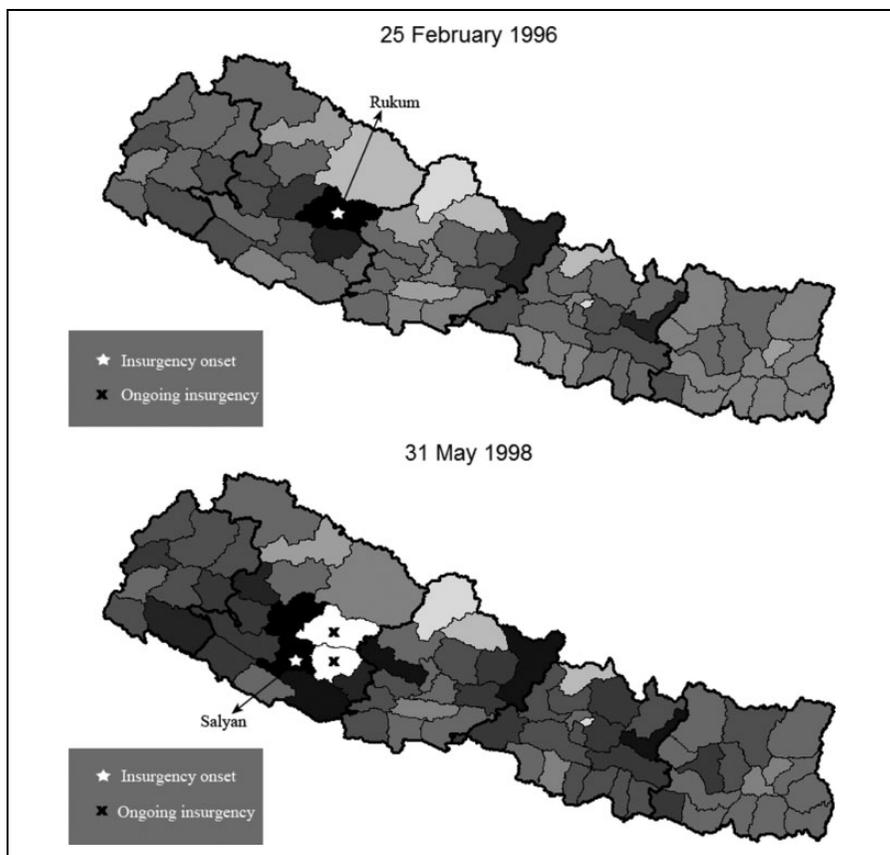
The lower panels show that the impact of *nearby insurgency* also declined with time as well as with relative insurgent strength, as suggested in Hypothesis 3. For this variable, the conditioning effect of *time* is stronger and more certain than that of *rebel-to-government troops*, however, suggesting that there might be more to the temporal contingency than changes in relative capacity. Ongoing insurgency in adjacent districts was significantly related to insurgency onset until the rebel army reached about 4 percent of the government army's size and up to around 4.5 years into the insurgency. When the rebels were at their weakest, the mean estimate suggests that nearby insurgency gave a ten times increase in the odds of onset. The size of the effect is highly uncertain, however, since very few districts had insurgency nearby in this phase.

The results are robust to changes in the operationalization of insurgency onset as well as relative capacity. The Online Appendix shows results when using a lower threshold of onset, when both rebel and government violence are included in the onset definition, when fatalities rather than violent events are used to operationalize onset, and when using rebel troop estimates from government sources. Only the interaction between *accessibility* and relative capacity is somewhat sensitive to the operationalization of onset and relative capacity.<sup>30</sup>

### Model Performance

How well do the models capture the spatiotemporal trajectory of Nepal's insurgency? I use in-sample predictions to assess this.<sup>31</sup> Since the conditional logit model does not have an intercept, the predicted probabilities cannot be compared across the entire sample.<sup>32</sup> The models can instead be evaluated by the degree to which they give higher predicted values to actual onset observations than to nononset observations on specific onset ("failure") dates. Figure 5 shows maps displaying linear predictions from model 3 as well as actual onset observations for five selected onset dates. The first map is from the first onset date in the country. The next maps show the situation for the onset date most proximate to the first onset date, February 25, with a two-year lapse. Darker colors signify higher predicted values (in log odds).<sup>33</sup> Districts with ongoing insurgency are in white.

