

Strange Intersections: Humans, Technology and Insects in a Himalayan Valley
IMTFI Final Report
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Abstract

This study concentrates on the physical, technological and financial modalities related to everyday life in the remote Himalayan valley of Manang, Nepal. My research investigates several socio-economic systems integral to this life, including: subsistence agriculture, religion, urban migration, regional and international trading, tourism, sponsored development, and finally, medicinal plant harvesting. All of these systems (including agriculture and religion) are characterized by a large degree of *mobility* that complicates the static, small-scale, ethnographic models traditionally applied to remote regions. But my research also suggests that each of these systems work in parallel to each other, with surprisingly little intersectionality, even amongst a sparse population. A case-study focus on the *yartsa gunbu*, an inter-species medicinal fungus, acts as a touchstone to re-theorize the *transitional* nature of life in the high Himalaya and illuminate the interdependence of technology, economy and place.

Introduction

Yartsa Gunbu, “summer grass winter worm” refers to a particular fungus (also known as *ophiocordyceps sinensis*; *cordyceps* (in Bhutan), *keera* (“insect” in Nepal), or simply ‘*bu*’ (“worm” in Tibet) that grows parasitically out of the larvae of a ghost moth species that lives only in high-altitude regions of the Himalaya and Tibetan plateau. But when people refer to “*yartsa*” nowadays they invoke a complex system of traditional medical history, miraculous powers, intense but lucrative harvest seasons, and international finance. Since the late 1990s the fungus has been in increasingly high demand as a natural virility enhancer for men in East Asia (Winkler 2008). The price has escalated to the point where the caterpillars sell for approximately US\$30-50,000/lb during peak periods, more than the

current price of gold. But in recent years the market has floundered, and in 2016 people were complaining that the buying price was roughly half that of the last year, and that the yield was extremely low and of mediocre quality.

My research concentrates on the complex material, technological, and financial practices surrounding the *yartsa* market as a case study of human-nature-technology relations in Manang; but this is only one of various socio-economic systems at work in the region. The primary agriculture base here was historically barley, potatoes and livestock that produced a bare subsistence, with no surplus for trade. Despite, or because, of this spare production Manangis have historically ventured far beyond their regional boundaries to carry out secondary trade between places with no evident connection to their own home (e.g. Hong Kong and Bangkok in the 1980s, the US or Australia in the 2000s) (Rogers 2004; van Spengen 1987; von Furer-Haimendorf 1975). By the 1960-70s Manangis were among the first Nepalis to acquire passports as well as particular exemptions that allowed them to import items into Nepal without heavy taxation. This unique concession helped Manangis become part of an emerging cosmopolitan class and establish an urban community in the capital, Kathmandu. By the second decade of the 21st century, well over two-thirds of the designated “Manangi” population actually lives in the major cities of Kathmandu or Pokhara (Rogers estimated 70% in 2004; personal accounts estimated more in 2016). Most of the fields in the Manang region have been fallow for a generation or two; some smaller villages are almost entirely abandoned, while larger centers such as Manang itself are only half-occupied, and increasingly by migrant workers from the middle-hill region of Nepal (Khangsar 25/6/16).

Since 1992 Manang has been part of the Annapurna Conservation Area Project (ACAP); which is part of the National Trust for Nature Conservation (NTNC) and envelopes the region in a web of international aid organizations and development projects, in particular those linked to environmental conservation and tourism (ntnc.org.np). Two major aspects of this project include (a) regulation of all natural resources in the area, including forest wood and medicinal plants, and (b) the administration of permits and collection of fees for the substantial tourist influx each year (approximately 13,000 in 2007) (Subeni 2011). The fact that ACAP receives most of its funding from international

organizations and the collection of fees from international tourists means that its priorities are monetarily linked to those of international environmental discourse.

These priorities, however, are often not the same as national development models; which focus on economic development and increased Gross Domestic Product (Cambell 2010; Sharma and Ghale 2014). National development priorities are tangibly manifest on the ground with the new road that was completed all the way to Manang from Besi Sahar, built with direct ADB funding. This road seems to be in contradiction to many of the principles of ACAP and also had minimal involvement from local communities. Cellular phone coverage, internet accessibility, and electricity are similar infrastructural projects that have significantly altered the everyday life of the region in ways that are apparently unplanned and arbitrary from the perspective of villagers.

