

THESIS

THE VITALITY OF ICE AND BONE:  
KNOWN UNCERTAINTY AND AWARENESS IN CHANGE THROUGH DOLPO, NEPAL

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## ABSTRACT

### THE VITALITY OF ICE AND BONE:

#### KNOWN UNCERTAINTY AND AWARENESS IN CHANGE THROUGH DOLPO, NEPAL

At least one thousand years of caravanning yaks through the remote Himalayas have significantly shaped the practices of the Dolpo-pa, a culturally Tibetan population dwelling through the highlands of Midwestern Nepal. In turn, those practices have significantly affected how the Dolpo-pa conceptualize their world, the models by which they frame the experiences that effect those practices being directly and continuously synergized with the ecological realities of the existential present in persistently confirming, contesting or altering their awareness of those experiences. Physical reality at the biometabolic scale of ecological processes, therefore, which is as a rule perfunctorily and uncritically framed by observers descended from the specific histories of the European Enlightenment as the second-order reification labeled *the environment*, is schematized by the Dolpo-pa as something more like an “entanglement” in the uncertainty inherent to dwelling through that scale. As such, unlike the Cartesian divide elemental to the Western model that distorts reality by a cognitive trick of circular framing in reifying second-order conceptualizations and taking those reifications as first-order realities in the world, ethnographic evidence indicates that the Dolpo-pa culturally model themselves as unique and distinct as humans but not as separate from their domain of metabolic entanglement.

The difference in these representations is significant, not only because it highlights the emergent cultural model of the Dolpo-pa after extended engagement within that unforgiving mountain environment but also because it suggests what is being lost with the increasing contravention of the Western model of development into that domain. The Dolpo-pa’s increasing

acquiescence to the distortions of that model is beginning to disentangle at very basic levels their unique awareness, which is especially evident in new forms of social fragmentation that have only since around 2005 begun to influence how individuals in Dolpo constellate schemas of intra-entanglement arrangements and extra-entanglement connotations there. Worryingly, such new, second-order constellations have been concurrent with an increasing decline in the reliability of deep-rooted cultural models of known ecological uncertainties to effectively frame recent experiences with rapidly changing phenological conditions as average weather patterns (i.e. climate) have steadily altered in recent years. The Dolpo-pa's cultural model of entanglement is unfortunately incapable of proficiently conceptualizing let alone adequately representing and responding to changes at the technometabolic scale of industrial processes, whence such phenological changes have originated but at which few among the Dolpo-pa have experience or proficiency negotiating. This thesis concludes with a brief discussion of how continued decline in the efficacy of the Dolpo-pa's cultural model of entanglement is progressively leading to greater *existential dissonance*, a concept introduced here in conclusion that qualitatively gauges how such disentanglement gives rise to an increased likelihood of physical loss of life or livelihood within experiences no less physically entangled at the scale of ecological processes.

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## CHAPTER 1 – ADUMBRATIONS (IN LIEU OF INTRODUCTIONS)

### ADUMBRATION – *THE ITALICIZED ENVIRONMENT*

The Dolpo-pa (the people of Dolpo), ethnically and culturally Tibetan transhumant agro-pastoralists dwelling in and trading through the high Himalayas of Midwestern Nepal, conceptualize and represent their position within the environment very differently than do observers (like myself) from the European Enlightenment's Cartesian tradition who trek in and over those still-remote vales and passes of Dolpo to observe the Dolpo-pa and propose in professional reports and academic publications and graduate theses (like this one) from interpretations based on those observations how the Dolpo-pa very differently conceptualize and represent *the environment*. The italics illustrates the difference, as it separates rather arbitrarily from the rest of the text that *the environment* in the previous sentence from that 'the environment' that is also a part of the text of that sentence but that is not so marked and is therefore not seen in separation from the balance of the text by the reader (look back; see for yourself).

The point is not merely that the italics marks the text but that italics has itself been naturalized as a device for marking text and so is now perfunctorily accepted as such, emphases through italics operating on all but the most attentive of readers not so much by dictating emphasis (which it does) so much as by de-emphasizing words and ideas that are not so emphasized in having marked them. Such manipulation of a text can be distorting, of both intended and inadvertent understandings and interpretations and approaches to the text and its many possible meanings as interpreted and attended to within the physical realities of the terrestrial world.

As was that purposely placed italics, however, the circularity of meaning in the first sentence of the opening paragraph of this thesis was also very deliberate (look back; see for yourself). It linguistically suggests how the uncontested assumptions and unchallenged nuances of the Enlightenment's Cartesian tradition of the 'scientific observer' are even now naturalized within the schematic constellations of cultural models as fixed 'truth' in perfunctorily and uncritically accepted reifications such as that second *the environment*. Such 'truths' are then perfunctorily and uncritically incorporated in the implicit assumptions and explicit claims of those reports and papers and theses (like this one) referenced in that first sentence above that are written about 'peripheral' (another schematic marking) people like the Dolpo-pa by such observers (like myself) from that Cartesian tradition that persists now at the scale of technometabolic processes.

If, however, as anthropologist Alf Hornborg (2001:112; see also Marcus and Fischer, 1986) argues, "the ultimate justification for anthropology is not the comprehension of others as an end in itself, but the possibilities of converting experience of cultural multiplicity into a critical scrutiny of our own, Western habits of thought," then such uncritical acceptance of those most naturalized and entrenched schematic markings—such as *the environment* (among many, many others)—of that very specific tradition of Western Enlightenment thought through which such 'scientific observers' have become accustomed to and thus unduly uncritical in expressing themselves must be re-framed as egregious and unconscionable and intolerable. This requisite is especially necessary for those Westerners and Western-trained individuals oriented to that technometabolic scale of industrial processes who nonetheless claim to be most interested in and enthusiastic about advocating for subjugated and peripheral peoples (like the Dolpo-pa are quickly becoming) but who still perfunctorily and commonly frame such peoples as *un-* or



*underdeveloped* (or *backwards* or *primitive*, depending on the circumstance of the framing) because those people remain at this point not so technometabolically scaled or technologically progressed.

