OPEN ACCESS

The 3rd World Sustainability Forum
1-30 November 2013

http://www.sciforum.net/conference/wsf3

Article

"I don't know where my sons are": Social trade-offs during rapid development in Nepal

Catherine Sanders [1,*], and Kimber Haddix McKay [2]

[1] Research Associate, The ISIS Foundation, USA, 734 Cherry Street, Missoula, MT 59802
[2] Dr. Kimber Haddix McKay, Professor, Department of Anthropology, University of Montana-Missoula and Director of Research, Monitoring, & Evaluation. The ISIS Foundation, USA, 734 Cherry Street, Missoula, MT 59802

E-Mails: Catherine.sanders@isisgroup.org; kimber.mckay@isisgroup.org

* Author to whom correspondence should be addressed; Tel.: +1-406-552-9483

Received: 16 September 2013 / Accepted: 06 November 2013 / Published: 06 November 2013

Abstract: Neoliberal development processes are increasingly pervasive across the globe, but they are incorporated unevenly into social systems at the micro-level with varying ramifications for the sustainability of social institutions. This paper investigates how kinship relates to ecology and exposure to development in two villages of Humla District, Nepal. A geospatial analysis using ArcGIS software, combined with ethnographic techniques, offers visual representation of socio-ecological information that could facilitate the application of social scientific knowledge to a variety of issues in sustainable community development. The findings we present suggest that increasing integration with a market economy and other outside influences exaggerated differences in social networks. Specifically, we found that those villages with more development activity had more dispersed households and fewer social resources at home. This was in part the trade-off for increased connections abroad and in cities around Nepal. We explore the potential impacts of diffused social networks on long-term vulnerability. NGO staff working to maintain the sustainability of development's successes in the region will need to include the dynamics of local social networks in their analyses.

Keywords: GIS, kinship, social networks, Nepal, development

1. Development and Kinship

The Maoist conflict in Nepal (1996-2006) offered a window into development's disruptive influence on vulnerability, as Nepal's conflict hotspots coincided with regions of the most intense development activity in Nepal [16, 31]. The case study presented here provides further evidence that disturbances in social and political organization may be common byproducts of development, despite claims to the contrary [see 33].

The conflict was partly the result of disillusionment with a democracy that was failing to provide material relief from scarcity [6, 11, 30], but the Maoist insurgents who recruited members in Humla District, Nepal between 2001 and 2006 evoked varied responses from villagers in the fieldsite. Women and other disadvantaged groups, in particular, responded in ways that highlight the role of social resources in vulnerability.

Using a combination of ethnographic and GIS techniques in Humla District, Nepal, we explored differences in ecology, development, and social networks that appeared to be linked to the way villagers responded to political change agents in the two villages. We discuss possible mechanisms for the link we observed between kin networks and vulnerability to conflict. This discussion implicates development as an inherently destabilizing force in such settings, and suggests that developers minimize vulnerability to risk through greater attention to their impacts on social institutions.

Partly in response to the shortfalls of new economic and development-related processes, the Maoist conflict gained swift momentum in Nepal's rural areas. Humlis began hearing Maoist messages about the evils of imperialism and caste and gender inequality via travel and on their battery-operated radios before they encountered the Maoist guerrillas in person. In 2001, the extreme paramilitary measures taken by the Nepalese government and the repercussions of US classification of the Maoist combatants as terrorists escalated the conflict throughout Nepal[i] [6]. At that time, Maoist combatants entered even more remote territories, including Humla. They attempted to draft one member from each household to porter, cook for, or take part in the armed resistance. Pettigrew's [23] analyses of these

interactions in another part of Nepal concluded that rural villagers responded to Maoist combatants in complex ways, negotiating fear, idealism, and social institutions by deploying cultural conventions in unconventional ways. Humlis' responses were similarly ambivalent, and in fact were divergent among villages.

In the two villages represented in this case study, how people perceived and coped with the insurrection appeared to be associated with differing development levels and the divergent kinship densities that we observed. The rise of both Nepali democracy and the development industry since the early 1990s has presented new social networking opportunities to Humlis as well as exposing them to new risks and vulnerabilities. These changes, mediated by access to varying ecologies, appear to be reducing kinship as a central organizing principle in favor of market-oriented connections in parts of the region. Development dynamics intensified the distant, short-term, non-kin nature of relationships at the expense of local, sustaining networks in processes we describe in depth elsewhere [28-29].

Humla is a northwestern Himalayan district, widely considered the most remote of Nepal's 75 districts. Like in other communities dependent on subsistence-based productive activities, Humlis' social and political networks, until recently, have been primarily kinship-based [14, 20, cf. 8]. That is, most exchanges of labor and goods occurred on the basis of consanguinal, affinal, or fictive relatedness.

Thakuris make up all but a few households in the fieldsite and constitute a small but tightly-knit and distinctive enclave in Western Nepal. They are the second-highest caste in the Nepali caste system. They have the reputation among Chhetri and ethnic Tibetan populations in the region for being proud, despite their inability to achieve the food security or surpluses of their lower-caste neighbors [18, 22]. Very little ethnographic research has centered on this group of Nepalis [see, e.g. 31].

