Armed Conflict, Social Support, and Migration:

The Impact of the Maoist Insurrection on Migration Behavior in Nepal

March 8, 2008

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ABSTRACT

This is a theoretical and empirical study of the effects of armed conflict and social support on migration. While we understand that people migrate away from conflict, there is little research examining why some people migrate and others do not. In this paper, I examine how psycho-social support organizations moderate the relationship between conflict and migration. Using the Maoist insurrection in Nepal as a case study, I use data from a monthly panel study to create event history models that test the effect of the conflict and specific violent events on migration, and the interaction of psycho-social support organizations with violence. Results show that migration decreased during the general period of conflict and in months following low violence, but increased after months of high violence. Additionally I show that psycho-social support organizations such as temples, monasteries, social groups, and urban residence decrease the effect of the conflict on migration.

INTRODUCTION

In the past several decades, migration research has examined various macro-, meso-, and micro-level causes of migration. Migration studies have been particularly successful in connecting macro-level economic circumstances to meso- and micro-level characteristics and how this affects migration decision-making. We now have a better understanding of how macro-level economic changes affect migration streams and how community and individual characteristics such as community services, wealth, occupation, education, and social networks affect the selection in who migrates and who does not migrate under given macro-level economic circumstances. However, there has been very little attention in the migration literature to how macro-level armed conflict affects international and internal migration streams.

Although the area of forced migration, or refugee studies, has grown immensely in the last several decades, the study of the causes of forced migration has played a very small role in this undertaking. There is a significant body of research from the political science perspective on the root causes and proximate causes of forced migration that concludes that violent conflict causes forced migration. However, there is almost no acknowledgement of individual agency, or that people may choose not to migrate away from conflict, which is in fact the reality in any given conflict. There is almost no work from the sociological perspective that examines why individuals may choose to migrate or not migrate when subjected to macro-level violence. It is widely acknowledged that this area of study suffers from a lack of a consolidated body of theory and systematic empirical studies (Black 2001, Castles 2003). The question here is not whether people migrate away from conflict, this we know from the millions of refugees and IDP's in the world. The pertinent questions are- why do some people migrate away from conflict and some people do not, how many people migrate away, and what about conflict causes people to migrate away. These questions are not only theoretically interesting, but they are also important for policy and planning.

This study is designed to address this gap. Using a standard threat-based decision model from forced migration studies as a base, I develop a more intricate model of migration during conflict that takes into account different levels and types of violence as well as community-level social support that may moderate the relationship between conflict and migration. My theoretical framework addresses these questions in general. Then, I use the recent Maoist insurrection in Nepal as a case study to empirically test these theories.

THEORETICAL FRAMEWORK

The dominant explanatory model of migration during violent conflict (and the only theory that has been systematically empirically tested in the literature) is a simple threat-based decision model. This model argues that potential migrants base their decision to migrate away from a conflict on the perceived threat to their personal security. When the perceived threat to their security increases beyond an acceptable level, they migrate away. This model is explained in further detail in Davenport et al, 2003 and Moore and Shellman, 2004. Recent empirical studies have found strong support for this model (Clark 1989, Davenport et al 2003, Edmonston and Lee 1992, Gibney, Apodaca and McCann 1996, Moore and Shellman 2004, Schmeidl 1997, Weiner 1996, Zolberg et al

1989).   The outcome of these studies is that there is strong and consistent evidence that refugees flee from generalized violence.

This threat-based decision model is an important base from which to examine migration from conflict and has strong empirical support. However, it is overly simplistic and fails to explain the variation in migrants leaving any given conflict. This theory does not address the numerous social, economic, and psychological intervening and moderating factors that may make individuals willing and able or not willing and not able to migrate. As a result of these limitations of the dominant threat-based decision model in the study of migration during conflict, we are yet unable to thoroughly understand variations in refugee or migration flows from areas affected by macro-level conflict. We cannot clearly explain the varying size of migration streams- why do some conflicts result in larger migrations streams than others? We also cannot explain the selection in migration streams- why do some people migrate and some people not migrate, and how are these people different? I propose here that some variation in migration during conflict could be explained by examining levels of violence and community-level psycho-social institutions.

Conflict and Migration
Assuming that during violent conflict, individuals at least partially make migration decisions based on the desire for personal safety, it is important to examine what the safest migration option might be. The decision whether it is safer to migrate or to stay could depend largely on individuals' perceptions of the level of violence to which they are exposed. Perceptions of the level of violence or physical threat may be formed by such things as the number of violent incidents, for example the number of bomb blasts or the number of gun battles may be important. A larger number of bomb blasts may lead people to perceive a greater threat than a smaller number of bomb blasts. In addition, different kinds of violent events may affect individuals' perception of threat. For example, gun battles may be more threatening than small bomb blasts, which in turn may be more threatening than conscription, taxing, or billeting.

At lower perceived levels of violence, the safest option may be to stay at home and not migrate. In this case, we would expect lower than normal rates of out-migration. However, at higher perceived levels of violence, people may feel threatened even in their own homes and communities. In this case, the safest option may be to migrate away. Thus, at higher levels of violence, we would expect higher than normal rate of out-migration. Therefore, I predict that there is a threshold effect of conflict on migration behavior- under a certain threshold of violence, increasing violence will decrease rates of out-migration; above that threshold however, increasing violence will increase rates of out-migration.

Conflict, Social Support and Migration
Exposure to violent conflict can induce fear for one's safety as well as psychological trauma. It is through these mechanisms that the threat-based decision model predicts that conflict affects individuals' migration decisions. Social support in a community may serve as a mechanism that can increase the psychological resilience of individuals and the ability to cope with conflict.

The literature on psychological responses to conflict and other disasters has found that psycho-social support plays an important role in moderating psychological responses and coping behaviors to conflict and other disasters. The Conservation of Resources theory proposed by Hobfoll argues that "People, groups, or organizations that are endowed with strong personal or social resource reserves should better resist the deleterious effects of stress and withstand everyday challenges." (Hobfoll and Lilly 1993). Subsequent empirical studies on disasters support this proposition. Several studies of responses to conflict and natural disasters find that individuals experienced less distress after disasters if they experienced higher social embeddedness (Carr, et al 1997, Cleary and Houts 1984, Jenkins 1997), more received social support (Galea et al 2002, Kwon et al 2001, Norris and Kaniasty 1996), and higher perceived social support (Bromer et al 1982, Creamer et al 1993, Ullman and Newcomb 1999). Based on a literature review of 160 empirical studies of violent conflict and natural disasters, Norris et al state, "[Psycho-social resources] undoubtedly account for the overall resilience many, if not most, people show in the face of even quite serious stress." (Norris et al 2002:247).