As will be argued in the following chapters, such peripheral peoples (note the easy acceptance of the schematization) as the Dolpo-pa continue even today to frame the known uncertainties of the domains through which they dwell and of which they schematize that dwelling—the first-order physical realities which are far less rigidly framed than are those second-order conceptual ‘truths’ of Cartesian thought even as the uncertainties of those physical realities are far more existentially present—at that very different biometabolic scale of entangled ecological processes. Differences in the perception and framing of the forces and magnitudes of power possible at the disparate scales of ecological and industrial processes, therefore, provide insight into how the incursion of technometabolically-scaled change, both material/perceptual and conceptual, into the entanglements of people who schematically constellate their experiences and proficiencies through ecological processes disrupts those peoples’ emergent synergistic awareness at that biometabolic scale of power and magnitude. Such disruption pushes these peoples to disentangle from that scale and to settle—materially penurious and conceptually delegitimized—at the outer edge of the increasingly hegemonic technometabolically-scaled global system with which they have neither experience nor proficiency.

Such a piteous re-settlement is also pitiable, however, as peoples like the Dolpo-pa at the same time acquiesce to the pull of such a delegitimizing frame of scalar disparity in illusorily framing the short-term benefits of the products—like clothing and packaged foods—manufactured through the power of that unknown technometabolic scale with the long-term promises of what might be called the ‘cognitive trick’ of the Enlightenment cultural model that

undergirds those productions. This trick circularly distorts the framing of such second-order reifications as first-order objects of physical reality in the terrestrial world. As such, this trick deludes with the promise of certainty even as it increases uncertainty by thus disentangling such peoples from the domain of their synergistic awareness of material experience and conceptual proficiency, especially in times and spaces of swift and accelerating change.

#### **ADUMBRATION – CONDITIONALLY-STRUCTURED SURFACES AT THE BIOMETABOLIC SCALE OF ECOLOGICAL PROCESSES & THE DISTORTED FRAMING OF REIFICATIONS**

In geological as in evolutionary time, neither of which is at the temporal-spatial scale of ecological processes but both of which is at its own scale of time and space, change occurs quite frequently, an adverbial expression meaningful only relative to an appropriate scale—quantum, biometabolic, evolutionary, geological, cosmic. Human conceptual proficiency, however, emergent through the evolution of the physiology of the cerebrum at the biometabolic scale of ecological processes, is itself oriented almost entirely to that scale of ecological processes, which means that change scaled to non-biometabolic times and spaces are all but invisible to such emergent conceptualizations' not insignificant proficiencies. Because changes at the temporal-spatial scales of the geological and the evolutionary (and the quantum and cosmic, for that matter) are more or less invisible to the emergent conceptual proficiencies of the first order human-surface, which has arbitrarily evolved in response to evolutionary pressures as the human-animal whose selective advantage is the synergy between its phenotype-surface and its conceptually proficient-animal being, both first-order experiences and second-order conceptual schemas transmitted and shared as the schematic constellations of cultural models tend to disregard changes at non-biometabolic scales as being more or less the equivalent of white noise, a fixed and ageless background to which none but passing (if any) attention need be paid.

Of course, interpreting and experiencing the expansive, dynamic arrays of non-biometabolic scales in this way distorts the reality of the constant flux of physical force and magnitude at those other scales. But it also—and more advantageously in terms of genetic propagation—enables the human-animal to more efficiently and effectively synergize those evolutionarily emergent human-surface cum -animal characteristics in further augmenting their selective advantage of that synergistic awareness to thus ensure a continued thriving within that scale of life and livelihood that is the domain of ecologically entangled processes.

At the biometabolic scale of ecological processes, therefore, the emergence of the vaunted conceptual proficiencies of the human-animal can be said to demark human-animal distinction only as much as material distinctions demark the uniquely human-surface phenotype, the true distinction of humanness being in the synergistic awareness effected of the two in the surmounting of the physical forces and magnitudes possible of ecological processes at that biometabolic scale. As such, that scale is unique in that, as Gibson (1979:16) argues, it can be described not in terms of the dubious idioms of classical physics, which models the universe as consisting of bodies in space, but “in terms of a *medium*, *substances*, and the *surfaces* that separate them.” Framing such a physical triad, Gibson (1979:22) continues, provides for both persistence and conditionality in the endurance of structure through time-space in that

the medium is separated from the substances of the environment by *surfaces*. Insofar as substances persist, their surfaces persist. All surfaces have a certain *layout* . . . and the layout also tends to persist. The persistence of the layout depends on the resistance of the substance to change. If a substance is changed into the gaseous state, it is no longer substantial and the surface together with its layout ceases to exist.

Anthropologist Tim Ingold (2000:3), who calls Gibson’s influence on him “a revelation” (I concur), writes of Gibson’s approach, which in the late 1970s was rather contrary to the mainstream of psychological study:

It was to throw out the idea, that has been with us since the time of Descartes, of the mind as a distinct organ that is capable of operating on the bodily data of sense. Perception, Gibson argued, is not the achievement of a mind in a body, but of the organism as a whole in its environment, and it is tantamount to

the organism's own exploratory movement through the world. If mind is anywhere, then, it is not 'inside the head' rather than 'out there' in the world. To the contrary, it is immanent in the network of sensory pathways that are set up by virtue of the perceiver's immersion in his or her environment.

As such, as Gibson (1979:23) continues, within the triad of medium, substances and surfaces, the latter is so important because

surfaces are where the action is. The surface is where light is reflected or absorbed, not the interior of the substance. The surface is what touches the animal, not the interior. The surface is where chemical reaction mostly takes place. The surface is where vaporization or diffusion of substances into the medium occurs. And the surface is where vibrations of the substances are transmitted into the medium.