Relatedness is extremely important to Thakuris in Humla. Kinship functions to maintain a resource pool for the exchange of goods and ideas in what we observed to be a constantly rotating system of small-scale, informal credit. Kinship rules designate who Thakuris will marry (usually, other Thakuris with a different surname) and where they will travel to live (especially if they are female). Kinship structures their agricultural cycles, and the amount of labor they can count on to accomplish

the challenging tasks of agriculture and livestock management in the Himalayas. Kinship is central to the maintenance of caste and status. When asked about who in the village they were related to, many villagers responded, "everyone, we are all family" as a statement of the highest form of solidarity with the neighbors with whom they lived and worked.

In this region, the practice of agriculture is inseparable from villagers' notions of kinship and identity as Hindu-observing Thakuris. In one of the villages in the fieldsite, Paschimgaon[ii], inhabitants were relatively cut off from other villages by geological features including forests, rivers, streams, and mountain crevasses. Paschimgaon villagers had the capacity to grow mountain rice, access ample forest resources, and extend and irrigate their fields. The flat, well-irrigated rice fields of Paschimgaon afforded those villagers a great deal of pride in their traditionally agricultural livelihoods. For them, rice is both sustenance and a sacred link to ancestors in a place where supernatural forces are seen to be embedded in the landscape and believed to be able to influence crop success [35]. Paschimgaon villagers were also very proud of their ability to maintain traditional Thakuri rituals despite the rapid social change they observed in surrounding villages. However, their isolation left them without as many social networking options as their neighbors in Uttargaon.

By comparison, villagers of Uttargaon had more dispersed fields and water supply, less fertile soil, and their land abutted neighboring villages, so they had few options for cropping and extensification (Figure 1). Uttargaon's proximity to neighboring villages and the poor quality of their unirrigated fields meant that business opportunities, NGO training and workshops, and the search for wage labor outside the village represented potential and/or actual relief from scarcity and land disputes at home. Their central positioning with respect to other villages invited networking opportunities. Uttargaon was home to one of the few secondary schools in the region, which further intensified villagers' exposure to Nepali schoolteachers from Nepal's urban centers and students from around the district.

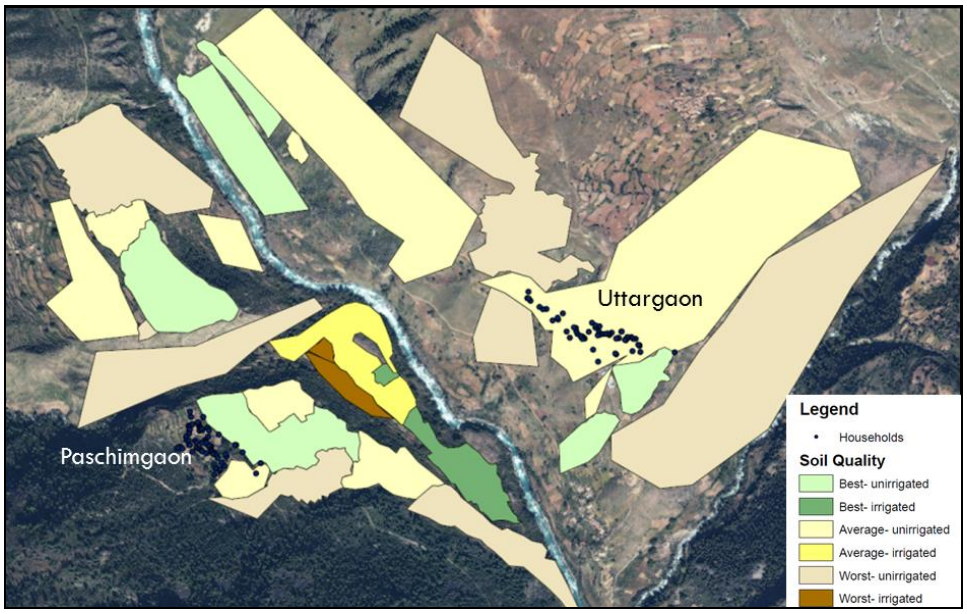


Figure 1. Paschimgaon's landholdings were far superior to Uttargaon's

We predicted that cohesive (kin) networks have different relationships to risk than those social networks that have been expanded by market-oriented relationships [cf. 1]. In light of the Maoist conflict in Nepal and heightened post-conflict political divisions, we questioned whether a greater reliance on kinship and less dependence on development organizations affected the vulnerability of villagers in Humla with respect to Maoist political change agents from outside the district. These associations came to light as we mapped resources and kinship in ArcGIS in a process described below. Kin relationships took on varying meanings in the two settings in ways that appeared to be connected to the uneven disbursal of development benefits in Humla. Development trends somewhat bypassed Paschimgaon villagers and left them out of the national political discourse (see Table 1), but they were less vulnerable to some types of political manipulation that put some people at higher risk for conscription in Uttargaon [cf. 19].

Table 1. Uttargaon had higher levels of development

	Village	**N (house-holds)**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Total number of technologies adopted**	Paschimgaon	67	1.72	1.53	.19
	Uttargaon	61	2.72	1.19	.15
Number of health technologies adopted**	Paschimgaon	67	1.22	1.10	.13
	Uttargaon	61	1.72	.58	.07
socioeconomic status*	Paschimgaon	67	1.57	.49	.06
	Uttargaon	62	1.76	.37	.05
Total income (in	Paschimgaon	67	16490.07	16179.15	1976.60

Nepali rupees*	Uttargaon	61	21987.79	13905.58	1780.43
Education per # people	Paschimgaon	67	1.47	1.18	.14
in household**	Uttargaon	61	2.45	1.62	.21

**= Independent samples T-tests significant at p<.01; *= p<.05

1.1. Mapping Kinship

During interviews in 2009 and 2010, we gathered information in 308 household surveys and conducted 12 months of participant observation on individual and household decision-making and vulnerability. We interviewed the 128 households in the fieldsite multiple times in harvest, winter, and early summer seasons to obtain information about seasonal fluctuations in assets and interaction with local markets.