The model predicts very well for the first date; Rukum, the district seeing onset, has the clearly highest predicted value, not the least because no district had higher preexisting Maoist support. The model performs well also for the 1998 onset; the onset district, Salyan, has the second-highest predicted value of the remaining districts. While Salyan did not have a preexisting Maoist movement, its location in the Midwestern Hills, next to districts with ongoing insurgency, made it prone to insurgency onset. Also for the February 2000 map, the onset district, Sindhupalchok, does not get the highest predicted value, but it is among the top five, due to it bordering a district with ongoing insurgency and having some preexisting Maoist support. The model does not perform equally well for the 2002 onset. By this time, several key variables in the model have lost their impact, and the onset district,



**Figure 5.** Maps of actual insurgency onsets and predicted likelihoods of onset.

Note: Darker colors signify higher predicted values of onset (in log odds). Districts with ongoing insurgency are in white.

Chitwan, gets only the eleventh highest predicted value even though it had considerable preexisting Maoist support and bordered districts with ongoing insurgency. By 2004, the majority of districts had already seen onset, and the model does not do very well in predicting the onset in Jumla, which received the seventh highest predicted value. Taken together, the maps indicate that the model performs better for the early period than the later. This makes sense because three variables—accessibility, UPF support, and nearby insurgency—played a central role in the early phase of high-power asymmetry but not in the more symmetric last phase.<sup>34</sup>

Figure 6 gives a more complete picture of the predictive performance of two of the models: model 1, which does not include interaction terms, and model 3, which includes interactions with rebel-to-government troops. It shows the percentage of onset observations that get the highest ranked predicted values (left) or among the

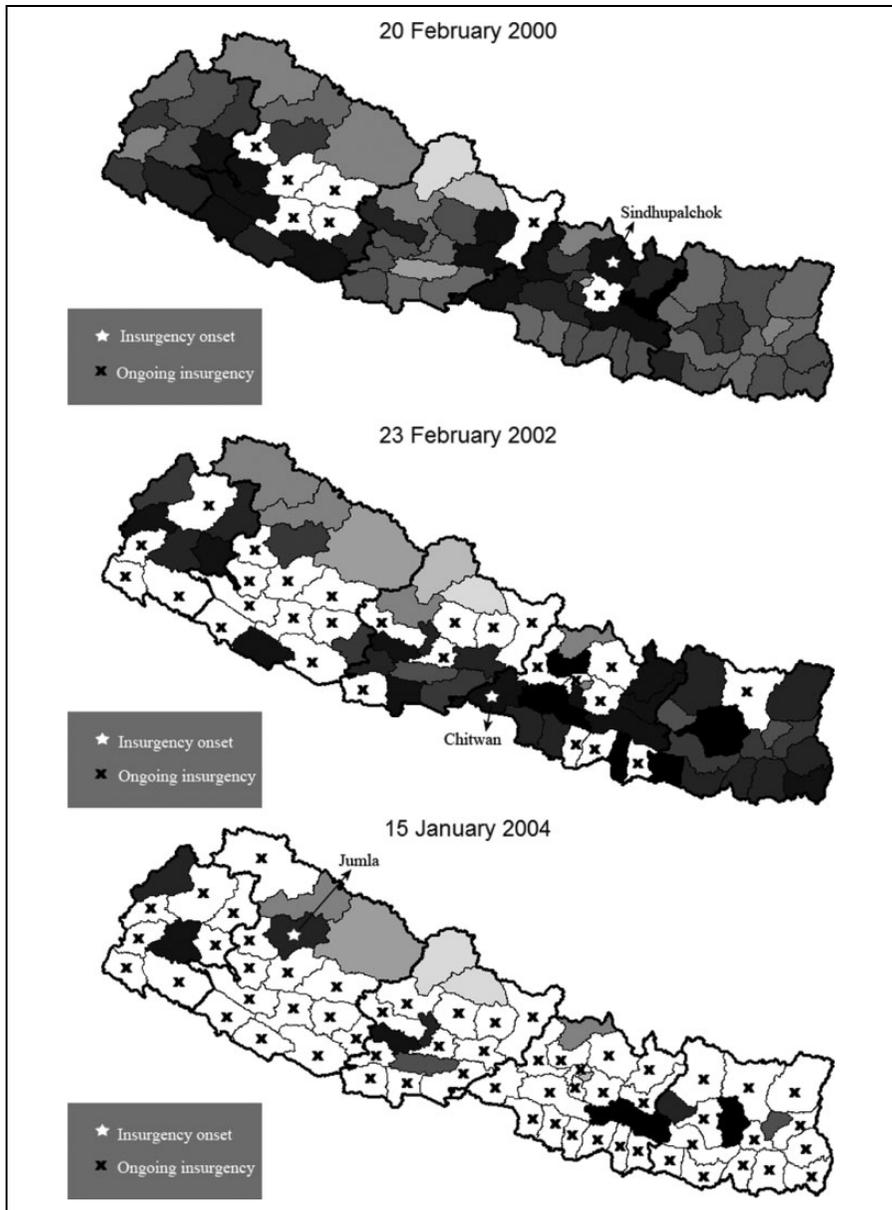
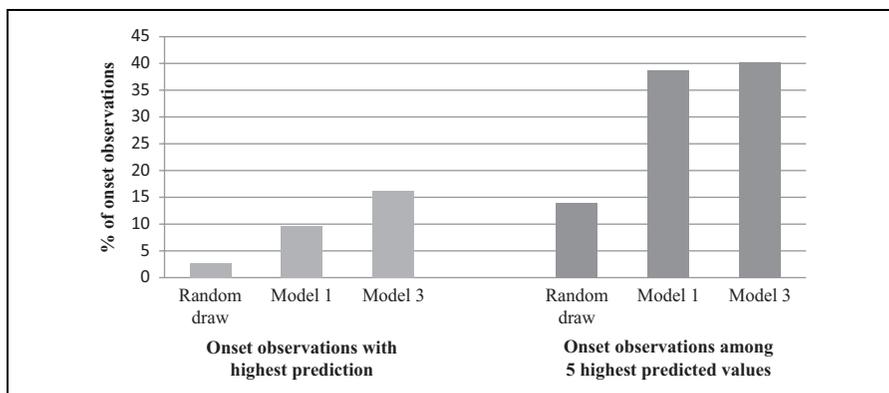