Indeed, the existential present *is* physical reality by the intersection of surfaces in ecological processes, which occurs at a scale at which all perceptible experience leaves each dissipative structure either more dissipated or more structured in passage towards inevitable end in complete dissipation into the always outstretched arms of entropy. It is the scale at which ecological processes undergo what Martinez-Alier (2007:223) calls "biometabolism" through which the "genetic instructions regarding endosomatic energy use" in such dissipative structures play out through ecology. This scale contrasts markedly with what will be referred to in this thesis as the scale of "technometabolism" at which "exosomatic energy use, which can only be explained by history, politics, economics, culture, and technology" play out through industrial processes.

As such, all conditionally-structured surfaces cum dissipative-animal structures struggle from moment to moment to surmount the uncertainty of being so arrayed within the thin range of force and magnitude that shifts and cleaves asymmetrically those surfaces that constantly dissipate structures around them at that biometabolic scale of ecological processes. This reality is no less true for humans, of course, whose second-order conceptual proficiency is always, regardless of the distorted framings of the tautologies of the cognitive tricks it can delude itself with (and share and transmit culturally), grounded in and confirmed, contested, or altered by

such first-order material experiences of physical reality within the existential present at that scale.

As argued in this thesis, therefore, the unique circumstances of that one particular place (Western Europe) at that one particular time (the Enlightenment) has yielded a historical trajectory by which the reifications made possible by this evolutionarily emergent conceptual proficiency of the human-animal are increasingly cognitively modeled as of first-order concern in just such a distortion of reality that continually deludes through the generation of a conceptual tautology that thereby confirms as first-order those second-order reifications of its own representational illusion. As such, climate change, for instance, as will be argued, cannot be reasonably construed as the problematic in a place like Dolpo (or anywhere else, for that matter) because, especially as circularly framed in current hegemonic quantitative discourse, such change has been distorted as a first-order concept through its reification as an object in the world even though climate has and can ever be no more than a second-order model that imprecisely adumbrates the very real first-order material experiences of physical change to such conditionally-structured surfaces in the entangled domain of terrestrial space such as Dolpo is. Climate, that is, cannot of itself change because it does not in itself actually exist in the physical reality of the object-world; the material change of which this thesis is concerned, that is, can only in fact occur within the physical reality of those perceptible forces at those biometabolically-scaled ecological processes of dissipation and structure.

Too often de-emphasized in over-accentuation of such illusory changes on the second-order, however, is that within such an entangled domain as is Dolpo, two very real first-order physical changes certainly are possible at that biometabolic scale. First, material experiences of the physical force and magnitude possible within ecological processes can change. Second, the

qualitative characteristics of those possible first-order physical forces and magnitudes within the thin range of the biometabolic scale relative to the quantum and the cosmic can themselves change. These two changes are not the same, nor do they necessarily occur concurrently, though, clearly, the former is nested within the latter. Portentously, however, since the Enlightenment generation of that tautologically distorted frame in the 17th and the subsequent onset of the Industrial Revolution in the 18th century of the current epoch of Western European (hegemonic) experience (Taylor 1996), that latter change has also been increasingly (and very physically) nested within the former, the entropy of industry in the form of emissions (among other effluents) increasingly destabilizing the nonlinear physical systems of the atmosphere with the anthropogenic discharge of greenhouse gases that is resulting in generalized warming of the terrestrial surfaces of the world (IPCC, 2007).

Even though this warming is causing clear and observable phenological changes to biometabolically-scaled domains of experience and perception around the world, because of its artificial force and magnitude and never-before framed technometabolic scale this industrial configuration cannot be so clearly schematized by the evolutionarily emergent proficiencies for synergistic awareness of the human-animal. This portentous configuration, that is, in circularly confirming a reification as a first-order physical reality by the evidence of its own generation, which is itself not scaled to the biometabolic scale of ecological processes, nevertheless has significant and worryingly underappreciated implications for those processes at that scale, of which the human-animal, like all terrestrial surface-life, is fully and enduringly (such is the hope) a part, regardless of the forces and magnitudes made provisionally possible by the production capacities generated by that industrial configuration<sup>1</sup>. As numerous reports and papers have shown, these changes have been especially swift and intense at the terrestrial poles and in what is

often called ‘the third pole’ of the Himalayas (Qiu 2008; Eriksson *et al.* 2007); significantly, therefore, ethnographic evidence adduced in this thesis not only confirms these observations but also illustrates how such technometabolically-scaled changes are having very real material and subsequent conceptual consequences for populations like the Dolpo-pa who even now remain entangled within those domains of biometabolically-scaled change.

### **ADUMBRATION – THE PLAN, BOTH OSTENSIBLE AND FORTHRIGHT**

Ostensibly, therefore, the following chapters will expatiate how the Dolpo-pa, who by the biometabolically-scaled power of their yaks were for at least one thousand years brokers in the grain-for-salt trade networks between the Tibetan Plateau and the Middle Hills of Nepal, approach and culturally model their swiftly changing interconnections with the complex physical and social arrays that scale variably over the contemporary world. More forthrightly, however, the following chapters will not only expound an ethnographic interpretation, adduced through the mixed methodologies of cognitive anthropology, of how the Dolpo-pa’s cultural model of entanglement within the terrestrial domain of Dolpo derives from the asymmetries of first-order physical uncertainty with which they contend daily but will also suggest that perfunctory and uncritical acquiescence to the distortions of the framing of ‘progress’ as adduced by the cognitive trick of the European Enlightenment’s technometabolic scale of industrial production is increasing the Dolpo-pa’s existential dissonance, a concept introduced here that gauges how the disentanglement of synergistic awareness with the increased influences of technometabolically-scaled industrial power also increases the likelihood of loss to life or livelihood within a no less physically entangled domain at the scale of the ecological.

## CHAPTER 2 – METHODS & STUDY LOCATION

### PART I – METHODS

... there are things we can learn about people by actively engaging with them, talking to them, and listening to them that we can learn in no other way. By taking advantage of peoples' human capacity to reflect on themselves and their experience (an advantage we have over archaeologists or primatologists), we learn what they think about, feel, imagine, or obsess on and how these preoccupations affect their overt behavior, if at all. We learn how over-determined and motivationally complex conventional behavior can be, and how it can be used to divert attention from, or secretly gratify, other, less socially acceptable preoccupations or concerns. We learn that what people are willing and able to tell us about themselves changes as our relationships with them deepen and evolve over time. We learn what part of peoples' minds and behaviors they have conscious access to and what part they do not, and how those parts are dynamically related. Not least, we learn what people most value, enjoy, fear, or dread in their lives. And how people who can look so similar in their overt behavior can be so different from a psychological or experiential point of view.