Attitudes toward development and kinship questions made up a portion of every survey regardless of season. Interviews and observations of technology adoption also revealed levels of engagement with local development organizations. Novel technologies offered by local and international NGOs were available during and after the conflict, and included smokeless metal stoves, solar and hydropower lighting systems, clean water projects, pit latrines, and greenhouses. For the purposes of this study, indicators of an individual's engagement with development included number of technologies adopted (listed above) and education levels reported in surveys. We calculated villagers' rankings of their own socioeconomic status, income, health outcomes, and food security from survey responses to indicate levels of vulnerability.

We were interested in understanding how the geospatial characteristics in the fieldsite shaped the phenomena we observed, so we calculated the geographical distance between households of related individuals. In order to do this, we plotted the coordinates of each household with a Vista HCx Etrex Garmin GPS in the field. We then identified the households of consanguinal (blood-related) and affinal (marriage-related) relatives in the fieldsite from survey responses. We mapped 802 consanguinal and affinal relationships among the 128 households and 25 lineages of the two villages using the XY-to-line function (each line represents a relationship) in Esri's ArcGIS v 10 and calculate the distances in meters between each represented relationship in ArcGIS. These data were recorded for the same households in which we conducted the ethnographic interviews described above.

In the open source social network analysis software program, Gephi, we calculated measures of network centrality in kin networks in order to ascertain differences in the structure of kin networks. Social network analysts often measure an individual's centrality in a network in terms of the proportion of pairs to the number of pairs possible, or "degree" [cf. 10]. Each individual's degree, averaged for the entire network, is called network "density" [34], so we were able to compare Paschimgaon and Uttargaon's kin densities to verify the visuals generated in ArcGIS.

Statistical analyses in IBM SPSS 20 enhanced the network analysis and allowed us to characterize the geospatial relationships revealed in ArcGIS. We rely on descriptive statistics, correlations, and mean comparisons to quantify the relationships described here. Other researchers include a geospatial component in their social network analyses [4] because space takes on added importance in a fieldsite where topography is a major factor in decision making.

Qualitative data from the authors' extensive fieldwork conducted between 1995 and 2013 provide explanations for the mechanisms by which the quantified associations operate, and contextualize the findings. 2009 was a fruitful time to explore variations in these villagers' responses to community development projects and personnel. Three years after the Maoist conflict had ended, its consequences were still fresh in people's minds and played out in day-to-day interactions, but enough time had passed that development organizations had fully resumed services after the hiatus forced on many of them during the decade-long armed rebellion. In 2009 and 2010, Humlis were contending with change on three primary fronts. First, they were experiencing the victorious Maoist regime in its transition from war to peacetime. Second, development organizations were re-establishing themselves in the region in the post-insurrection setting. And third, Humlis were reconciling their own vision of the future while experiencing more external influences than at any time in history.

2. Kinship and Risk-Taking in Nepal

As of 2010, Paschimgaon and Uttargaon had comparable population structures. Paschimgaon had a population of 420 individuals in 67 households in 13 lineages, while Uttargaon housed 386 people in 61 households belonging to 12 lineages. Migration patterns based on the consanguinal and

affinal relationships of villagers in the fieldsite show Humla's position at the periphery of the geographic reach of the Nepalese government (Figure 2), and also reflect important differences in the structure of kinship in the two villages. These differences exist despite the villages being of similar size, religious orientation, ethnic make-up, age-structure, and geographical location.

In Uttargaon, we see far more relationships external to the village as a result of migration for labor, denoting Uttargaon's relatively higher level of external social capital [cf.32], or long-distance kin relationships (Figure 3; Tables 2-3). Uttargaon villagers are more willing to travel outside their village in search of familial and economic opportunities. Our ethnographic work and interviews verified that this was attributable to their relatively poorer agricultural productivity.