Figure 5. (Continued)

five highest values (right) on their date of onset for these two models, and compares them to the expectation from a random draw. Both models give predictions that are far more accurate than the random draw. Model 3 is much preferable to model 1 on



**Figure 6.** Predictive performance of models.

the first measure and slightly preferable for the second, which suggests that the inclusion of interaction terms improves the model's fit to the data.

## Conclusion

Despite a surge in subnational analyses of civil war processes, little has been done to explain how and where insurgencies emerge and spread within a country over time. This article has provided a framework for analyzing this question. Most important, it has shown how the mechanisms underlying the spread of insurgency are likely to change with shifts in the relative capacity of the belligerents. Insurgency can, for instance, to a greater extent be spread through use of coercion, material incentives, and movement of forces when the rebel group is strong than when it is weak. This in turn alters the impact of several local conditions on the likelihood of insurgency arising at a certain point in time. I argue that inaccessibility, preexisting rebel ties, and proximity to established insurgent bases are likely to be important determinants of insurgency during rebel weakness, but should decline in importance as rebels gain strength relative to the government.

I have shown that these arguments hold for the case of the Maoist insurgency in Nepal by combining a qualitative narrative with a statistical event history analysis. The extent to which the arguments can travel to other cases needs to be tested in future studies, however, since it places high demands on data as well as case knowledge. One plausible scope condition is that these arguments only hold for insurgencies aiming at central power and not for other types of rebel movements, like "sons-of-the-soil" movements, which may not have similar incentives to spread their activity.

The study has significant implications for the study of civil war: first, it provides a plausible explanation for the divergent conclusions from quantitative case studies about the environments most likely to attract insurgent violence; this may be due to differences in relative capacity across cases, since weak rebel groups are likely to

thrive in different environments than strong rebel groups. This insight points to the need for studies of civil war processes to take into account how macro-level changes, especially in relative capacity, may affect micro-level processes. Rather than search for the influence of various conditions on conflict processes in general, future studies should identify whether a conflict comprises episodes in which distinct processes operate and analyze the role of various conditions within each episode.