Douglas Hollan (2005:465)

A somewhat lengthy epigraph for the methods section of a thesis perhaps, but considering anthropology's current and projected history, the clarity of Hollan's statement in concluding his discussion of the pioneering methodologies of Robert Levy bears important witness to an approach to the study of culture that I advocate and earnestly expect to emulate into the future. Though analytical, it seeks first to learn and to know, drawing conclusions not in the dismissal of the practice that observation always is but of the mystification in framing of that practice that "converts a practical succession into a represented succession, an action oriented in relation to a space objectively constituted as a structure of demands (things 'to be done') into a reversible operation performed in a continuous, homogenous space" (Bourdieu 1990:90).

Not only is identification of this distinction imperative but so too is it practical in application to all "scientific" inquiry. Possibly led by the example anthropology provides in having reinvented itself over the last fifty years, such inquiry must continue to evolve methodologically in its pursuit of defamiliarized analysis of 'the other' that recognizes, by "objectify[ing] the objectifying distance and the social conditions that make it possible" (Bourdieu, 1990:14), that despite the benefits of such inquiry into the logic and significance of



the entanglements of beings that “do not exist at locations . . . [but] occur along paths” (Ingold, 2006:14), such inquiry is subject to the same framing as is all interpretation of physical reality. Not data, I submit, therefore, but such defamiliarization, the ongoing process, enhanced by field study, by which the synergistic awareness through which a participant-observer reproduces the reasonable frames of his or her own assumptions is increasingly forestalled with the allaying of the naturalization produced of that synergy in the surfacing of tolerance and empathy, should, therefore, be the primary goal of inquiry, especially in the social sciences.

At first, I acknowledge, this proposal appears rather untenable, absurd even, academics and practitioners having become, even as their methodologies have made such apposite strides over the past several decades to overcome bias, so inured to the sonorous toll of the funding bell and the imperatives of ‘publish or perish’ that unreason often now overshadows the practices and passions of their training. Thinking on it further, however, this proposal is consistent with the growing understanding of how, though much of culture consists of internalized cognitive assumptions exploited in the fulfillment of the tasks of everyday life, “the other side of culture is the visible, but always partial and often cryptic, manifestations of [the] shared understandings that people produce” (Quinn 2005:4). Further on, Quinn asserts, referring specifically to discourse analysis, that one of the goals of cultural study is to “tease out” meaning. Defamiliarization has a similar goal, conceived of more broadly, claiming not that an observer could ever seamlessly superimpose his/herself over the culture being observed, which would result in little more than a super imposition of the form made infamous by the ghosts of anthropology’s past, but that the thwartwise overlay of observer and culture effected by such defamiliarization promises better outcomes as well as more and more apposite data than previous approaches have produced or could produce. This is, foremost, because defamiliarization

requires not a pathetic attempt at “going native” but a synergistic awareness that reflects in the synergy of its process the synergistic awareness of the material experience and conceptual proficiency by which culture itself forms through extended engagement within an environment.

As Handwerker (2001:107) writes:

Spending time getting to know someone opens the only door available for you to learn what that person sees and what it means when he or she looks out at the world. This calls for the personal sensitivity and creativity to allow people to feel comfortable with you, to communicate clearly to people whom you ask for assistance that you are nonthreatening.

Current mixed-methodological strategies from Cognitive Anthropology, utilized in the conduct of the present study in Dolpo, provide a reasonable heuristic for engaging and experimenting empirically with such an approach, which is reflected in the following account of this study’s methodologies.

## **PERSONAL MOTIVATIONS**

Dolpo is one of the most physically remote areas in the contemporary world, lying well-nigh at the periphery of the periphery of the world system, both logistically and economically. Far from untouched by time, as they are described in many trekking companies’ descriptions<sup>ii</sup>, however, the ethnically and culturally Tibetan Dolpo-pa are very much current, with each passing year becoming more and more engaged in the patterns of exchange that comprise the world system even as the entropy produced by that system increasingly circulates through and affects the known uncertainties of the physical realities through which the Dolpo-pa continue to dwell in subsistence at that periphery.

My motivations for conducting research in Dolpo nearly all derive from these verities. Having for nearly a score of years been an informal student of Buddhist history and philosophy and having for about as long a time also been intrigued by Tibetan culture and history, in 2005 I

traveled to Lhasa for five weeks, taking two trips by Land Cruiser from the capital during that time, one to the sacred lake of Namtso and the other, to end the trip, down from the barren Tibetan Plateau and into the verdant lushness at the Tibetan-Nepali Border, where I walked over the Friendship Bridge into of the Nepali village of Kodari. After a several hours drive from the border, I remained in Kathmandu for several days before traveling on into India.

This trip was very influential for three reasons: 1) It not only affirmed my appreciation for Tibetan culture but it also roused a deep admiration for how the Tibetan people I met, especially while traveling outside of Lhasa, approach living with abiding generosity and affirmation regardless of the deprivations and subjugations to which they are increasingly subjected, in both occupation and peripheralization; 2) It enticed me to want to return for a longer sojourn in Nepal, where in three days time I was met with genuine smiles from such atypical places as the immigration office at the border where I received a gratis transit visa, the restaurant in the small town on the paved road to Kathmandu where the driver of the car I hired pleasantly served as interpreter/guide/ lunch companion, the guards at the military checkpoints who beamed while clinging tightly to their M-16s once they checked my passport and confirmed I was not a Maoist insurgent, the bedraggled rickshaw-wallahs and spindly sadhus of Kathmandu who live and live on, again and again; and 3) It persuaded me that I had to begin the transition from writing and literature instructor with a long-standing interest in cultural studies, development issues, and environmental crises to trained authority on such subjects.