Figure 2. Humlis migrate internationally in search of economic opportunities

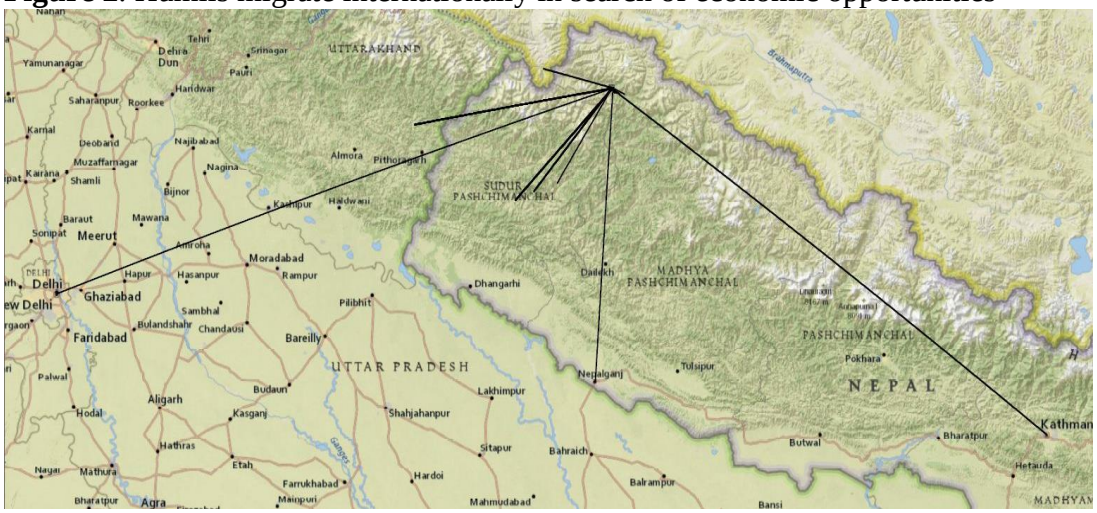


Figure 3. Uttargaon's kin networks were more diffuse than Paschimgaon's

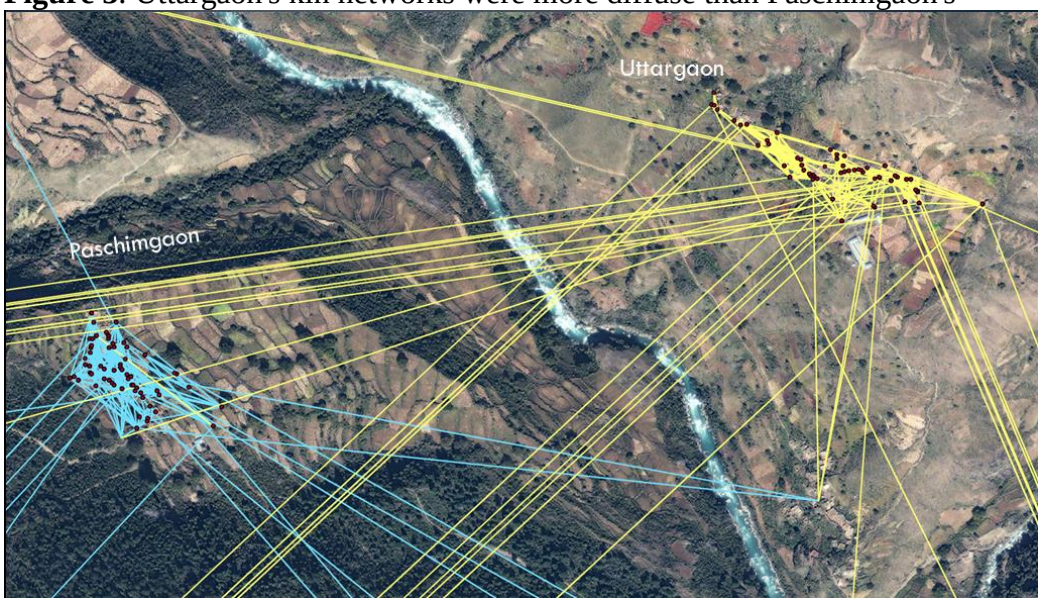


Table 2. Uttargaon villagers' kin contacts tended to be farther away

	Village	N (relation-ships)	Mean	Std. Deviation	Std. Error Mean
Distance from kin (meters)**	Paschimgaon	427	4782.35	35980.59	1741.22
	Uttargaon	375	12885.50	48704.64	2515.10

**= Independent samples T-tests significant at p<.01

Table 3. Paschimagaon villagers had more kin connections locally

		Extra-Humli	Local	Total
Village	Paschimgaon	14	413	427
	Uttargaon	32	343	375
Total		46	756	802

Pearson Chi-Square significant at p<.01

By contrast, measures of network centrality in Gephi revealed that Paschimgaon villagers were more closely-related. They had higher local network density and more kin relationships (or mean degree) than Uttargaon (Table 4). That is, for every possible pairing in their home villages, Paschimgaon villagers were related in a higher percentage of pairs [34]. Ethnographic research confirmed that many of the external-to-the-village kin relationships reflected in GIS (Figure 3) were the result of migration for labor by young men.

Table 4. Paschimgaon had denser kin networks

	Paschimgaon	Uttargaon
Undirected network density	.03	.02
Mean degree	2.72	2.08

Kinship and Decision-Making about Joining the Conflict

The Maoist conflict deeply impacted the nation of Nepal, but it was also local and personal. Locally, it constituted leverage in social schisms. During and following the conflict, villagers did not simply throw off their age-old grievances to adopt new ones. They incorporated the titles of new

political parties in a deepening expression of division. Landowner-versus-landless disputes gained new momentum when they bifurcated along national party lines and became the basis for ongoing retribution [see also 23].

Maoist combatants new to the area capitulated in local disputes by acting on behalf of villagers who claimed political loyalty. In Humla District, the process of recruiting members and labor for the revolution was occasionally violent, but it also involved considerable negotiation with local people. Negotiations with the Maoists reflected the ambiguity with which Maoists and villagers viewed one another, and the ways in which kinship factored into experiences of the conflict. At times, the Maoists excused villagers from service when they knew the household was too poor and/or did not have enough members to provide for them in addition to service. In other homes, the Maoists were less flexible for what appeared to be political reasons.