Tourism rose steadily during the 1990s, and by the time of my first visit to the region in 2000, each village in the valley had several guest houses catering to thousands of international travelers who hike through the region every fall and spring. The demand was so great that several guest houses expanded to incorporate 3 or 4 story buildings that can house up to a hundred guests at a time during peak season. In some areas, particularly on the path from Manang up to the single high pass on the famous Annapurna circuit, entirely new “villages” came into existence comprised exclusively of these tourist guest houses. The owners of this tourist infrastructure are exclusively Manangi (through legal protection), but service staff - skilled receptionists, cooks and unskilled cleaners or construction workers - are generally from other areas of Nepal. The guests come from all over the world, but primarily Western Europe, North America and Australia. Despite political and natural upheaval in recent years, the tourist industry has prevailed as the primary economy in the region for about three decades.

It is important to consider Buddhist monasteries as a final complement to these overtly socio-economic systems. Contrary to secular expectations that monasteries are somehow separate from the everyday social life, in Manang they play a crucial role not only in reinforcing belief systems, but also for organizing social networks, contributing services, and redistributing financial capital.

Buddhism has a contested history in Manang (Mumford 1989) and local monasteries fell into decline during the general demographic exodus from the region in the 1980s onwards. But during my most recent visit during the summer of 2016 four major monasteries (with facilities for upwards of 100 monks each) were recently built or under construction in upper Manang. Each monastery belongs to a different lineage and has its own community of followers. In all four monasteries, the construction materials and all workers come from beyond Manang, as do all the teachers and most of the monks. The funding for these large construction projects and religious institutions, however, is provided for by Manangis themselves. Again, the inescapable mobility of people, material, and money connected to a stereotypically “traditional” organization in a supposedly isolated region is not just remarkable, it is an essential quality of life in this borderland area.

The conceptual focus of this research and the initial first two months of fieldwork during the summer of 2016 (May 15 - July 15) conducted as part of a larger ongoing project, was made possible through the support of an IMTFI research grant. My initial proposal was based on shorter, recreational, visits to Manang during the winter of 1999-2000, summer of 2002, and again in the summer of 2014, when I observed the rapid road construction and exploding *yartsa* harvests. My previous research has focused on the simultaneous transformations of space and culture in the urban environment of Lhasa, Tibet. I plan to pursue similar questions related to the cultural perceptions of space in a more comparative, creative and theoretical vein as research on this project continues.

FINDINGS

INFRASTRUCTURE DEVELOPMENT

The new road, completed all the way to Manang in 2015, brings drastic physical, economic and social changes to the region. Instead of walkers, porters and donkey caravans threading their way up a single track from Besi Sahar to Manang for five to seven days, 12-seater four-wheel-drive Mahindra jeeps can now shuttle goods and people up or down the route in a single day. Different sections of the road were

completed over the last ten years, and finally connected in 2015. Nevertheless, the most striking sentiment most Manangis expressed in relation to its completion was surprise. One older guest-house owner related to my student that she cried when the first jeep drove through town, “not because I was happy or sad or because it was good or bad, but because I just could not believe it!” (Aspen 15/6/2016).

This surprise, despite ten years of ongoing construction, indicates a dramatic divide between local communities and large-scale infrastructure projects conceived and funded by national and international regimes. Although plans and promises have circulated since the 1970s, and the lower stretches were built as early as 2004, the complete road was finally prioritized and investment provided by the ADB in 2008 (ADB 2007). The construction has been carried out through extra-regional labor, expertise, and supplies. Dozens of maintenance and construction crew members I passed during the summer of 2016 were all from other districts of Nepal (Dhading, Rolpa, and Ghorka in particular). In further discussion with Manangis, feelings ranged from disenchantment to ambivalence. Nobody, except the co-owner of the new apple orchard (see below), was unequivocally in favor of the road. When pressed, several people objected to the dust created by jeeps and motorcycles racing past in the dry climate. When asked further about how this road might affect their life, there seemed to be a grudging acceptance that it was easier to go and come from Kathmandu. Some elders admitted that they tend to come and go more frequently, and that it was easier to seek medical treatment. Costs are at least a quarter of what they used to be, but many people also expressed frustration over the unreliability of the transport. One entrepreneur complained that it took him three months and several stages just to get a load of plywood up for his shop because there were continual closures and then he would have to arrange for storage and another jeep. The road also does not serve tourists: during three trips I made up and down this road in the summer of 2016, and the hundreds of people I saw shuttling back and forth, I noticed exactly two foreigners (besides myself) sitting in a jeep.