Relatedly, the findings suggest that the search for one universal effect of variables such as rough terrain or road access on the risk of civil war onset should be abandoned. These variables are likely to matter more for asymmetric conflicts than for more symmetric ones, which means that the traditional approach in cross-national research of treating civil wars as homogenous across space and time is ill suited for examining their role. More sophisticated cross-national studies will surely be made possible, however, by the ongoing development of more actor-specific and temporally disaggregated cross-national data, including on relative capacity (Cunningham, Gleditsch, and Salehyan 2013; Gleditsch, Metternich, and Ruggeri 2014).

More generally, the analysis underscores that insurgency cannot be understood as an accumulation of individuals or communities independently deciding to rebel, like some economic theories assume. It instead tends to be a highly coordinated social phenomenon in which belligerent organizations strongly shape local processes. This insight is partly incorporated in prominent theories that emphasize local sources of conflict, but still give attention to the role of belligerent organizations (e.g., Kalyvas 2006). Coordination and interdependence above the local level is nearly absent from these theories, however. To gain a broader understanding of conflict dynamics, it is not enough to study the interactions between organizations and populations in a particular locality; we must also take into account how organizations make decisions about where to invest their efforts and which tactics to apply where and when.

### **Acknowledgments**

I wish to thank Halvard Buhaug, Kristine Eck, Tanja Ellingsen, Scott Gates, Håvard Hegre, Jason Miklian, Lynn P. Nygaard, Ole Magnus Theisen, and Nils Weidmann for valuable comments. I am also grateful to the editor and the referees for many helpful suggestions. I would also like to thank Asish Subedi for skilled research assistance and INSEC for generously sharing their data.

### **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### **Funding**

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This article has been supported by the Research Council of Norway (230412/F10).

**Notes**

1. The spread of armed conflict across country borders has received some more attention (e.g., Beardsley 2011; Buhaug and Gleditsch 2008; Lake and Rothchild 1998; Salehyan and Gleditsch 2006).
2. A couple of articles analyze changes in Maoist strategy during the conflict using qualitative data (Gates and Miklian 2011; Nayak 2007). Although useful, they do not directly assess the mechanisms and conditions underlying the spread of insurgency.
3. Schutte and Weidmann use the term “escalation” instead of “expansion.”
4. This framework draws on Elkins and Simmons’s (2005) typology of clustered decision making. Notably, “diffusion” is sometimes used in a different way in the literature, as any kind of spread of something within a system.
5. The extent of relocation compared to expansion is to some extent a matter of scale: at a highly disaggregated spatiotemporal scale, one might expect violence to relocate in civil wars. This is what Zhukov (2012) finds in the North Caucasus, using the municipality month as the unit of analysis. On this scale, violence becomes rare, and it is to be expected that many of the municipalities seeing violence one month do not see violence the next month. This, however, does not necessarily mean that all insurgent activity has seized in that place and relocated elsewhere.
6. Author’s interview with Man Bahadur Buddha Magar (“Bikalpa”), UCPN-Maoist District Chairman for Rolpa, Liwang, Rolpa, March 13, 2010.
7. Author’s interviews with former Maoist combatants and villagers, Rolpa, March 2010.
8. The United People’s Front (UPF) had considerable electoral support in 1991 in these districts, especially in Gorkha (31 percent of votes) and Kavre (14 percent; Election Commission 1992).
9. Author’s interview with former Maoist combatant from Rolpa, March 13, 2010.
10. Author’s interview, Setidobhan, Syangja, April 28, 2010.
11. Author’s interviews with villagers in Rolpa, March 2010.
12. Reliable data below the district level are also lacking for several explanatory variables, such as preexisting Maoist support and poverty. The median district has an area of 1,692 square kilometers<sup>2</sup> and a population of 221,256.
13. Onset is coded for the date of the first insurgent killing followed by four additional days of insurgent killings within the span of six months. I count event days rather than events because it is sometimes unclear from Informal Sector Service Center’s (INSEC) data whether fatalities on a certain day were part of the same incident.
14. The main results are robust to changes in the operationalization of insurgency onset (Online Appendix).
15. The model is closely related to the Cox model (Cleves et al. 2008, 191). The estimates subsequently are almost exactly similar using Cox regression, and the main inferences hold for both models.
16. Indicators of prewar police and administrative capacity in the districts are lacking. This may not be as important as accessibility, however, since the government could transfer personnel between districts.