Although I had made somewhat gratifying strides toward this goal before entry into the anthropology Master's program at Colorado State University, in deciding in the fall of 2010 that I would endeavor such an elaborate field study in partial fulfillment of the requirements of the degree, I sought to fare further forward, a former English instructor voyaging further on and

rather higher up. I chose Dolpo not only because it facilitated recursion to those influences elucidated above but also because it enabled me to fulfill an abiding ambition to forgo the Land Cruiser and try my mental and physical resoluteness in trekking into the remote Himalayas. Returned now, my world could never be the same.

### ***THE SNOW LEOPARD'S PALIMPSEST: HINDU HILLS TO HIGH HIMALAYAS***

The sky opened, and the big rain that had been threatening for days near the end of the unusually heavy monsoon season poured down. It flooded the streets and alleys of Kathmandu, dripping from the aging monuments and stone wraiths of Durbar Square, offering a muddled cleansing of our already untidy assembly of provisions (equipment, fuel, food for several weeks of trekking) and staff (5 porters and a translator/guide) and researchers (my assistant Jonathan and me) at the northern Gongabu Bus Park. I had actually been fool enough to believe that the two week delay in obtaining permits and permissions from the Nepali government bureaucracy might find us on the dry side of monsoon season. Mathiessen's (1978) tribulations through a similarly unending monsoon nearly forty years earlier on the same route onto which we would in the morning embark pressed upon me, a fool among fools at 5:30 in the morning in the rain.

### **QUALITATIVE RESEARCH**

Although an airstrip at Juphal, a three hour trek from the provincial capital of Dunai, was built several years ago, I felt it was imperative to suffer the extra time and expense (and days and days and days of rain, unfortunately<sup>iii</sup>) to make the trek around the snowy spire of Dhaulagiri (8,167 meters) from Darbang in the Hindu middle hills through the Dhorpatan Hunting Reserve and into Dolpa, as the province in which the subaltern Tibetan agro-pastoralists of Dolpo reside is officially named. Impelled by Handwerker's (2001:80) logic in coaching students of method to

“create multiple lines of evidence to assess the construct validity of [their] findings by using a variety of informants, different methods of data collection and analysis, and different questions bearing on the same issue,” my goal of defamiliarization seemed best initiated by engaging the liminal experience of crossing from a cultural and ethnic milieu exceptionally different from my own but still dominant within the arbitrary framing of space that is the nation-state and into a milieu produced by the schematized spaces of a subaltern population. Bernard’s (2006:366, 368) suggestions on maintaining naivete and on building rapport just by hanging out (well, in this case, trekking out) proved beneficial in realizing this goal.

The greatest benefit of trekking into Dolpo was the experience not only of crossing through several ecological zones but of doing so in the presence of my staff and even more so of the various individuals met, traveled with, and observed along the way. With such individuals, I discussed issues pressing upon the practice of their daily lives as they, too, trekked over those hills and through those valleys, up into or down from the higher elevations to the north, confronting the same elements and hazards as I did in participant-observation, though their confrontations were neither for analysis nor holiday but for the practical performance of their lives and livelihoods. I carried a pen and small notebook, double-bagged in two Ziplocks (oh, the rain, the rain), in the left, zippered pocket of my hiking shorts, ready at an instant to jot the scene or notes from the dialogues, though remaining cognizant of Bernard’s (2006:211) entreaty to minimize the researcher-informant boundary: “When it comes to [informal] interviewing . . . you have to remember a lot; you have to duck into private corners a lot (so you can jot things down); and you have to use a lot of deception (to keep people from knowing that you’re really at work, studying them).”

Considering our unique (in the area) ethnic and cultural circumstance, especially as we moved further and further afield from the more popular trekking routes around Annapurna, neither physical nor occupational deception was, however, really possible, or necessary for that matter. For instance, on what was probably our longest day of trekking, a day when in nine hours of nearly constant rain we ascended from around 2,800 meters at Dhorpatan to just over 4,000 meters at the pass over the Phagune Dhuri and then back down to ~3,100 meters at Takur, fording the furious river running fast down the mountain three daunting times, we met up and traveled with a gaunt, wrinkled woman in her forties and her eight-year-old daughter. They were from down in the valley and were making the ascent over the pass in order to shepherd their flocks back over the mountain to overwinter in their home valley. Our differences, especially in terms of the things we carried in making the ascent, the sturdy Gore Tex boots from REI versus the valueless flip flops from who knows where, were striking.

At the first major river crossing, the torrent rushing in grays and thunderous whites over smooth granite that here and there barely broke the surface of the surge, I noticed simultaneous to my thinking to myself something about the impossibility of the task, the sheer force of the water and the reasonable but no less unforgiving tumble down the thrashing throws that would follow being swept away, that the woman had removed her daughter's flip flops. Then, at the point of crossing that one of the porters had chosen after quick scrutiny up and down the river as the best and then dashed across, his nearly 90 pound load packed expertly in the straw *dhoko* (traditional basket), the majority of the weight borne by the *namlo* (tumpline) across his hairline.

As I approached, poking my hiking pole timidly into the water and watching uncomfortably as it was swept laterally even as I pushed it down to discover the riverbed, wondering still how to complete this so very unreasonable undertaking and thinking about the

loss of my laptop, of my life, the woman stepped past me, her daughter's flip flops tied now to her overgarment, her daughter held squarely by the shoulders in front of her, and into the water. She did not dash as the porter had, but she did move intentionally, keeping herself square to the water, clutching firmly to her daughter even as she lowered her center of gravity in bending her knees just so, deliberately, just so with each subsequent stride toward and past the middle of the torrent, the look on her face a mixture of concentration in faring forward and appreciation of the imminent existential crisis of continuity that she and her progeny faced in those moments—and her knowing nothing, I submit, of Eliot or Sartre, of the literature on DRR or even the basics of CPR.