These studies all address psychological responses to disasters. They do not examine how this affects behavior. In this study, I extend this theory and propose that community-level social support increases the ability to cope with and adapt to conflict, which in turn decreases behavioral responses to conflict, including migration behavior responses. Specifically, I predict that access to social support organizations in the community will decrease the effect of violent conflict on migration. Community-level social support can include formal organizations such as community groups, community meeting places, religious institutions, and government social services, as well as informal social relationships, such as friends and neighbors.

SETTING AND CONTEXT

The context of this study is the Maoist insurrection in Nepal. My data analysis is based in the Chitwan Valley of south-central Nepal. The valley is flat, fertile, and dominated by agriculture. The administrative district of Chitwan borders India and is about 100 miles from Kathmandu. There is one large city, Narayanghat, and the rest of Chitwan's population, like much of Nepal, lives in small, rural villages. Most villages are connected to other villages and larger roads by paths or dirt roads.

Historically, there has been a large amount of migration from the Chitwan Valley to other areas of Nepal, but also notably to nearby areas of India. Much of migration is seasonal and is viewed as a strategy to supplement regular farm and household incomes (Thieme and Wyss 2005, Kollmair et al 2006). During low periods of the harvest and planting cycle, it is common for small farmers to migrate to India and work as seasonal laborers in the larger labor markets in India. Nepal and India share an open border, so there are no restrictions on Nepalese cross-border travel to India, making this international migration no more difficult than migration to other areas of Nepal. The 2001 census estimated that 2.5-5% of Chitwan residents were living abroad in 2001 (HMG et al 2002). Data from a nationally representative sample survey allow us to estimate that about as many Chitwan residents are internal migrants (HMG 2004).

The Maoist insurrection in Nepal began in 1996. Following a relatively unsuccessful political campaign, the Communist Party of Nepal (Maoist) made a formal

declaration of "People's War" on February 13, 1996, with the aim to unseat the current constitutional monarchy and install a democratic republic. They charged the government with poor administration, corruption, unfair taxation, and neglect of poor rural areas of the country.

The earlier stages of the insurrection were contained primarily in several mid-western districts (around Rolpa, Rukum, Jajarkot, Salyan, Pyuthan, and Kalikot) and aimed at damage to government installations and communication infrastructure, capturing weapons, and threatening government security forces. From mid-2000 however, the Maoists progressively expanded their campaign nationwide, spreading first into the far eastern districts and then across rural areas of most of the country. In January 2001, the Nepalese government responded by creating a special armed police force to fight the Maoists. Since then, the government has generally maintained control of cities and large towns and the Maoists have controlled a majority of the rugged countryside of Nepal where communication and transportation are difficult. By 2001, the Maoists were operating in 68 of Nepal's 75 administrative districts (South Asia Terrorism Portal 2006a). The Maoists have in fact come close to the capital, when in March 2006 they launched a successful week-long blockade of Kathmandu. In June 2006 serious peace talks commenced and on November 21, 2006, the government and Maoists signed a comprehensive peace agreement declaring an end to the conflict.

Because this conflict was staged mainly as a guerrilla war, there was generally no 'frontline', it was largely unknown where fighting would break out, and civilians were often unintentionally caught up in firefights, other skirmishes, and bomb blasts. In addition, both Maoists and government forces intentionally targeted civilians for political purposes. Reported violent acts by the Maoists and Nepalese government security forces against civilians include torture, extra-judicial killings (both discriminate and indiscriminate), bombings, gun fights, abductions, forced conscription, billeting, taxing, and general strikes (South Asia Terrorism Portal 2006b, Hutt 2004, Pettigrew 2004). The government called a State of Emergency and instituted martial law twice, in 2001 and 2005. From 2000 until the end of 2006, the Maoists were responsible for a total of 4312 deaths (civilians and government forces) and the government forces were responsible for 7544 deaths (civilians and Maoist forces) (Informal Sector Service Center 2006).

Throughout the conflict, the Chitwan Valley has remained one of the safer, less affected districts in Nepal. This is mainly because it is located far from the western regions of the country where the Maoist insurrection started and has raged the strongest and far from the capital and government stronghold of Kathmandu. Between 1996 and April 2006, Chitwan has experienced 194 conflict related fatalities (Informal Sector Service Center 2006). This is just higher than the average number of fatalities of all districts, but much lower than the fatality toll of the most-affected western districts that have experienced from 300 to 950 deaths each throughout this same time period (Informal Sector Service Center 2006). Other violent disturbances in Chitwan have been infrequent. There were a few bomb blasts, the great majority in 2003 and 2004, the largest of which injured or killed 17 people. There was one major gun battle between Maoists and security forces in June 2005 that resulted in 34 civilian fatalities. There have been no abductions of large groups, but a few single people were abducted in 2003 and 2004. Along with these visible and countable disturbances, the people of Chitwan Valley

have been subjected to taxes, billeting, conscription (by both Maoists and the government), curfews, and general strikes.

DATA AND MEASURES
For this study, I use three separate kinds of data - survey data about individuals, survey data about neighborhoods, and news reports about events involved with the conflict. I use individual and neighborhood survey data from the Chitwan Valley Family Study (CVFS), a prospective panel survey of individual and community change in a 93 square mile area of the western part of the Chitwan Valley of Nepal. In addition to other information, it records residence histories of individuals on a monthly basis. It also provides time-varying neighborhood-level records of available services and community groups. The data set I use spans a period of nine years, starting in 1997, three years before the outbreak of nation-wide violence, and continuing for six more years during the violence until January 2006. As such, the CVFS is a particularly unique opportunity to study migration patterns during armed conflict in comparison with migration patterns during the 'normal' times before the conflict.

The CVFS surveys individuals living in 151 separate communities. Communities in the study were selected by an equal probability, systematic sample; all individuals between the ages of 15 and 59 and their spouses within these neighborhoods were included in the survey. At 97% of the original sample, the response rates are exceptional. For this study, I use only those individuals who were resident in the Chitwan Valley study area in the beginning of 1997, and not those who moved in after that date. There are 3882 of these original residents.