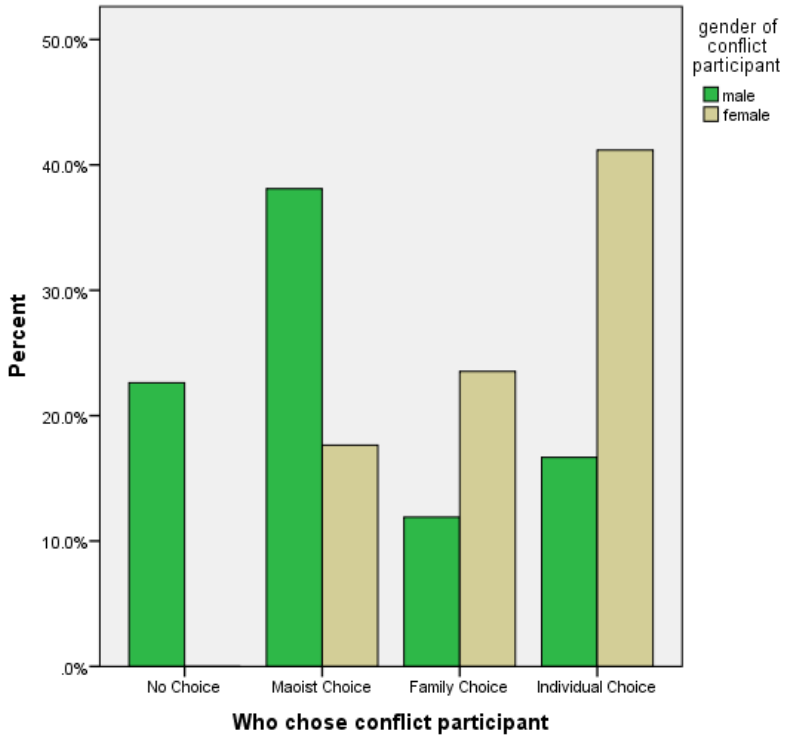
Women, in particular, exercised agency in the conflict in ways that both challenged and reflected traditional notions of kinship and social obligation [see also 22]. Women in Nepal have traditionally adhered to the narrow and patriarchally-prescribed social roles designated by Hindu religious norms. However, throughout Nepal, the combination of Maoist rhetoric about gender equality and rural patriarchal customs led to larger-than-expected numbers of women joining the Maoists of their own volition [19].

Young, unmarried Humli women from the fieldsite who chose to join the Maoist cadres tended to see it as a socially acceptable (because conscription was rhetorically mandatory) opportunity to explore new social roles they had heard about through their peers at school and in the media, and to see other, more developed, parts of the country [see also 22]. They often justified their volunteerism in terms of the Hindu concept of *dharma*, or social obligation. For instance, several women in the fieldsite volunteered to take the place of a brother in the cadres to allow the household to retain a more valuable laborer for the duration of the conflict.

Unmarried daughters enjoy some flexibility in terms of labor and mobility, and they are not expected to work as hard as, for instance, daughters-in-law, in this patrilocal society. Most unmarried women eventually get married and move into distant marital homes, thus incurring a loss to the

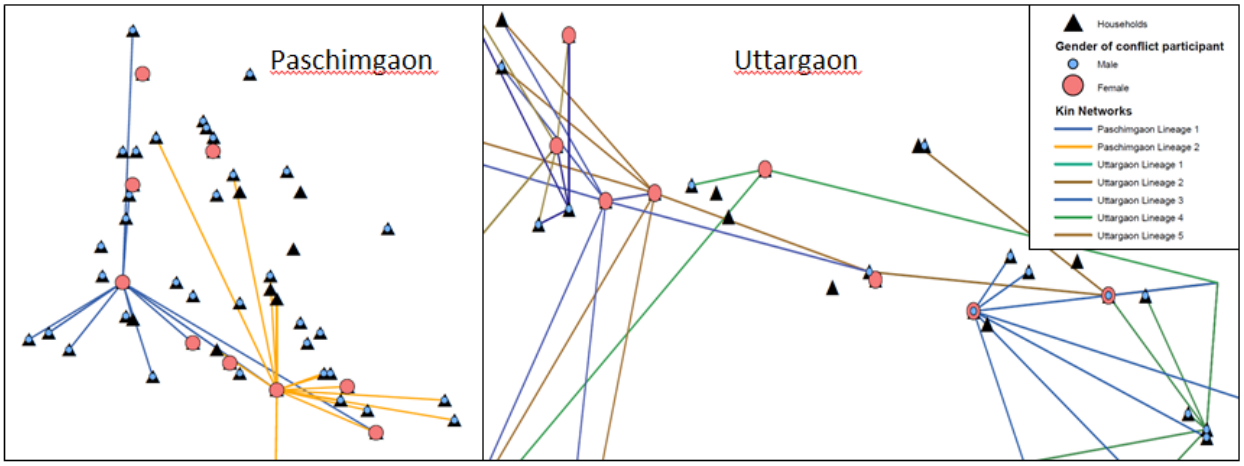
household's labor force [cf. 5]. Households prepare for this loss by assigning daughters non-central labor roles.

Figure 4. Women chose to participate in the conflict more often than men in the fieldsite.