And I was having a figurative heart attack, wondering if I'd have to turn back because I continued to wonder how, even as the porter dashed back across, looked me in the eye scrutinizing my readiness, and then led me, inexpert as a child proffered a netless net, a harnessless harness, by the shoulders through the torrent and to the other side. On the other bank, as her daughter slipped her flip flops back on and I began to remove and drain my sturdy Gore Tex boots, now sopping through and through (and for days and days afterwards), the woman sat in the moss of a wet rock smoking some foul smelling weed wrapped loosely in some sort of discarded paper, chuckling.

To me, being a human-animal, such a crossing was daunting and extraordinary, unreasonable, but to the woman and the porter, though no less daunting, their being no less human-animals, it did have a certain ordinariness to it, a reasonableness conceivable through the synergistic awareness of their entanglements that, in my observations both of them and of myself, provides a pertinent illustration of the “explicit awareness” (Spradley 1980:55) I needed to cultivate during the entire trip. Such an awareness would be necessary, I supposed, if I was to

benefit as I had hypothesized by focusing primarily on that defamiliarization of experience through the disorder of extraordinary experience that is so ordinary, so reasonable otherwise framed instead of merely on the acquisition of data as a researcher who, as an aside, almost once died in crossing a river while trekking to a study area across a mountainside.

As we ascended further, growing more and more fatigued with altitude and the terror of each subsequent river crossing, we stopped to rest with increased frequency. At each stop, we would exchange pleasantries with the woman, engaging in the small talk common in travel as she smoked that foul weed. She asked once what we were doing there, and through our translator I provided a vague explanation of study and research and university, to which she simply nodded, took a drag, and chuckled at the size of our packs, her store of provisions fitting loosely in a soiled piece of fabric the size of a shawl that she had tied and wrapped around her shoulders. Her daughter would sit beside her during these exchanges, relatively incurious about us, unsure, possibly afraid, Jonathan and me possibly being the first Caucasians she had ever seen.

We offered them some of our trail provisions (gorp and the like), and on our last break before making the final push to the pass, she offered us her bottle of *rakshi* (homebrew alcohol), which she declared through my translator was a most effective remedy for altitude sickness. Upon my declining, the thought of imbibing of such a distillate in such a place with so much longer to trek that day making my somewhat dizzy head dizzy, she only laughed, her eyes narrowing in amusement, smoke wafting up into them. At the pass, having just watched a goat being born through the mists of the low clouds, we exchanged well-wishes and took a photograph together beside the cairn that marked our end, showing her and her daughter their digital images to their further amusement. Then, we departed, she and her daughter descending



into the shadowy verdancy of a side valley awash in a multitude of cloud and green, we continuing on down the main trail into the isolated valley of Tarkur.

Such Participant-Observations continued all the way to Dunai, the capital of the Nepali Province of Dolpa, where we rested for two days before continuing north for three days along the Phoksumdo River into Shey-Phoksumdo National Park and Dolpo proper, where I took ill with flu for a week in the village of Rigmo at the boundary to the barren remoteness of Upper Dolpo.

Overall, a total of 26 semi-structured interviews were conducted in Dolpo, for a total of over 35 hours of digital voice-recording. The first interview protocol was derived from participant-observations during the trek into Dolpo as well as at least six preliminary, unstructured interviews and seven free listings that were focused on daily water usage. These were completed while recovering in Rigmo for just over a week before departing on the trek into the remoteness of Upper Dolpo. Then, on the first three days in Upper Dolpo, having sent our porters back to Kathmandu and hired four *dzoa* (yak-cattle hybrid) and their wrangler in Rigmo, we trekked the narrow trail carved into the rock several hundred feet above the impossible turquoise of sacred Phoksumdo Lake's western shore, down onto the mixed forest and grazing land of the glacial flood plain east of the Kanjiroba Range, through nearly frozen water calf-deep past the collapsing world of ice cascading off melting glaciers, then up and up above the tree line and over the Nangda La (5,360 meters) to Shey Gompa.

In those days, we encountered only four traders, from whom we received essential information about the state of the flooded trail and of a washed out bridge along the way. Into the chill of each night, while *dal bhat* cooked in pressurized pots in the kitchen tent, I worked by headlamp to complete the first iteration of the semi-structured interview protocol. Subsequently, based on informant responses and clarifications over the course of the first four interviews of the

most current conditions in Dolpo, I modified the protocol, the final iteration emerging in time to conduct the final semi-structured interview in Upper Dolpo and remaining more or less firm for the next 13 interviews back in Rigmo. The final seven semi-structured interviews, conducted near the end of the field study, involved a combination of questions from the firmed-up iteration and follow-up questions based on that iteration as well as response patterns noted during initial structured interviews.

Recruitment of informants for the first 5 interviews relied on a combination of happenstance (1) and the past contacts (4) my Nepali translator had made when he worked as a Ranger in Shey-Phoksumdo National Park for three years in the early 2000s (see Appendix I for recruitment script). Of those interviewed in Upper Dolpo, four were men and four were ethnically Tibetan while one was ethnically Nepali but had lived in Upper Dolpo for 18 years. Their ages ranged from 42 to 64. By happenstance in recruitment, I mean that our first interview was conducted with an elderly lama we happened to meet while touring Shey Gompa. He invited us up to the quarters of his lamasery, where his wife served Tibetan tea and, to our surprise, Snickerdoodle cookies transported down from Tibet in the previous year's trade caravan. These first interviews were conducted in Nepali (3), double translation from Tibetan (1), and English (1) during our 2.5 week circuit of the restricted area of Upper Dolpo, the most remote part of the entire trip<sup>iv</sup>. Because each interview was conducted in a different area along the circuit, I was provided with a small but interesting sample of responses from around Upper Dolpo, each response providing greater lucidity for the lens of defamiliarization through which I hoped to observe the Dolpo-pa.