17. A formative index is created because accessibility is plausibly determined by these conditions, rather than vice versa.
18. This is a reasonably precise proxy. After the United People's Front (UPF) split in 1994, only three of its nine members of parliament joined the new Maoist party. Information is lacking on whether entire UPF district committees switched to the non-Maoist faction. Indicative that this rarely occurred, the Maoist party had district committees in thirty-five districts when insurgency began (Ogura 2008, 13), whereas the UPF received votes in forty-one districts in 1991.
19. This is a continuous variable (i.e., fractions of years are allowed).
20. I exclude militias from the measure mainly because their numbers are extremely uncertain. Full-time combatants were also the most important force due to their better armament, training, and mobility.
21. When a range is suggested, I use the mean estimate.
22. The sources are listed in the Online Appendix.
23. The three ceasefire periods were July 24 to November 22, 2001; January 29 to August 27, 2003; and September 3, 2005, to January 2, 2006 (Uppsala Conflict Data Program 2011).
24. Government estimates are missing for 2000, 2002 through 2004, and 2006. Numbers for these years are estimated by linear interpolation and extrapolation. Both measures use the Maoist commanders' estimates for 1996–1997.
25. Poverty may not be unambiguously advantageous for the rebels; however, the poor may be attracted by the salary offered to government forces or by rewards for denouncing insurgents (Berman et al. 2011).
26. Human Development Index is an equally weighted index of life expectancy at birth, gross domestic product per capita, and educational attainment (UNDP 2004, 112-16). Poverty would preferably be measured using household survey data, but existing surveys do not offer reliable district-level estimates. The Nepal Living Standards Survey I and II (Central Bureau of Statistics 2004) surveys include as few as twenty-four respondents in some rural districts.
27. "Community radio" stations began arising from 1996, but few licenses were granted before 2006 (Pringle and Subba 2007, 8-11).
28. High-caste hill groups comprise Brahmins, Chhetris, and Thakuris. I exclude high-caste groups in the Terai since the Madhesis in general have been politically marginal on the national level.
29. There is some multicollinearity, but it does not appear to be a grave concern. The highest correlated variables are *HDI* and *accessibility* ( $r = 0.60$ ) and *HDI* and *radio ownership* ( $r = 0.60$ ). variance inflation factor values (for model 1) are moderate: 4.2 for *HDI* is the highest.
30. In two of the eleven models tested, there is no sign that the impact of *accessibility* declined as the rebels grew stronger.
31. The limited sample size precludes out-of-sample predictions.
32. Common approaches, such as the receiver operating characteristic (ROC) plot, are therefore not useful.
33. I show linear predictions using a ten equal intervals scale. I do not show absolute values because they depend on the size of the remaining sample at the onset date and are therefore not readily comparable.

34. The spread of insurgency plausibly also became less predictable in general in the last phase, since the insurgents had spread their influence to all regions and had considerable capacity to project power.

### Supplemental Material

The online [appendices/data supplements/etc] are available at <http://jcr.sagepub.com/supplemental>.