Young women who had no other opportunity to see the world before being bound to their traditional social roles used the Maoist presence and local Hindu norms to their advantage. The 17 women who participated in the Maoist campaign from our fieldsite disproportionately exercised their own will in order to do so, compared to male participants (Figure 4). In general, female volunteers for Maoist duty came from lower status homes in which there were few other opportunities for social mobility. Because most women conflict participants chose to participate, we could compare social-spatial relationships in the two villages that may have mediated female decisions about the conflict. In Uttargaon, we found that the women who participated in the conflict were from quite a few different lineages. However, in Paschimgaon, only two lineages capture nearly all the female conflict participants in the village (Figure 5).

Figure 5. Nearly all of the female conflict participants from Paschimgaon were from just two lineages



Statistical and ethnographic evidence suggests that a higher reliance on kin may protect people from the risks inherent in the kind of political conflict that accompanied the civil conflict in Nepal. The households in which women opted out of conflict participation, on average, were related to 29 nearby households, or five more than those from which women participated in the conflict, suggesting that certain Humlis with vaster social support through kin may have been more confident or better able to leverage political sway to deny the Maoists their conscription process.

We know that the converse was true. A common narrative told by Uttargaon villagers described a process by which longstanding household rivalries took on national political party names. When the Maoists arrived on the scene, rivals pointed the soldiers to certain families for harsher conscription, and the Maoists often responded by drafting them for longer terms and/or to more dangerous regions affected by intense conflict. In one powerful Uttargaon household all four brothers had been drafted against their wills despite the Maoists' *ek ghar ek maanchhe* ("one household, one man") rule for conscription. Most likely as a result of this infighting, Uttargaon villagers also took on greater risk in order to escape Maoist terms (Table 5). In surveys, Uttargaon villagers mentioned that they experienced more social disturbances during the conflict as a result of political divisions within the village.

Table 5. Uttargaon villagers escaped the Maoists at their own risk

	Village	N (individuals)	Mean	Std. Deviation	Std. Error Mean
Risky avoidance of Maoist service*	Paschimgaon	71	.1268	.34	.04
	Uttargaon	62	.2903	.46	.06

*= Independent samples T-tests significant at p<.05

We suggest that Uttargaon villagers' differing experiences of the conflict were partially the result of prior, successful development that had facilitated the connection of these villagers' social networks to those of national and international networks in lieu of traditional kin institutions. This dissipation of permanent, local social connections led to rapid innovation as well as less social cohesion at home. The resulting diffusion of social resources and heightened social fissions appear to have increased their vulnerability to the risks of engagement with conflict [cf. 24].

Paschimgaon villagers' accounts of Maoist encounters did not include the backbiting that led to harsher conscription in Uttargaon. Paschimgaon villagers were more naïve in the same negotiations, but the social supports and disinterest in national level politics accompanying their tight-knit, kin-based social connections may have shielded them from the divisive effects of wartime politics and the conscription process.

3. Faux Foes? Development Workers and The Maoists

Through the varying influence of development organizations (including NGOs and private businesses), individuals in remote regions connect to business associates, friends, and formal education opportunities locally and in urban centers; access communications technologies and other media; and generally grow more independent of their traditionally dense, kin-based networks, and more conversant in the languages of national/ international-level politics and ideologies [13, 27].

In turn, expanded social networks affect human decision making by providing alternative avenues for the diffusion of goods and information [1, 3, 12]. But, not all individuals are able to invest in development programs, so neoliberal aid programming in particular has also been accused of contributing to widening gaps between rich and poor [25]. In Humla District, these gaps have

geospatial and social network components that revealed important inter-village differences in peoples' abilities to confront and withstand the political turmoil that accompanied the Maoist conflict in Nepal.

The extension of social networks through migration and diversification of assets accompanying development may have primed Uttargaon villagers for a bright future of engagement with novel opportunities in the region. In the meanwhile, however, it has increased their vulnerability to the negative aspects of change, such as political conflict and development at the expense of well-being, as we have discussed elsewhere [28]. We posit that the well-established development paradigm in place prior to the strife had not only scattered Uttargaon villagers and acquainted them with the language of revolution, but increased their willingness to act as independent agents in the conflict and segregated the villagers among rival political parties. The contrast with Paschimgaon is reflected in the structure of kin networks we examine here and affected the ways Humlis experienced the Maoist conflict.

Humlis' social acceptance of conflict participation was unexpected, and pointed out the complementarity in villagers' engagements with both development and conflict. Statistical analyses revealed a significant positive correlation between conflict participation terms and technological adoption for both villages (Table 6). Critics of the development regime tend to regard its unraveling impact on traditional kin relations (like those observed in Uttargaon) as unique to the development realm, but the analyses detailed above reveal that these processes are not strictly development-oriented. They stemmed from agricultural inequalities [cf. 2] and they were also intensified by unlikely allies, the Maoists [cf. 17].