Individual-Level Survey data
For my analysis, I define '*migration*' as a move of at least one month from the 1997 neighborhood. Over the course of the nine years of this study, 2463 people, or 63% of the original respondents migrated out at least once. Given the high frequency of migration in the Chitwan Valley, and all of Nepal, this is not a surprising number.

I include ethnicity as a control variable in this analysis because it is a salient factor in all aspects of Nepali life, including place of residence, livelihood strategies, economic circumstances, political relationships, and opportunities. For this study, the 53 different castes were coded into five functional ethnic groups: Upper-Caste Hindu, Lower-Caste Hindu, Newar, Hill Tibeto-Burmese, and Terai Tibeto-Burmese. Upper-Caste Hindu was the largest ethnic group represented in the CVFS.

I include the place of birth as a dichotomous variable to differentiate those who were born in Chitwan from those who were not. The dependent variable of this study is the first move away from Chitwan, as opposed to the first move of an individual's life. Earlier migrations (when an individual moved to Chitwan) could have a large effect on their subsequent propensity to move away from Chitwan (Massey and Espinosa 1997). Thus by separating those who were born in or outside the study area, we are effectively controlling for previous migrations.

I use a spline function to measure age. This allows my models to be sensitive to rates of migration that change non-linearly with age. For instance, there is strong and consistent evidence that individuals in their late teens have relatively high rates of migration, this increases in the early 20's, and after this individuals have progressively

lower rates of migration. Thus I created four age categories as follows: 15-25 years old, 26-35 years old, 36-45 years old, and 45 and older.

I also use a dichotomous measure of sex. 55% of respondents are female and 45% are male.

Other control variables include *Months of the* Year, and *Distance from* Narayanghat. '*Months of the year*' is a series of dichotomous variables for each month of the year that allow my models to control for normal seasonal migration patterns. *Distance from Narayanghat* is a continuous measure of distance from the city of Narayanghat, the one urban area in the Chitwan Valley.

Community-Level Social Support Data

I use four three dichotomous measures from the neighborhood-level data of the CVFS to capture the concept of community psycho-social support.

Temples provide individuals with religious or spiritual support. In Nepal, people can visit temples at any time in order to perform personal worship ceremonies (puja). Although there is no prescribed time at which people must visit temples, most people go to perform puja in the mornings. Thus, in addition to providing spiritual support and solace, temples also serve as a community meeting place. I use a dichotomous measure for temples, that is coded '1' if there is a temple within ten minutes walk of a neighborhood, and '0' if there is not.

Monasteries provide similar functions to temples. In addition to resident monks, Buddhist as well as Hindu lay people visit monasteries to pray, receive spiritual support and solace, and also meet others in the community. I use a dichotomous measure for monasteries that is coded '1' if there is a monastery within 30 minutes walk of a neighborhood, and '0' if there is not. I use a longer distance for monasteries than for temples because there are fewer monasteries in the Chitwan area.

There are various social groups available in the Chitwan Valley that provide a forum for discussion on specific topics, psycho-social support for members, and encourage non-family social networking. I use a measure for *Social Groups* that is coded '1' if there is a women's group, user's group, mother's groups, youth group, health group, or any other socially-oriented group within the community. This does not include community groups that are financially- or investment- oriented.

Finally, I use a dichotomous measure of urban residence that is coded '1' if an individual lives within five miles of the urban area Narayanghat. Residence in an urban area is a broad measure that can indicate the presence of a variety of psycho-social and security organizations and opportunities. Increased population density can provide a sense of 'safety in numbers' and it generally fosters social networking and more non-family relationships. In urban areas there is a greater concentration of social services and community groups. There is also a greater presence of police, army, and security personnel.

Violent Events Data

For records of violent events and significant political events, I used various public news sources. My primary source of records on bomb blasts and major gun battles is the South Asia Terrorism Portal (SATP). This is an Indian-based NGO that collects and disseminates information, data, and research results on problems of internal security

across South Asia. All the event records that I used were "compiled from official sources and the English language media in Nepal." I also used major English language newspapers to validate the accuracy of events reported by SATP.

I use a dichotomous measure to denote the general period of the conflict. There is no official starting date for the violence of the Maoist insurrection. I define '*During War*' from September 2000 until the end of my study in January 2006. September 2000 approximately marks a "turning point" in the insurrection (Hutt 2004), when the Maoists escalated their violent campaign and began to expand nationwide. In response, the government created the armed police force specifically to fight the Maoists. The number of fatalities from this time on changed the insurrection from a low-intensity, to a high-intensity conflict (Pettigrew 2004, Wallensteen and Sollenberg 2000).

I created measures of the number of violent events per month, including bomb blasts and major gun battles in the local area. I define the local area as Chitwan and the six neighboring districts—Nawalparasi, Tanahu, Gorkha, Dhading, Makwanpur, and Parsa. Bomb blasts began to occur in Chitwan and neighboring districts every month starting in September 2003. The largest number of blasts in one month was 12, in July of 2004. Major gun battles in this area were sporadic. Often there were several months in a row without any gun battles. The largest number of major gun battles in one month in this area was four, in April 2005. Two months later, in June 2005, there was only one major gun battle, in Chitwan district. However this battle is notable in that it resulted in 34 civilian fatalities.

In this context, bombs are generally small, homemade, and less destructive than in other areas. They can range from a small pipe bomb that may only be capable of blowing a window out of a shop and causing few to no injuries, to more destructive (but less common) devices that can kill 10's of people. During this conflict, bomb blasts injured or killed an average of three people per blast (South Asia Terrorism Portal 2006b). While bomb blasts in this context do cause fear and destruction, their destructive and disruptive power may be less than the reader realizes.

On the other hand, major gun battles are very destructive and disruptive. For my analysis, they are defined as any gun battle that involves at least several people on each side. Civilians were involved in gun battles as both unintended casualties, observers, and participants. In many cases, civilians were used as human shields and were conscripted to clear dead and wounded bodies (Sainju-Pradhan 2007). Major gun battles resulted in a range of casualties from 0 to 234 people each. The average number of people killed per major gun battle is 31. The largest number of civilians that were killed in the local Chitwan area is 34.