This is only one example of the vagaries involved with infrastructure in the region. There has been a nationally funded hydroelectric plant on the upper Marsyangdi river since 1990, it was unreliable and another plant was built for the villages of Manang, Khangsar and Tenki with thoughts to sell further afield whenever the need arose (which was often). Immediately after, the national plant was refurbished

and there is now a huge electricity surplus in Manang, with no way to connect to the national grid; the new plant remains idle much of the time. The airport received spotty service from airline companies for two decades; one entrepreneur finally raised enough money to have the runway paved in 2014; there has not been a single flight since then. Two cell phone companies dominate the Nepal market - NCELL and NTSC. One has better coverage closer to the lower Besi Sahar and upper Manang but not in between, the other works spottily all over; people regularly carry two phones with different SIM cards for each service. Wireless Internet services were introduced early in 2016; again two companies set up systems concurrently and it is not yet clear which works better. At Rs2,500-5,000/month the rates are affordable for tourist businesses but not for individual families. Smartphones are prevalent so the commercial routers get overloaded with friends and family using social media sites and watching online videos. Many guesthouses, again, have installed systems from both companies since one had initial glitches that have since been fixed. As with the road, Manangis seem more surprised than anything by the prevalence of Internet. Nobody I questioned in Manang had given much consideration to how the new connectivity might affect their business or life. Questions regarding education and media had not been considered although teenagers are adept at downloading music videos and spend much of their time on social media. One hotel owner in Jomsom, the big tourist town on the other side of Annapurna, has joined online booking services such as bookings.com or agoda.com and says it has made a huge impact on his occupancy rates; but none of the eleven managers I spoke with on the Manang side have yet considered this possibility.

Despite impressive claims for the economic and social impact of infrastructure development and connectivity (e.g. ADB 2007), the lack of cohesion and local cooperation amongst these various projects is striking. As we will see in the following sections, the major economic activities in the region (tourism and *yartsa gunbu*) predate infrastructure development; education and healthcare have not improved regionally (though external access is easier), and only one major enterprise (the Agro Manang apple orchard) seems to be taking advantage of new opportunities allowed by infrastructure development.

TOURISM

Tourism has been the economic mainstay for Manang since the 1980s. The rise of tourism corresponded with the concurrent decrease in the Manangi import/export trade advantage as well as the creation and international promotion of the Annapurna region as an environmental “conservation area” (Rogers 2004). As with everywhere in Nepal, tourism in Manang suffered during the harshest years of the civil war during the early 2000s. It took a few years after the ceasefire in 2006 before trekking to the region approached pre-2001 numbers (approximately 13,000 ins 2007; Subedi 2011). Many operators and proprietors were worried that tourism would again fall dramatically after the 2014 avalanche and 2015 earthquake, but were pleasantly surprised when numbers were almost “normal” for the Spring 2016 season.

Given the continued flow of tourists despite political and environmental catastrophes, there is a persistent optimism that tourism is a fundamentally secure enterprise for Manang. New guest houses open each year, while older ones seek to expand their capacity and amenities to accommodate more visitors. The latest count lists 336 guest houses in upper Manang (ACAP office). One young proprietor expressed this sentiment in response to my inquiry into his plans for more rooms, showers, a covered balcony, “Tourism is the only sure thing” (Tenzin 27/5). Interestingly, the parents who had built the guest house back in the 1990s complain that the same son only comes up for tourist season, “then goes back to Kathmandu and spends everything we’ve made during the season here.” The situation is characteristic of absentee owners and minimal re-investment in a regional industry that is viewed as failsafe rather than cutthroat. Although the capacity of several guest houses has increased over the fifteen years since my first visit, the standard of accommodation, food, facilities, and services remains much the same. In most cases, the owner only spends minimal time in Manang during peak season, and hires managers, cooks, and cleaning staff from elsewhere to take care of the day-to-day operations and upkeep.