### References

- Arjona, Ana, and Stathis N. Kalyvas. 2012. "Recruitment into Armed groups in Colombia: A Survey of Demobilized Fighters." In *Understanding Collective Political Violence*, edited by Yvan Guichaoua, 143-74. New York: Palgrave Macmillan.
- Beardsley, Kyle. 2011. "Peacekeeping and the Contagion of Armed Conflict." *Journal of Politics* 73 (4): 1051-64.
- Beber, Bernd, and Christopher Blattman. 2013. "The Logic of Child Soldiering and Coercion." *International Organization* 67 (1): 65-104.
- Berman, Eli, Michael Callen, Joseph H. Felter, and Jacob N. Shapiro. 2011. "Do Working Men Rebel? Insurgency and Unemployment in Afghanistan, Iraq, and the Philippines." *Journal of Conflict Resolution* 55 (4): 496-528.
- Brambor, Thomas, William Roberts Clark, and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14 (1): 63-82.
- Buhaug, Halvard. 2010. "Dude, Where's My Conflict? LSG, Relative Strength, and the Location of Civil War." *Conflict Management and Peace Science* 27 (2): 107-28.
- Buhaug, Halvard, and Kristian Skrede Gleditsch. 2008. "Contagion or Confusion? Why Conflicts Cluster in Space." *International Studies Quarterly* 52 (2): 215-33.
- Butler, Christopher, and Scott Gates. 2009. "Asymmetry, Parity, and (Civil) War: Can International Theories of Power Help Us Understand Civil War?" *International Interactions* 35 (3): 330-40.
- Central Bureau of Statistics. 2004. *Nepal Living Standards Survey (NLSS) 2003/04: Statistical Report, Volume One*. Kathmandu, Nepal: CBS.
- Christia, Fotini. 2012. *Alliance Formation in Civil Wars*. New York: Cambridge University Press.
- Cleves, Mario A., William W. Gould, Roberto G. Gutierrez, and Yulia U. Marchenko. 2008. *An Introduction to Survival Analysis Using Stata*. College Station, TX: StataCorp.
- Collier, Paul, and Anke Hoeffler. 2004. "Greed and Grievance in Civil War." *Oxford Economic Papers* 56 (4): 563-95.
- CPN-Maoist. 2001. *The Great Leap Forward: An Inevitable Need of History*. Report, Second National CPN-Maoist Conference, February. Accessed November 26, 2010. <http://www.ucpnm.org/english/doc7.php>.
- Cunningham, David E., Kristian Skrede Gleditsch, and Idean Salehyan. 2013. "Non-state Actors in Civil Wars: A New Dataset." *Conflict Management and Peace Science* 30 (5): 516-31.
- de Sales, Anne. 2000. "The Kham Magar Country, Nepal: Between Ethnic Claims and Maoism." *European Bulletin of Himalayan Research* 19:41-71.

- Do, Quy-Toan, and Lakshmi Iyer. 2010. "Geography, Poverty and Conflict in Nepal." *Journal of Peace Research* 47 (6): 735-48.
- Eck, Kristine. 2010. "Recruiting Rebels: Indoctrination and Political Education in Nepal." In *The Maoist Insurgency in Nepal: Revolution in the Twenty-first Century*, edited by Mahendra Lawoti and Anup K. Pahari, 33-51. New York: Routledge.
- Election Commission. 1992. *General Election in Nepal 1991*. Kathmandu, Nepal: Election Commission.
- Elkins, Zachary, and Beth A. Simmons. 2005. "On Waves, Clusters, and Diffusion: A Conceptual Framework." *Annals of the American Academy of Political and Social Science* 598:33-51.
- Fearon, James D., and David D. Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *American Political Science Review* 97 (1): 75-90.
- Fireman, Bruce, and William Gamson. 1979. "Utilitarian Logic in the Resource Mobilization Perspective." In *The Dynamics of Social Movements*, edited by Mayer N. Zald and John D. McCarthy, 8-44. Cambridge, MA: Winthrop.
- Gates, Scott, and Jason Miklian. 2011. "Strategic Revolutionary Phases of the Maoist Insurgency in Nepal." In *Warfare and Politics in South Asia from Ancient to Modern Times*, edited by Kaushik Roy, 415-38. New Delhi, India: Manohar.
- Gersony, Robert. 2003. *Sowing the Wind . . . : History and Dynamics of the Maoist Revolt in Nepal's Rapti Hills*. Report, Mercy Corps International, Portland, OR. Accessed December 2, 2010. [http://pdf.usaid.gov/pdf\\_docs/PNACW353.pdf](http://pdf.usaid.gov/pdf_docs/PNACW353.pdf).
- Gleditsch, Kristian Skrede, Nils W. Metternich, and Andrea Ruggeri. 2014. "Data and Progress in Peace and Conflict Research." *Journal of Peace Research* 51 (2): 301-31.
- Guevara, Che. (1961) 1998. *Guerilla Warfare*. Lincoln: University of Nebraska Press.
- Holtermann, Helge. 2014. "How Can Weak Insurgent Groups Grow? Insights from Nepal." *Terrorism and Political Violence*. DOI: 10.1080/09546553.2014.908775.
- Hultman, Lisa. 2007. "Battle Losses and Rebel Violence: Raising the Costs for Fighting." *Terrorism and Political Violence* 19 (2): 205-22.
- Humphreys, Macartan, and Jeremy M. Weinstein. 2008. "Who Fights? The Determinants of Participation in Civil War." *American Journal of Political Science* 52 (2): 436-55.
- ICG (International Crisis Group). 2005. *Nepal's Maoists: Their Aims, Structure and Strategy*. ICG Asia Report Nr 104. Kathmandu, Nepal.
- ICG (International Crisis Group). 2006. *Nepal: From People Power to Peace?* ICG Asia Report Nr 115. Kathmandu, Nepal.
- ICG (International Crisis Group). 2011. *Nepal: Identity Politics and Federalism*. ICG Asia Report Nr 199. Kathmandu, Nepal.
- INSEC (Informal Sector Service Center). 2010. Events Data of Victims of Violence during the Maoist Conflict, 1996–2006. Based on Nepal Human Rights Yearbooks, 1996–2006.
- International Institute for Strategic Studies. 1996/1997–2006/2007. *The Military Balance*. Annual Reports. London: Oxford University Press.
- Joshi, Madhav, and T. David Mason. 2008. "Between Democracy and Revolution: Peasant Support for Insurgency versus Democracy in Nepal." *Journal of Peace Research* 45 (6): 765-82.