As I mentioned earlier, all records of events that I used are from Nepali newspapers and SATP that also uses news reports as a major source of data. As always, the accuracy, or more to the point- the inaccuracy, of these news reports should be examined, particularly in the case of Nepal, a country that has been repeatedly accused of severely restricting freedom of the press (Amnesty International 2005, International Federation of Journalists 2006, United Nations Office of the High Commissioner for Human Rights 2005). The government has been accused of falsifying official figures of casualties from the insurgency (Dixit 2002, Hutt 2004). In fact, it is argued that "for greater precision government casualties be doubled and Maoist losses be halved against official figures." (Mehta 2002).

While news reports of the number of deaths or injuries are likely less accurate, reports that an event happened and the time and date of the event are likely to be more accurate. It is easier to misrepresent the size or impact of an event such as a gun battle than it is to misrepresent that it happened at all. For this reason, I use records of events (bomb blasts and major gun battles) and not the number of people that were involved in each event.

ANALYTIC STRATEGY
I use a series of discrete-time event history models to test the effect of different independent variables related to the insurrection on out-migration in Chitwan Valley in any given month. I use person-months as the unit of exposure to risk. The models test the monthly hazard of moving out of the Chitwan Valley neighborhood after June 1997, contingent upon violent events and measures of community psycho-social organizations. I lag all the event variables by one month in order to assure that the result I am measuring (migration) occurred chronologically after the event. For example, I am testing the effect of a bomb blast in April on out-migration in May.
    I use the logistic regression equation given below:

$$\ln\left(\frac{p}{1-p}\right) = a + \sum (B_k)(X_k)$$

where p is the probability of migrating out of the Chitwan neighborhood, $\frac{p}{(1-p)}$ is the odds of migrating out, a is a constant term, B_k is the effect of independent variables in the model, and X_k is the value of these independent variables.
    Table 1 shows the results of Models 1 and 2 that test the effects of violence on out-migration. Model 1 tests the effect of the independent variable *'During War'* on out-migration and includes all control variables. Model 2 tests the effects of *'Bomb Blasts'* and *'Major Gun Battles'* and includes all control variables. Model 2 and all further models that include these two event variables cover a restricted time period beginning in January 2002. Previous to this time the insurrection was less violent and mainly concentrated in the western areas outside of the Chitwan Valley. Thus there were few to no bomb blasts and major gun battles before January 2002.
    Tables 2, 3, and 4 present the results of models that include the community psycho-social measures and interactions with the violence variables. Table 2 shows the results of a series of models that predict out-migration based on the presence of temples in the community, and the interactions of temples with *'During War'*, *'Major Gun Battles'*, and *'Bomb Blasts'*. Table 3 presents a similar series of models, using the *'Urban Residence'* variable. Table 4 also presents a similar series of models, using the *'Social Groups'* variable. These models include the same series of control variables as Models 1 and 2, although they are not shown in the tables. The models using the variable *'Urban Residence'* however do not include the redundant control variable *'Distance to Narayanghat'*.

RESULTS
In this section I discuss the results of these analyses. I first present a figure of the monthly rate of migration in Chitwan Valley. Second, I present tables of the results of my event history models. In these tables, I use odds ratios, which are the antilogs of the logistic regression coefficients. An odds ratio of 1 indicates that the variable in question has no effect on the likelihood of migration. An odds ratio of greater than 1 indicates that the variable in question has a positive effect; in other words, it increases the likelihood of migration. An odds ratio of less than 1 indicates that the variable in question has a negative effect, or decreases the likelihood of migration. Finally, I present figures with the predicted odds ratios for all of the models with statistically significant interactions. This allows the reader to view the results in a much easier and quicker format where the effects of all variables, including the interaction terms, have already been calculated.

Out-migration Rates
Figure 1 shows the rate of out-migration from the Chitwan Valley each month. Out-migration steadily declines from a high of about 3.5% in May 1997 until about March 2000. After this time, the percent of the population that moved out of the area in each month continued to decline but at a much slower rate of about 1% per month. There are two visibly significant peaks in out-migration. Out-migration reaches about 2.3% in the August 2001, about twice as high as surrounding months. In May 2005, about 1.6% of the population moved away, more than twice the rate of surrounding months.
<center>(Figure 1 about here)</center>

General Context of Conflict
Model 1 in Table 1 shows the effect of the dichotomous measure '*During War*' on out-migration, independent of the control variables. The odds ratio of 0.60 indicates that during the conflict individuals had about 0.40 *lower* odds of out-migrating than before the conflict. At first glance, this appears counter-intuitive. Before the conflict, the Chitwan area was relatively safe, and during the conflict it was more dangerous. We might then expect to find increased out-migration from Chitwan during the conflict. However, I return to the theory that people base their migration decisions on the desire to avoid exposure to violent events and minimize disruptions to their economic and social life. Possible ways to do this include migrating away or staying at home and migrating less, which is the case in this study. The level of violence and overall intensity of the conflict in Chitwan was relatively low. Thus this result that there was lower likelihood of migration during the conflict compared to before the conflict supports the theory that low levels of violence will decrease the likelihood of migration.
<center>(Table 1 about here)</center>
It is also important to consider the wider context in which Chitwan is situated-Nepal. Chitwan was one of the safer areas of the country during the conflict; so while the situation in Chitwan progressed from safe to dangerous with time, the situation elsewhere in Nepal progressed from safe to very very dangerous. Thus, leaving Chitwan for destinations elsewhere in Nepal may actually put individuals in greater danger than staying in the area. Given these considerations, the result of decreased out-migration from Chitwan during the conflict is more logical.

<center>11</center>

Violent Events

The results of Model 2 in Table 1 show the effects of specific violent events on out-migration. Similar to '*During War*', bomb blasts had a negative effect on migration. The odds ratio of 0.97 indicates that for each bomb blast in the local area, an individual will have 0.03 lower odds (=1-0.97) of migration in the next month. Odds ratios are multiplicative, therefore if there were five bomb blasts in one month we would expect an individual to have 0.14 lower odds (=1-($0.97^{\wedge 5}$)) of migration.

'*Major Gun Battles*' had the opposite effect of '*Bomb Blasts*' and '*During War*', they *increased* the odds of out-migration. For each major gun battle in Nepal, the odds of out-migration increased by 1.19 in the following months. Again, odds ratios are multiplicative, so we would expect that five major gun battles in one month would increase the odds of migration by 2.39 (= $1.19^{\wedge 5}$). In another sense, if there are five gun battles in one month, we would expect more than twice as much out-migration in the following month.