Despite my excitement upon visiting in 2013 that the prevalence of mobile-phones and the imminence of the road and internet would impact this notoriously volatile industry, things remain much the same as my first visit in 2000. One newly hired manager from the lowlands of Nepal jokingly played along with my inquiries into the influence of the Internet, “Yeah, I got this job through the Internet.” At my overly eager prompt he related the story, “My brother works for the Internet company, and he

was up here fixing the gear that they messed up on the first installation. Lobsang [the owner] was talking to him about needing a manager, so my brother told him I had just left my position in Kathmandu and was looking for a job. So it's thanks to the internet that I got this job!" (Shiva 23/6) His sarcastic awareness of how the Internet might work as a network system in the rest of the world was balanced by a bemused sense that of course it doesn't operate that way here in Manang. To this day all transactions are exchanged in cash; there are no pre-pay or credit card services; and even changing dollars to Nepali rupees can only be done informally, with luck and local acquaintances.

Exactly two hotels, amongst the 300+ guest houses now functioning in Manang, take a more visionary approach to tourist development. The first is a large, supposedly "three star," hotel under construction in the old town of Braga. The scale and design of the hotel are beyond anything else in the region and the investment comes from a Manangi businessman who is rumored to live in Hong Kong, is a regional executive for Samsung, but made his serious money with *yartsa gunbu*. The construction began five years ago, and according to the workers from India who return each year, "it will take at least another five years to finish" (Suraj 28/5). Another hotel in Ngawal is nearing completion, and though not of three-star standard, is a cut above the norm with plans for an in-house museum, sculpted landscapes, a modern bar and restaurant (taking advantage of the now reliable electricity) and partnerships with travel companies that would depend on moving tourists by the road (Mukhia 16/6). These are the rare exceptions to a sort of "status-quo" attitude amongst Manangis that simultaneously depends on tourism but does not perceive the need or capacity to actively influence its development. One businessman crudely compared this nonchalant attitude towards the tourism market to that of a man who can't be bothered to seduce a woman, "he just expects her to lie back for him" (Tripple 30/6/16).

YARTSA GUNBU

In 2016 the *yartsa* season was widely viewed as the worst since commodification began in the late 1990s. Not only were the buying prices lower than they had been in over a decade, but both the quality and quantity of the picked *yartsa* was terrible. In previous years pickers in the pastures above Manang might find anywhere from a low 20 to over a hundred pieces in a good day. This year people were regularly finding only three or four in a day of picking, and hardly ever more than ten. Amongst a group of eight

friends I accompanied one day, each person found between four and six “insects”, and several of those were of such poor quality as to be unsellable. The harvest in the upper valleys of Naar-Phu, which are known for much higher numbers as well as quality, was also correspondingly low (10-20 insects/person/day, and roughly half unsellable). This year’s low yield and low quality was reported not just across the Nepal Himalaya, but also in the high plateau regions of Tibet (China) and Bhutan.

Despite drastically shrinking supply, the buying price of *yartsa* was dramatically lower than previous years. A high quality insect might fetch approximately NRs1,500 last year, but this year pickers were lucky to get half that for their best specimens. Dealers determined unit prices based on the bulk prices offered by Chinese or Tibetan buyers in Kathmandu. The price for high quality *yartsa* had fallen from a high of US\$35-50,000/lb in previous years, to roughly half that by the end of season 2016. Prices were already down last year, but this drop was even sharper.