- Kalyvas, Stathis N. 2006. *The Logic of Violence in Civil War*. New York: Cambridge University Press.
- Kalyvas, Stathis N., and Laia Balcells. 2010. "International System and Technologies of Rebellion: How the End of the Cold War Shaped Internal Conflict." *American Political Science Review* 104 (3): 415-29.
- Lake, David A., and Donald S. Rothchild, eds. 1998. *The International Spread of Ethnic Conflict: Fear, Diffusion, and Escalation*. Princeton, NJ: Princeton University Press.
- Lecomte-Tilouine, Marie. 2009. "Terror in a Maoist Model Village, Mid-western Nepal." *Dialectical Anthropology* 33 (3-4): 383-401.
- Leites, Nathan, and Charles Wolf. 1970. *Rebellion and Authority: An Analytic Essay on Insurgent Conflicts*. Chicago: Markham.
- Lipsky, Michael. 1968. "Protest as a Political Resource." *American Political Science Review* 62 (4): 1144-58.
- Lockyer, Adam. 2010. "The Dynamics of Warfare in Civil War." *Civil Wars* 12 (1-2): 91-116.
- Marks, Thomas A. 2003. "Insurgency in Nepal." Report, Strategic Studies Institute. <http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=49>. (Accessed April 11, 2012).
- McCull, Robert W. 1969. "The Insurgent State: Territorial Bases of Revolution." *Annals of the Association of American Geographers* 59 (4): 613-31.
- Mehta, Ashok K., and Mahendra Lawoti. 2010. "Military Dimensions of the 'People's War': Insurgency and Counter-insurgency in Nepal." In *The Maoist Insurgency in Nepal: Revolution in the Twenty-first Century*, edited by Mahendra Lawoti and Anup K. Pahari, 175-94. New York: Routledge.
- Murshed, S. Mansoob, and Scott Gates. 2005. "Spatial-horizontal Inequality and the Maoist Insurgency in Nepal." *Review of Development Economics* 9 (1): 121-34.
- Myers, Daniel J. 2000. "The Diffusion of Collective Violence: Infectiousness, Susceptibility, and Mass Media Networks." *American Journal of Sociology* 106 (1): 173-208.
- Nayak, Nihar. 2007. "The Maoist Movement in Nepal and its Tactical Digressions: A Study of Strategic Revolutionary Phases, and Future Implications." *Strategic Analysis* 31 (6): 915-42.
- Nepal, Mani, Alok K. Bohara, and Kishore Gawande. 2011. "More Inequality, More Killings: The Maoist Insurgency in Nepal." *American Journal of Political Science* 55 (4): 886-906.
- Ogura, Kiyoko. 2005. "Maoist People's Governments, 2001-05: The Power in Wartime." In *Local Democracy in South Asia: Microprocesses of Democratization in Nepal and its Neighbours*, edited by David N. Gellner and Krishna Hachethu, 175-231. New Delhi: Sage.
- Ogura, Kiyoko. 2008. *Seeking State Power: The Communist Party of Nepal(Maoist)*. Report. Berlin: Berghof Center.
- Oliver, Pamela E. 1989. "Bringing the Crowd Back In: The Nonorganizational Elements of Social Movements." *Research in Social Movements, Conflict and Change* 11:1-30.
- Onesto, Li. 2000. "Red Flag Flying on the Roof of the World: Inside the Revolution in Nepal: Interview with Comrade Prachanda." *Revolutionary Worker* Nr. 1043, February 20. Accessed December 2, 2010. <http://www.revcom.us/a/v21/1040-049/1043/interv.htm>.