These results confirm that specific violent events affected out-migration. The negative effects of bomb blasts support the theory that lower levels of violence will decrease the likelihood of migration. The positive effects of major gun battles as opposed to the negative effects of bomb blasts on out-migration also support this theory. Major gun battles are often visible, audible, and very threatening. The positive effects for this type of event may indicate that major gun battles quickly surpass a threshold level of violence and thereby affect increased out-migration.

Social Support

My results show that several community-level social support measures affect not only the likelihood of migration, but also the relationship between conflict and migration in this setting.

In general, access to a temple in one's community has a negative effect on migration. As shown in Model 3 in Table 2, the odds ratio for Temple is 0.89, indicating that if there is a temple in one's community, they have about 10% lower odds of migrating away. In Model 4, which includes an interaction term for '*During War*' x '*Temple*', the effect of temples on migration is similar, with an odds ratio of 0.86. In this model, there is also a negative effect of war on migration, as we would expect. The odds ratio for '*During War*' is 0.49. However, the interaction term of war and temple is positive and significant, with an odds ratio of 1.27. This means that while the effect of war on migration is negative, it is less negative for those with a temple in their community. Specifically, during the war, those without a temple in their community would have 0.49 odds of migration; those with a temple would have a slightly higher odds of migration of 0.53 (=0.49 * 0.86 * 1.27).

(Table 2 about here)

The interaction between bomb blasts and temples is similar, as shown in Model 6 in Table 2. The effect of bomb blasts on migration is negative, with an odds ratio of 0.88 for each bomb blast per month. The effect of temples on migration is negative but not significant. The interaction term between bomb blasts and temples is positive and significant, with an odds ratio of 1.12. This indicates that while bomb blasts have a negative effect on migration, they have a less negative effect on those with a temple in their neighborhood. Specifically, the odds ratio of one bomb blast in a month for

individuals without a temple in their community is 0.88; the odds ratio for those with a temple in their neighborhood is 0.90. The difference in effect is stronger when there are multiple bomb blasts per month. For example, the odds ratio of five bomb blasts per month for those without a temple in their community is 0.54, while for those with a temple in the community it is 0.85.

The effect of monasteries on migration had a similar effect when interacted with bomb blasts. As shown in Model 7 of Table 3, the odds ratio for monasteries alone is 0.93, indicating that those who live in a community with a monastery will have 0.07 lower odds of migrating away. Model 10 shows the interaction effect of monasteries and bomb blasts. The odds ratio of monasteries is still negative, at 0.76. The odds ratio of bomb blasts is also negative at 0.92. However the interaction of these two variables is 1.08. This means that although bomb blasts have a negative effect on migration, it is less negative for those living in a community with a monastery. This difference is stronger when there are more bomb blasts per month. Specifically, when there are five bomb blasts per month, those living in a community without a monastery will have 0.65 odds of migrating away, while those living in a community with a monastery will have slightly higher odds of 0.73 of migrating.

(Table 3 about here)

As shown in Table 4, urban residence had similar effects on migration and the relationship between war and migration. In Model 11, the odds ratio of urban residence is 0.88. This means that individuals living in the urban area had 0.12 lower odds of migrating than those living in rural areas. In Model 12, which includes an interaction term for war and urban residence, the effect of urban residence alone on migration is 0.85. The odds ratio for war is also negative, at 0.57, in this model. The interaction term is positive, with an odds ratio of 1.20. Thus while the effect of war on migration is negative, it is less negative for those living in urban areas. The predicted odds of migration during war for those living in rural areas is 0.57, and for those living in an urban area it is a slightly higher 0.58.

(Table 4 about here)

The interaction between urban residence and major gun battles is also significant, as shown in Model 13. The effect of a major gun battle on migration is positive, with an odds ratio of 1.25. The interaction between urban residence and major gun battles is negative, with an odds ratio of 0.81. This means, that while the effect of major gun battles on migration is positive, it is less positive for individuals living in urban areas. Again, the difference in effect is stronger when there are more gun battles per month. For example, in the month following three major gun battles, the predicted odds of migration are 2.00 for individuals living in rural areas and 1.17 for individuals living in the urban area.

Social groups have similar effects on the relationship between the war and migration. Table 5 presents the interactions between social groups and violence. As shown in Model 15, the total effect of social groups is negative, with an odds ratio of 0.82 In Model 16, with includes an interaction term for war and social groups, the effect of social groups on migration is 0.84. The odds ratio of war is 0.34. The interaction term between social groups and war however is positive and significant, with an odds ratio of 1.80. Again, this indicates that while the effect of war on migration is negative, it is less negative for those living in communities with social groups. For those living in

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communities without social groups, the odds ratio of migration during the war is 0.34; for those living in communities with social groups, the odds ratio is 0.52.

(Table 5 about here)

In Figures 2-4, I present the predicted odds ratios of migration during conflict, for those living in communities with and without these psycho-social organizations. This provides a visual representation of the model results discussed above. These figures include results only for the statistically significant models. Figure 2 presents the effects of urban residence, social groups, and temples on migration during war. Figure 3 presents the effects of urban residence on migration after major gun battles. Figure 4 presents the effects of urban residence, temples, and monasteries on migration after bomb blasts. As shown in Figure 2, all of the three organizations decrease the negative effect of war on migration. Similarly, as shown in Figure 4 urban residence, temples, and monasteries decrease the negative effect of bomb blasts on migration. Figure 3 shows that urban residence decreases the positive effect of war on migration. Thus, in every case where there is a significant interaction between a measure of violence and psycho-social organizations, the psycho-social support decreases the effect of the violence on out-migration.

(Figures 2, 3, and 4 about here)

DISCUSSION AND CONCLUSION

This study addresses questions of how conflict causes people to migrate away from their homes and why some people migrate away from conflict while others do not. First, my analyses confirm that armed conflict has a non-linear effect on migration, depending on the level of violence that people face. My results show that higher levels of violence, measured by major gun battles in the local area, increased the likelihood of migration from the Chitwan Valley of Nepal. However, lower levels of violence, measured by bomb blasts in the local area and the general period of conflict, decreased the likelihood of migration from the Chitwan Valley. These results support the proposal that there is a threshold effect of violence on migration. At low levels of violence, people are less likely to migrate, instead choosing the safety of their own homes and communities. At higher levels of violence, they are more likely to migrate away to seek safety elsewhere.