Table 6. Conflict participation and technology adoption were highly correlated (Spearman's rho)

		Number of technologies adopted	number of phones in household	number of stoves adopted
Any form of conflict participation	Correlation Coefficient	.294**	.227*	.279**
	2-tailed Sig	.001	.011	.001
	N	127	125	127
Long-term conflict participant	Correlation Coefficient	.300**	.238**	.291**
	2-tailed Sig	.001	.008	.001

	N	126	124	126
Active conflict participation	Correlation Coefficient	.283**	.205*	.301**
	2-tailed Sig	.001	.021	.001
	N	128	126	128

**. Correlation is significant at the 0.01 level
*. Correlation is significant at the 0.05 level

The Maoist campaign in Nepal served to mobilize people across space, privilege national identities above kinship, and advocate for gender and caste equality and education for all as a means to elevate the poor. These trends helped stretch and extend the social networks of Humlis who were in a position to benefit, i.e. those who, due to scarcity and through development opportunities like access to formal education, had spearheaded local development. Villagers saw the Maoists as a) agents of development who could bring them technical help, much as NGO or government workers had done in the past, and b) outsiders whose motives required wariness, as with NGO and government entities.

Both the Maoists and the development workers, then, theoretically presented a conundrum to villagers who wanted the development and symbols of progress that they brought, but who were suspicious of what they might be asked to give up in return. They had been on the unfortunate end of asymmetrical development, largely due to their position at the geographical margins of Nepali society, since unification in the late 18th century, and had reason to be cautious [see 9]. In response to the risks presented by outsiders, villagers drew from the resources locally available to them. But, for Uttargaon villagers, some of those resources, i.e. kin networks, had been re-positioned and were unavailable in the way in which they had been accustomed.

This analysis suggests that development programs facilitate the kinds of long-distance kin relationships and non-kin social connections that ultimately politicized certain villagers and made them more vulnerable prior to the conflict. The politically-savvy-but-divided villagers seemed to experience harsher conscription. Increased vulnerability operated through the byproducts of successful development endeavors that introduced alternatives to especially poor agricultural productivity among Uttargaon villagers, but may have left individuals more isolated in their home village. Our analysis has shown that dense kin networks may help absorb risk.

The ethnographic analysis provided here references the ambiguity of development, whereby concepts of the self and community found fertile ground for growth in two modern, ostensibly opposing entities: the Maoists and "imperialist" proponents of aid. International aid and conflict have a lot in common, in that they are forms of revolution that are usually imposed from the outside. More importantly, they are made up of actors who have a somewhat unified vision of a better world, but who are nevertheless simultaneously navigating the competing goals of self, family, community, nation, and world. The way locals perceive themselves to be connected to those various scales of kinship determines the social resources at their disposal to negotiate both reality and idealism in increasingly scarce environments [21].

Unfamiliar events and processes confer great risk to individuals, especially if those events and technologies affect the ways in which people can earn or provide a living or relate to one another [7, 26]. Changes in social institutions are often accompanied by increased uncertainty and the threat of violence [15]. The major changes affecting Humlis' lives in the past generation have been ecological declines that limited the food security and nutritional diversity of their resource base, rapid development processes that stretched and expanded the social resources on which individuals rely to mitigate risk, and the Maoist conflict that brought national-level political upheaval and violence irrevocably to their doorstep. These change processes combined in unexpected ways to create vortexes of vulnerability observable in ArcGIS to which only certain individuals were relatively immune, based by all appearances on the structure of their historically-situated social relationships.

Acknowledgments

Support for this research was provided by the National Science Foundation, The ISIS Foundation, and the Bertha Morton Foundation. Matthew Nordhagen's help with ArcGIS was invaluable, and we are very grateful to Jacob Hansen, Becky Wood, and Dr. Libby Khumalo for their assistance with editing. Keshang Lama's research assistance during fieldwork was essential, invaluable, and expertly executed. Foremost, thanks are due to the people of Humla District and Nepal who welcomed us and made this research possible.

Conflict of Interest

The authors declare no conflict of interest.

References and Notes

1. Abramson, E.; Rosenkopf, L. Social Network Effects on the Extent of Innovation Diffusion: A Computer Simulation. *Organization Science* 1997, Volume 8 (Issue 3); pp. 289-309.

2. Aiyer, A. The Allure of the Transnational: Notes on Some Aspects of the Political Economy of Water in India. *Cultural Anthropology* 2007, Volume 22(Issue 4); pp. 640-658.

3. Bates, Sarah J.; Trostle, J.; Cevallos, W.T.; Hubbard, A.; Eisenberg, J.N.S. Relating Diarrheal Disease to Social Networks and the Geographic Configuration of Communities in Rural Ecuador. *American Journal of Epidemiology* 2007, Volume 166(Issue 9); 1088–1095.

4. Borgerhoff Mulder, M. Hamilton's rule and kin competition: the Kipsigis case. Evolution and Human Behavior 2007, Volume 28; pp. 299-312.

5. Bossen, L. Toward a Theory of Marriage: The Economic Anthropology of Marriage Transactrions. *Ethnology* 1988, Volume 27(Issue 2); pp. 127-144.

6. Bray, J.; Lunde, L.; Mansoob Murshed, S. Nepal: Economic Drivers of the Maoist Insurgency. In *The Political Economy of Armed Conflict*. Karen Ballentine and Jake Sherman, eds. Lynne Reinner: Boulder, CO, USA, 2003; pp. 107-132.

7. Carter, M. Environment, Technology, and Social Articulation of Risk in West African Agriculture. *Economic Development and Culture Change* 1997, Volume 45(Issue 3); pp.557-590.

8. Chagnon, N. *Yanomamo*, Sixth Edition. Wadsworth, Cengage Learning: Belmont, USA, 2009.

9. Fisher, J. *Trans-Himalayan Traders: Economy, Society, and Culture in Northwest Nepal*. University of California Press: Berkeley, CA, USA, 1986.