Does all this mean that the *yartsa gunbu* market has peaked and is now crashing? Similar high-value products such as Matsutake mushrooms or Puer tea have followed a similar trajectory of consistent rise and then sudden crash in East Asian markets (Tsing 2015; Yeh 2000; Zhang 2013). In this case, the environmental and human systems seem to have uncanny correspondence with each other. Many in Manang are not surprised by this, and attribute the declining yield as well as the slow market to an unethical greed amongst pickers and dealers. As one businessman who has notably abstained from dealing with this market said, “The *yartsa* is great because it brings more money to people who need it. But it also encourages bad character, greed and competition. It ruins the land and ruins people” (Mukhia 16/6). This statement echoes sentiments expressed by pop-singers, intellectuals, teachers and nomads on the other side of the border in Tibet, “Picking ‘*bu* is very sinful, as it is a treasure of the earth. Minerals have also been taken away, taking away the *bcud* [sustenance] of the place” (Yeh and Lama 2012; my translation;). The fungus has been used in Tibetan medicine for several centuries (Craig 2012). So, while killing a sentient being (worm) or digging the earth are both morally fraught activities, it is the selfish motivation and massive scale of operations, compared to industrial mining in the quote above, that causes consternation with the present situation.

Somewhat ironically, the recent increase of sponsored festivals, rituals, and monastic construction funded by *yartsa* profits speaks to precisely this ethical problem.

Increased economic well-being is a good thing, but when it is obtained through ethically dubious action, meritorious donations are needed both to assuage local deities and restore personal merit. This motivation was confirmed by a village committee representative who told me that the first priority of funds collected through permit collection was to sponsor annual rituals and the construction of the new monastery; a lesser portion of the funds were designated for community improvement such as water systems, building maintenance, or electricity (Kalu 13/6).

Conclusions

The *yartsa gunbu* fosters a peculiar system, from moth and caterpillar, through fungus and pasture, to a high-value commodity that is harvested by migrant pickers, traded by absentee indigenes, and dependent on an elite medicinal market in China. Despite the millions of dollars harvested and traded each year from Manang, there is no major re-investment into the local economy except through religious festivals and monastic expansion. The commodity-chain thus moves across species, environment, and human bodies as well as markets, morality, and metaphysical realms. The terrestrial connections to other economic systems such as tourism, agriculture or infrastructure development remains weak.

This trajectory through varying species, spaces, and systems presents a challenge to conventional modes of disciplinary investigation (Kirksy and Helmreich 2010; Tsing 2009). One objective of my research was to create maps that could help to illustrate the different types of movement I view as critical to the perception of place in Manang. Unfortunately, this aspect of my research has not been as fruitful as I had hoped. First, the GPS technology (plotting photographs to precise coordinates) I hoped to use is slow and error prone in steep mountains and variable weather conditions (requiring several minutes to obtain stable readings), so I abandoned the idea. Further, and more relevant to the subjects themselves, the variance between times and routes I hoped to address in this study are not readily “mappable” without reproducing precisely the conventions of geographical maps that I would like to question. This “cartographic anxiety” (Harris 2015) - the desire to reproduce a “correct” map - afflicts both myself and those with whom I work. I hope to address this aspect of technological, infrastructure and bodily “friction” (Tsing 2010) theoretically and artistically in preparation for my research

presentation at The Association for Nepal and Himalaya Studies later this summer (University of Colorado, Boulder, Sept 1-4, 2017).

Questions

The response to one of my primary questions going into fieldwork - what are the effects of the 2015 Nepal earthquakes on the infrastructure and life of Manang? - is simple: hardly any. The quakes that caused such devastation ranging barely 50km to 200km east and south of Manang barely rattled the windows of the valley, so even dilapidated old buildings remained standing, and nobody was injured.

The larger questions remain: What is the relationship between technology and everyday life? How does infrastructure and technology affect notions of place? How do different socio-economic systems perceive and interact with the environment? And what are the relationships between these different systems?

Not surprisingly, I do not have simple answers to these questions. But, as suggested by my introduction, the dominant characteristic of all the systems I considered was *movement*. Given the relatively short duration of my fieldwork, and the almost continuous movement I undertook during this period, I am very wary of projecting my own unusual role as ethnographer onto those around me. However, the more I moved to and through Manang, it became clear to me that almost everyone else was also *moving* to greater or lesser degrees and for different reasons; the few people who stayed still were a striking exception to this tendency. Mobility itself seems emblematic of this (and other?) border regions; my project, then, seeks to shed light on *different types of mobility* in Manang, and how they do or don't relate to each other.

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