Second, my analyses show that not all people have the same likelihood of migrating when faced with violent conflict. Community-level social support is one of the many moderating factors that can affect the relationship between conflict and migration. My results show that people living in communities in the Chitwan Valley with temples, monasteries, social groups, or in urban areas are less likely to change their migration behavior due to violent conflict. This supports the theory that social support at the community level increases the ability of individuals to cope with and adapt to violent conflict.

In addition, it is notable that my measures of social support had more significant interactions with bomb blasts and the general period of conflict than with major gun battles. Urban residence was the only measure that had a significant interaction with major gun battles to affect the likelihood of migration. On the other hand, urban residence, temples, and social groups all had significant interactions with the general period of conflict, and urban residence, temples, and monasteries interacted significantly with bomb blasts in affecting the likelihood of migration. This leads me to propose that

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social support is more able to decrease the effect of low levels of violence on migration compared to high levels of violence.

My empirical analyses in this study focus only on the Chitwan Valley of Nepal during the recent Maoist insurrection. While the exact results of this study are likely not generalizable to other areas and other conflicts, there are several outcomes of this study that contribute to forced migration studies in general. First, armed conflict may not affect migration in a positive and linear way, as we generally believe. Understanding different types and levels of violence in any context can help us to understand or predict the migration decisions that individuals make. Second, when people are faced with violent conflict, non-migration is a possible threat-reducing behavior choice. Third, specific characteristics of individuals and the communities in which they live can act as moderating factors that instigate some people to migrate away from conflict and others to not migrate when faced with the same threats. These characteristics may vary depending upon regional differences. Further detailed studies of how community and individual-level factors affect the selection of who migrates and who does not migrate could contribute to the field of forced migration and our understanding of how people perceive and behave in the face of violent conflict.

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TABLES AND FIGURES

Table 1. Conflict, Violent Events and Migration
Logistic Regression Estimates of Discrete-Time Hazard
Models of Out-Migration from Chitwan Valley

Variable	Model 1 War	Model 2 Bombs & Major Gun Battles
Violence		
During War	0.60 ***	
(0,1)	(10.55)	
Major Gun Battles		1.19 ***
(# per month)		(3.10)
Bomb Blasts		0.97 ^
(# per month)		(1.29)
Control Variables		
Female	0.64 ***	0.82 *
	(10.34)	(1.97)
Born in Chitwan	1.06	1.19 ^
	(1.01)	(1.36)
Distance to urban area	1.02 **	1.00
	(2.71)	(0.04)
Ethnicity		
Upper Caste Hindu	*Reference Category*	
Lower Caste Hindu	0.94	0.92
	(0.83)	(0.48)
Hill Tibeto-Burmese	1.26 ***	1.40 **
	(3.84)	(2.42)
Terai Tibeto-Burmese	0.62 ***	0.54 ***
	(7.54)	(4.17)
Newar	0.80 **	0.83
	(2.33)	(0.90)
Age		
15-25 years old	1.00	0.82 **
	(0.37)	(2.86)
26-35 years old	0.89 ***	0.92 ***
	(13.01)	(4.29)
36-45 years old	0.97 **	0.96 *
	(2.54)	(1.90)

Table 1. Continued
Conflict, Violent Events and Migration

46 + years old	1.00	1.00
	(0.05)	(0.02)
Months of the year		
January	0.76 **	0.63 *
	(2.69)	(2.11)
February	0.72 ***	0.52 **
	(3.11)	(2.71)
March	0.96	0.67 *
	(0.46)	(1.81)
April	0.80 *	0.79
	(2.20)	(1.07)
May	1.04	1.16
	(0.37)	(0.74)
June	*Reference category*	
July	0.88 ^	0.73 ^
	(1.34)	(1.37)
August	1.03	0.88
	(0.28)	(0.59)
September	1.00	0.71 ^
	(0.04)	(1.48)
October	0.58 ***	0.43 **
	(4.92)	(3.00)
November	0.90	0.59 *
	(1.19)	(2.15)
December	0.89	0.86
	(1.24)	(0.70)
-2 log likelihood	23,554	5159
No. of person-years	196,822	71,316

Note: Estimates are presented as odds ratios.
     Asymptotic z-statistics are given in parentheses.
^ p<.10   *p<.05   **p<.01   ***p<.005

Table 2. Conflict, Temples, and Migration
Logistic Regression Estimates of Discrete-Time Hazard Models of Out-Migration from Chitwan Valley- Statistically significant models in **Bold**

Variable	Model 3 **Temple**	Model 4 **War Interaction**	Model 5 Major Gun Battles Interaction	Model 6 **Bomb Blasts Interaction**
Violence				
During War		**0.49 *****		
(0,1)		**(6.00)**		
Major Gun Battles			1.16	**1.20 *****
(# per month)			(1.10)	**(3.14)**
Bomb Blasts			0.97 ^	**0.88 ***
(# per month)			(1.29)	**(2.02)**
Community Context				
Temple	**0.89 ***	**0.86 ***	1.08	**0.92**
	(1.99)	**(2.30)**	(0.44)	**(0.51)**
Temple * War		**1.27 ***		
		(1.87)		
Temple * Gun Battles			1.03	
			(0.20)	
Temple * Bomb Blasts				**1.12 ***
				(1.73)
-------------------- CONTROLS NOT SHOWN --------------------				
-2 log likelihood	23,666	23,548	5159	5155
No. of person-years	196,822	196,822	71,316	71,316

Note: Estimates are presented as odds ratios. Asymptotic z-statistics are given in parentheses.
^ p<.10   *p<.05   **p<.01   ***p<.005

Table 3. Conflict, Monasteries, and Migration
Logistic Regression Estimates of Discrete-Time Hazard Models of Out-Migration from Chitwan Valley- Statistically significant models in **Bold**