Possible confounds in using the established contacts of our translator, though necessitated by time constraints and the expense of permits and sumpters for passage through the restricted

area of Upper Dolpo, were that we mingled little with local populations, though Upper Dolpo, as intimated, is so sparsely populated that this concern is rather self-limiting. Indeed, we did converse informally with several people for longer periods at several settlements along the trek. Another possible confound, however, is that my translator's four contacts in Upper Dolpo were all community leaders or ranking lamas (including the head lama of the entire Bon faith who resides at Samling Gompa), all of whom were far better educated than most of the population, possibly skewing results. I was concerned, therefore, because, as Handwerker (2001:110) suggests, "To study the social construction of meaning, be careful to elicit information about how interactions are experienced by *both* the focus person and each kind of social actor."

A notable self-limiting factor to this confound is that regardless of leadership position or wealth or rank in Dolpo, all individuals still either engage directly in agro-pastoral practices and trade, did so for many years at some point in the past, or are fully entangled in understanding the requirements of life and livelihood even for the poorest and lowest ranking of the Dolpo-pa. For instance, one of the richest men and no doubt the poorest man in the main study village of Rigmo were known by most other villagers who were asked as being the best of friends (Field Notes). The point is that although there are divisions in wealth and rank in Dolpo, there is little or no disdain between classes (between people, sure, but not between classes), all being either well-acquainted or at least familiar with most other inhabitants in a Village Development Community (VDC). In Dolpo, that is, despite its large geographic extent, six degrees or more of separation is all but impossible, the most separated an individual could be from another being likely half three.

At Rigmo (3,733 meters), an ancient village of fewer than 50 families (adult population = 185-200) inhabiting a collection of densely packed flat-roofed stone houses a short stroll from sacred Phoksumdo Lake, the projects final 21 semi-structured interviews were conducted, 13 of

which were over a one week period upon return to the village. Informants for these interviews, which ranged from 45 minutes to 130 minutes, with an average of around 100 minutes, were acquired by convenience. Indeed, the first seven informants were well-known by my translator, and he arranged our discussions as one of his duties. All of these interviews save one were conducted in Nepali, however, which disturbed me once I understood that only the more educated people in the village were fluent in Nepali, meaning that I was omitting a great deal of the opinions and experiences of those who were older or from poorer families. Of course, this could have proven to be a significant confound.

Of these initial seven interviews, one was conducted in English with the main lodge owner's daughter who had, while we were trekking through Upper Dolpo, happened to return to the village from Kathmandu for the first time in four years after having just completed her nursing degree. She was fluent in Tibetan, Nepali, and English and volunteered to assist with Tibetan translations for the remainder of the project<sup>v</sup>. With her, I was able to conduct 14 interviews in Tibetan with informants who would not have been accessible otherwise, and, as explained below, her assistance with structured surveys proved invaluable.

Informants' ages for the 21 semi-structured interviews conducted in Rigmo ranged from 21 to 70. Thirteen informants were male and eight were female. Two were lamas (one a geshe<sup>vi</sup>), five other males were traders<sup>vii</sup>, three were *yartza gumbu* collectors, one was a lodge owner and trader, and one was a furniture maker. Two of the women operated seasonal teahouses, one man (a Nepali married to a village woman) was the village shopkeeper<sup>viii</sup>, and four older women tended house and the family plots. One had just finished nursing school in Kathmandu and was awaiting her exam results; hers was the only English interview conducted in Rigmo.

Because life in the village is a more or less a public affair that unfolds each day at the pace of practice, tasks being accomplished as they need to be accomplished—no faster and no slower—with villagers coming and going from others’ houses throughout the day, interviewing at times proved difficult because of the almost assured gathering of an audience. Many interviews were, therefore, conducted in places least likely to be disturbed like rooftops or kitchen gardens, though a few were conducted at the convenience of the informant, who would otherwise not agree to an interview, in front of a home or shop. Of the 26 total interviews, only one (the fourth overall) was significantly affected by the gathering of an audience, and I ended it less than 40 minutes in because I felt that the interjections and distractions, though offering quite a good observational experience, invalidated the interview space.

## **QUANTITATIVE RESEARCH**

Upon completing semi-structured interviews a week after returning to Rigmo, I spent a day and a half on the shores of Phoksumdo Lake listening to interviews, assembling and taking notes, watching the water, marveling at life in the Himalayas, and hurriedly writing structured interview questions. The first surveys were not, however, conducted in Rigmo but in Pungmo, a four hour hike down from Rigmo, past the Taprizza Boarding School and onto the route leading over the Kagmara La and the no less than seven day trek to the town of Jumla back in the Hindu Middle Hills. Pungmo is also in the Phoksumdo VDC, which consists of a total of four villages, and I wanted to at least make an effort to conduct some structured interviews away from Rigmo. I managed to administer four surveys in Nepali in less than 24 hours before returning back to Rigmo the next day. Over the following 10 days, another 50 adults were surveyed in Rigmo,

including three traders passing through from villages in Upper Dolpo. The 47 remaining individuals account for ~25 percent of the adult population of the village.

Although survey respondents were selected by convenience, a strong demographic spread was obtained. For example, the ages of respondents ranged from 21 to 70 with one individual claiming that she did not know her age. Of those, 31 individuals were under 40, while 16 were over 50 and six were in their 40s. In terms of gender, 37 percent of respondents were female, while 63 percent were male. Over half of all respondents had 1-3 children (55.6 percent), while only 14.8 percent had no children, 27.6 percent had 4-6 children, and one male respondent had 9 children. Of all respondents, only eight had ever lived outside of Phoksumdo VDC. Interestingly, exactly 50 percent of surveys were conducted in Nepali and 50 percent were conducted in Tibetan, with all interviews with people with five years or more of education being in Nepali except the survey with the Geshe, which was conducted in Tibetan. The most common respondent was an individual with no formal education who was surveyed in Tibetan (46.3 percent). Finally, 83.3 percent of respondents were married, 11.1 percent were not married, one individual was divorced and two were widowed.

Surveys were conducted in pairs, with one pair consisting of the Nepali translator and my assistant and the other consisting of the Tibetan translator and myself. Once the survey was settled, my assistant and I spent a morning as scribes, copying the questions in English into four separate pocket notebooks, one question or statement per page of each notebook. Afterwards, each member of the team received a notebook, and the two translators were instructed to read through the questions before we met later in the day to discuss them and clarify any possible confusion with meaning and translation. They then copied their translations into

their notebooks. Finally, I made two identical response matrices for each type of question: T/F question, 3-Point Likert Scale questions, and 5-Point Likert Scale questions (See Appendix II).