10. Friedkin, N. The development of structure in random networks: an analysis of the effects of increasing network density on five measures of structure. *Social Networks* 1981, Volume 3; pp. 41-52.

11. Gellner, D. Introduction: Transformations of the Nepalese State. In *Resistance and the State: Nepalese Experiences*. David N. Gellner, ed. Berghahn Books: New York, NY, USA, 2007; pp. 1-30.

12. Granovetter, M.S. The Strength of Weak Ties. *The American Journal of Sociology* 1973, Volume 78(Issue 6); pp. 1360-1380.

13. Guyer, J. *Marginal Gains: Monetary Transactions in Atlantic Africa*. University of Chicago Press: Chicago, IL, USA; 2004.

14. Howell, S. Adoption of the Unrelated Child: Some Challenges to the Anthropological Study of Kinship. *Annu. Rev. Anthropol.* 2009, Volume 38; pp. 149-66.

15. James, E. C. Witchcraft, Bureaucraft, and the Social Life of (US) Aid in Haiti. *Cultural Anthropology* 2012; Volume 27(Issue 1); pp. 50-75.

16. Khadka, N. U.S. Aid to Nepal in the Cold War Period: Lessons for the Future. *Pacific Affairs* 2012; pp. 77-95.

17. Kipnis, Andrew B. Audit Cultures: Neoliberal Governmentality, Socialist Legacy, or Technologies of Governing? *American Ethnologist* 2008, Volume 35(Issue 2); pp. 275-289.

18. Lama, T. Kailash Mandala: A Pilgrim's Trekking Guide. Humla Conservation and Development Association: Kathmandu, Nepal; 2002.

19. Leve, L. "Failed Development" and Rural Revolution in Nepal: Rethinking Subaltern Consciousness and Women's Empowerment. *Anthropological Quarterly* 2007, Volume 80(Issue 1): 127-172.

20. Levine, N. E. Caste, State, and Ethnic Boundaries in Nepal. *Journal of Asian Studies* 1987, Volume 46(Issue 1); pp. 71-88.

21. Mains, D. Blackouts and Progress: Privatisation, Infrastructure, and a Developmentalist State in Jimma, Ethiopia. *Cultural Anthropology* 2012, Volume 27(Issue 1); pp. 3-27.

22. Nightingale, A. Bounding difference: Intersectionality and the material production of gender, caste, class and environment in Nepal. *Geoforum* 2011, Volume 42; pp. 153-162.

23. Pettigrew, J. Guns, Kinship, and Fear: Maoists among the Tamu-mai (Gurungs). In *Resistance and the State: Nepalese Experiences*. Gellner, D. (ed.) Berghahn Books: New York, NY, USA, 2007; pp. 305-325.

24. Pfaffenberger, B. Social Anthropology of Technology. *Annual Review of Anthropology* 1992, Volume 21; pp. 491-516.

25. Pfeiffer, J.; Chapman, R. Anthropological Perspectives on Structural Adjustment and Public Health. *Annual Review of Anthropology* 2010, Volume 39; pp. 149-165.

26. Rogers, E. *The Diffusion of Innovations* The Free Press: New York, NY, USA, 1995.

27. Sahlins, M. D. *Stone Age Economics*. Aldline: Chicago, IL, USA, 1972.

28. The Search for "Strong Medicine": Pathways to Healthcare in Nepal Using GIS. *Technology & Innovation* 2013, Volume 15: 109-124.

29. Sanders, C.; McKay, K. H. Where Have All the Young Men Gone? Social Fragmentation during Rapid Neoliberal Development in Nepal's Himalayas. *Human Organization* 2014, Volume 73(Issue 1); pp. TBA.

30. Shneiderman, S. The Formation of Political Consciousness in Rural Nepal. Shah, Alpa and Judith Pettigrew, eds. In *Journal Dialectical Anthropology*, Special Issue: Windows into a Revolution: Ethnographies of Maoism in South Asia, 2009; Volume 33 (Issues 3-4); pp. 287-308.

31. Shrestha, N. R.; Bhattarai, K. *Historical Dictionary of Nepal*. The Scarecrow Press, Inc.: Lanham, USA, 2003.

32. Strang, D.; Soule, S.A. Diffusion in Organizations and Social Movements: From Hybrid Corn to Poison Pills. *Annual Review of Sociology* 1998, Volume 24; pp. 265-290.

33. United States Agency for International Development (USAID). USAID Forward: Progress Report. Washington, D.C., USA: USAID, 1998. Retrieved July 24th, 2013 from: http://www.usaid.gov/usaidforward

34. Wasserman, S.; Faust, K. *Social Network Analysis: Methods and Applications*. Cambridge University Press: Cambridge, UK, 1994.

35. Winkler, W.F. Oral History and the Evolution of Thakuri Political Authority in a Subregion of Far-Western Nepal. *Himalaya* 1984, Volume 4(Issue 2); pp. 43-50

[i] This classification remained well into 2012 according to the US State Department, despite the peace process and the Maoists' control of the government since 2006; retrieved July 23rd, 2012 from: http://www.state.gov/r/pa/ei/bgn/5283.htm

[ii] Pseudonyms are used in place of village names to protect the anonymity of research subjects