Variable	Model 7 **Monastery**	Model 8 War Interaction	Model 9 Major Gun Battles Interaction	Model 10 **Bomb Blasts Interaction**
Violence				
During War		0.65 ***		
(0,1)		(5.10)		
Major Gun Battles			1.07	**1.20 ***
(# per month)			(0.67)	**(3.14)**
Bomb Blasts			0.97	**0.92 ***
(# per month)			(1.28)	**(2.11)**
Community Context				
Monastery	**0.93 ***	1.00	0.82 *	**0.76 ***
	(1.63)	(0.01)	(1.67)	**(2.09)**
Monastery * War		0.89		
		(1.19)		
Monastery * Gun Battles			1.14	
			(1.14)	
Monastery * Bomb Blasts				**1.08 ***
				(1.77)
-------------------- CONTROLS NOT SHOWN --------------------				
-2 log likelihood	23,667	23,553	5156	5154
No. of person-years	196,822	196,822	71,316	71,316

Note: Estimates are presented as odds ratios. Asymptotic z-statistics are given in parentheses.
^ p<.10   *p<.05   **p<.01   ***p<.005

Table 4. Conflict, Urban Residence, and Migration
Logistic Regression Estimates of Discrete-Time Hazard Models of Out-Migration from Chitwan Valley- Statistically significant models in **Bold**

Variable	Model 11 **Urban Residence**	Model 12 **War Interaction**	Model 13 **Major Gun Battles Interaction**	Model 14 Bomb Blasts Interaction
Violence				
During War		**0.57 *****		
(0,1)		**(10.01)**		
Major Gun Battles			**1.25 *****	1.19 ***
(# per month)			**(3.67)**	(3.11)
Bomb Blasts			**0.97 ^**	0.97 ^
(# per month)			**(1.30)**	(1.52)
Community Context				
Urban Residence	**0.88 ****	**0.85 ****	1.14	0.98
	(2.49)	**(2.74)**	(1.10)	(0.14)
Urban Res. * War		**1.20 ***		
		(1.74)		
Urban Res. * Gun Battles			**0.81 ***	
			(1.75)	
Urban Res. * Bomb Blasts				1.03
				(0.83)
-------------------- CONTROLS NOT SHOWN --------------------				
-2 log likelihood	23,673	23,554	5156	5158
No. of person-years	196,822	196,822	71,316	71,316

Note: Estimates are presented as odds ratios. Asymptotic z-statistics are given in parentheses.
^ p<.10   *p<.05   **p<.01   ***p<.005

Table 5. Conflict, Social Groups, and Migration
Logistic Regression Estimates of Discrete-Time Hazard Models of Out-Migration from Chitwan Valley- Statistically significant models in **Bold**

Variable	Model 15 Social Groups	Model 16 War Interaction	Model 17 Major Gun Battles Interaction	Model 18 Bomb Blasts Interaction
Violence				
During War		**0.34 *****		
(0,1)		**(4.31)**		
Major Gun Battles			1.46 ^	1.19 ***
(# per month)			(1.56)	(3.10)
Bomb Blasts			0.97 ^	1.07
(# per month)			(1.31)	(0.70)
Community Context				
Social Grps	**0.82 ****	**0.84 ***	1.37	1.46
	(2.75)	**(2.25)**	(1.01)	(1.12)
Social Grps * War		**1.80 ****		
		(2.33)		
Social Grps * Gun Battles			0.81	
			(0.86)	
Social Grps * Bomb Blasts				0.91
				(1.01)
-------------------- CONTROLS NOT SHOWN --------------------				
-2 log likelihood	23,663	23,546	5158	5158
No. of person-years	196,822	196,822	71,316	71,316

Note: Estimates are presented as odds ratios. Asymptotic z-statistics are given in parentheses.
^ p<.10   *p<.05   **p<.01   ***p<.005

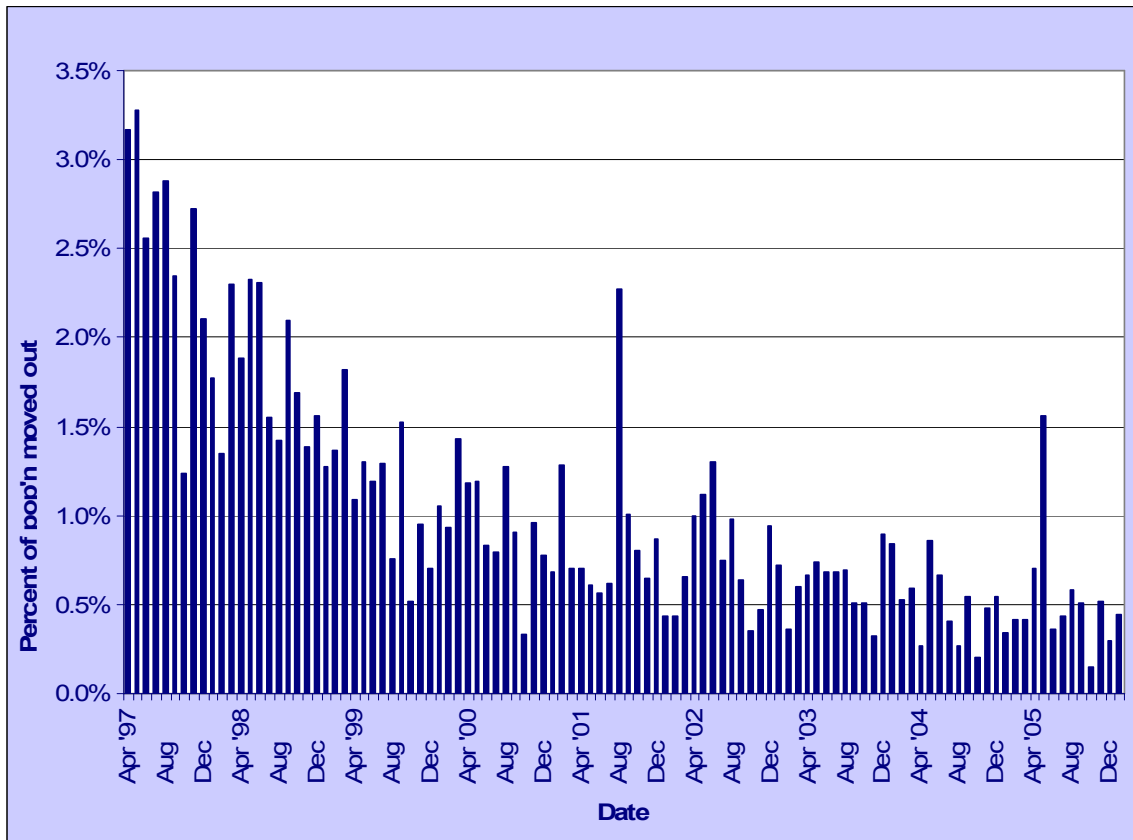**Figure 1.** Monthly Out-Migration Rates, Chitwan Valley Nepal