- Onesto, Li. 2005. *Dispatches from the People's War in Nepal*. London: Pluto Press.
- Petersen, Roger D. 2001. *Resistance and Rebellion: Lessons from Eastern Europe*. New York: Cambridge University Press.
- Pettigrew, Judith, and Kamal Adhikari. "Fear and Everyday Life in Rural Nepal." *Dialectical Anthropology* 33 (3-4): 403-22.
- Pringle, Ian, and Bikram Subba. 2007. *Ten Years On: The State of Community Radio in Nepal*. Report prepared for UNESCO. Paris: UNESCO.
- Raknerud, Arvid, and Håvard Hegre. 1997. "The Hazard of War: Reassessing the Evidence for the Democratic Peace." *Journal of Peace Research* 34 (4): 385-404.
- Raleigh, Clionadh, and Håvard Hegre. 2009. "Population Size, Concentration, and Civil War: A Geographically Disaggregated Analysis." *Political Geography* 28 (4): 224-238.
- Ramirez, Philippe. 2004. "Maoism in Nepal: Towards a Comparative Perspective." In *Himalayan "People's War": Nepal's Maoist Rebellion*, edited by Michael Hutt, 225-42. London: Hurst.
- Roy, Anirban. 2008. *Prachanda: The Unknown Revolutionary*. Kathmandu: Mandala Book Point.
- Salehyan, Idean, and Kristian Skrede Gleditsch. 2006. "Refugees and the Spread of Civil War." *International Organization* 60 (2): 335-66.
- Sánchez, Fabio, Andrés Solimano, and Michel Formisano. 2005. "Conflict, Violence, and Crime in Colombia." In *Understanding Civil War, vol 2*, edited by Paul Collier and Nicholas Sambanis, 119-60. Washington, DC: World Bank.
- Schutte, Sebastian, and Nils B. Weidmann. 2011. "Diffusion Patterns of Violence in Civil Wars." *Political Geography* 30 (3): 143-52.
- Tilly, Charles. 1978. *From Mobilization to Revolution*. New York: McGraw-Hill.
- Townsley, Michael, Shane D. Johnson, and Jerry H. Ratcliffe. 2008. "Space Time Dynamics of Insurgent Activity in Iraq." *Security Journal* 21 (3): 139-46.
- Uppsala Conflict Data Program. 2011. *UCDP Conflict Encyclopedia*. Accessed December 28, 2011. <http://www.ucdp.uu.se/database>.
- UNDP (United Nations Development Programme). 2004. *Human Development Report, Nepal*. Kathmandu: UNDP.
- Viterna, Jocelyn S. 2006. "Pulled, Pushed, and Persuaded: Explaining Women's Mobilization into the Salvadoran Guerrilla Army." *American Journal of Sociology* 112 (1): 1-45.
- Weinstein, Jeremy M. 2007. *Inside Rebellion: The Politics of Insurgent Violence*. Cambridge, MA: Cambridge University Press.
- Wickham-Crowley, Timothy P. 1992. *Guerrillas and Revolution in Latin America: A Comparative Study of Insurgents and Regimes since 1956*. Princeton, NJ: Princeton University Press.
- Wood, Elisabeth Jean. 2003. *Insurgent Collective Action and Civil War in El Salvador*. New York: Cambridge University Press.
- Zhukov, Yuri M. 2012. "Roads and the Diffusion of Insurgent Violence: The Logistics of Conflict in Russia's North Caucasus." *Political Geography* 31 (3): 144-56.