Figure 2. Predicted Odds Ratios for Migration During War, with and without
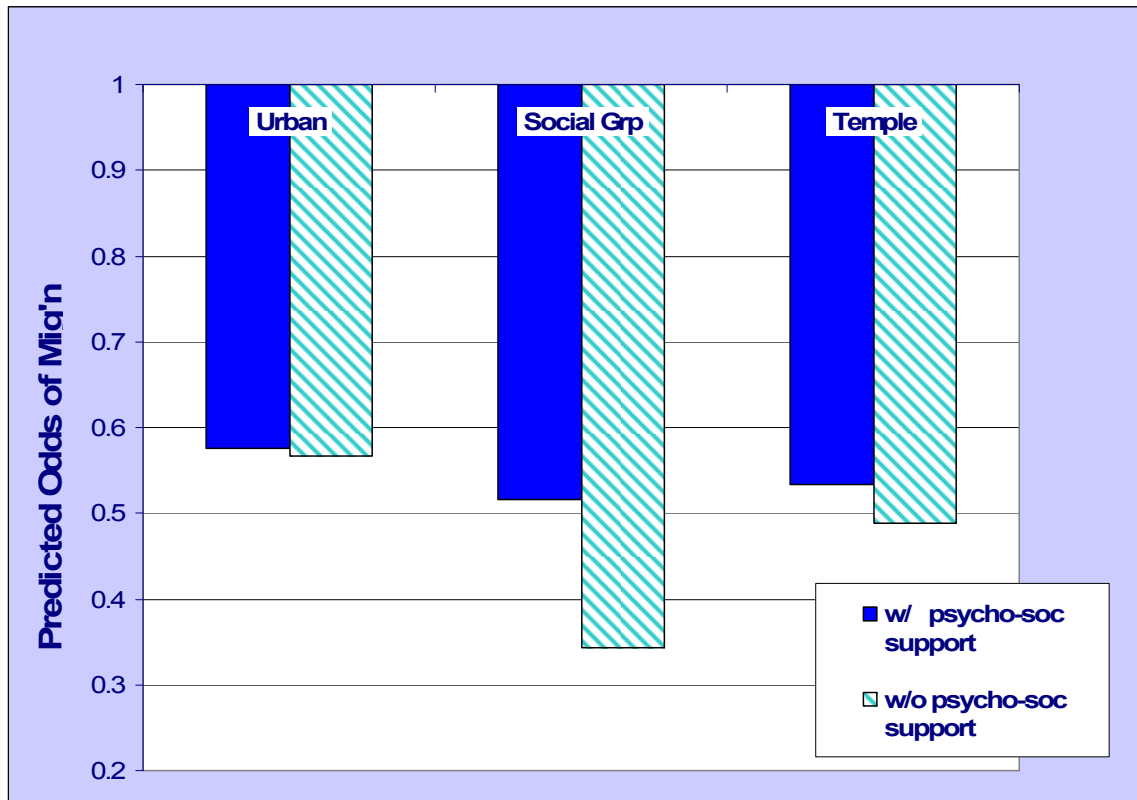Community Institutions

Figure 3. Predicted Odds Ratios for Migration Following Gun Battles, in Urban and
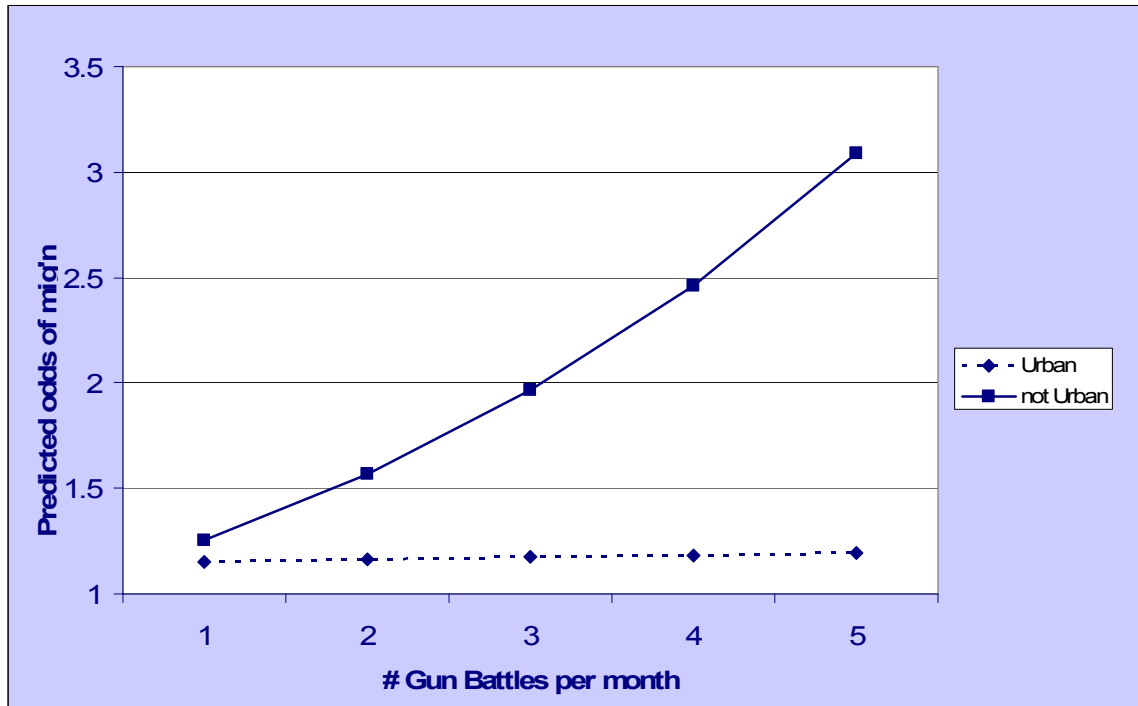non-Urban Areas

Figure 4. Predicted Odds Ratios for Migration Following Bomb Blasts, with and without
Psycho-Social Support Organizations