When conducting surveys, respondents were given a pointer and asked to signal their answer to each question/statement on the matrix. In doing so, as each team member had an identical notebook, my assistant and I could then follow along with the survey as it was being conducted and record responses as they were being made, thereby providing a check that the order of each survey was being maintained as it proceeded. This strategy proved very beneficial in the end as the Nepali translator became less and less professional and attentive as the weeks progressed. My assistant caught him several times skipping questions. Each night my assistant and I would record the survey results from our respective notebooks into a spreadsheet on my netbook computer, which was charged all day with solar panels while locked in the national park office where we stayed.

Survey data was analyzed using descriptive functions including frequencies and crosstabulations in SPSS v.16. The survey was also designed according to the protocols for conducting Cultural Consensus Analyses (CCA), a method in cognitive anthropology derived from a theory of the same name. As Weller (2007:339) states, it is “a collection of analytical techniques and models that can be used to estimate cultural beliefs and the degree to which individuals know or report those beliefs.” On the survey, responses to statements 32-45 and 46-62 were run through the UCINet 6.0 social network analysis program developed by Steve Borgatti, Martin Everett and Lin Freeman and distributed by Analytic Technologies.

## **PART II – STUDY LOCATION**

Complimenting cultivations of a short season’s bare crop of barley, buckwheat, millet, and hard winter wheat along with potatoes and radishes that poke meagerly through poor soils

(Bauer 2004:22), the Dolpo-pa's primary production derives from the ubiquitous herds of yak and *dzoa* that forage the short grasses of the high ranges uplifting toward the Tibetan Plateau. Bauer (2004:26-27) claims that while large ruminants are central to and symbolic of life in Dolpo, "a family's primary economic investment is in goats and sheep, which are used for wool, milk, and meat." Because these local productions in the short growing seasons of a sparsely populated area 90 percent of which lies above 3,500 meters have largely proven inadequate in providing for their annual needs (Lama, Ghimire, and Aumeeruddy-Thomas 2001; Jest 1978:361), however, the Dolpo-pa have also for centuries exploited their pivotal position between the Hindu hills to the south and the Tibetan Plateau to the north as brokers along the grain-for-salt trade to supplement their local productions and increase their successes despite the harshness of their local climes (Fisher 1986:89).

To most inhabitants of Dolpo, which is comprised of four of the highest inhabited valleys on earth in the Nepali province of Dolpa with a subaltern population of around 5,000 (Bauer 2004:1), this pattern of local production supplemented by regional trade describes how subsistence has been ensured for at least a thousand years. Since the midpoint of the 20th century, however, global geopolitical developments have significantly reshaped this intricate order, providing an acute illustration of the pressures brought to bear at the periphery by progress within the framework of the world system. Now, as Bauer (2004:2) indicates through his observer's frame, life expectancy hovers just over 50 years, around 90 percent of people live in "poverty," and literacy and family planning are relatively non-existent.

Ironically, with the defeat by Mao's mighty People's Liberation Army (PLA) of a small Tibetan force at the Battle of Chamdo on October 7, 1950, life as the Dolpo-pa had known it for at least 10 centuries began to change significantly. This is ironic because the Battle of Chamdo,



which pitted the armies of two then-sovereign states one against the other, was fought on the central plains of China's Sichuan Province, many thousands of miles in distance from and hundreds of meters in elevation below the high frontiers of Dolpo. But this bit piece of history provides a superb illustration of how the world in 1950 had already begun to succumb to the compressions of post-WWII times and spaces. Indeed, in 1959, less than a decade after the Chinese invasion of the plateau, the spiritual and political leader of the high kingdom of Tibet, the fourteenth Dalai Lama, fled Lhasa through the Himalayas disguised as a soldier and was granted asylum in India and there established a government in exile in the northern city of Dharamsala. These events commenced a period of steadily rising tensions through the 1960s between the first two of the "third world" nuclear powers, India and China, each with aspirations to drift further core-ward in orientation to that world system.

But these so global tensions at the lower elevations at either side of the great Himalayan divide reverberated up to the periphery of Dolpo, though not at all in the way that that shadow of foreseeable nuclear holocaust draped over the wonder years of the 1960s at the core. No, in Dolpo the concern was far less about nuclear annihilations and shoe-banging protestations than about the trickle down transformations that they were to both endure and counter in response to these global affectations. Indeed, the Dolpo-pa continued to drive their herds through their seasonal patterns of trade and production, engaging in life as it had seemingly always been framed even as the global aggregations of industrially-scaled power were aligning at those lower elevations all around them. And so, as Bauer (2004:107) rightly identifies, "during the second half of the 20th century, the emerging nation-states of Nepal, China, and India changed their frontiers into borders . . . [and] the pastoralists along the Nepal-Tibet border found themselves

living in a dynamic and contested space.” And within the liminality of that contested space change came ever more swiftly to their high-elevation periphery.

The signing in Beijing of the “Boundary Protocol” between the Tibet Autonomous Region (TAR) and Nepal in January of 1963, an example of how negotiated national boundaries are the spatial equivalents to the mythological constructs that are the stories nations tell themselves about themselves in the maintenance of those constructs of themselves that they call their histories, had the most immediate and discernable impact. The Protocol stated that people living on the borders between the two countries could continue to “carry on . . . petty traditional trade on a barter basis” within thirty kilometers of the border, but required that both governments “abolish the existing practice of trans-frontier pasturing.” With the ascendance of the state as the default possessor of all natural capital within the circumscribed area of its new boundaries, therefore, with the stroke of a pen “Nepal and China did away with centuries of customary property and resource-use arrangements that pastoralists across the Himalayas had used to successfully exploit rangeland resources across [their] ecological frontier” (Bauer 2004:82).

By the compression of global times and places, the ripples from that pen stroke were felt almost immediately in Dolpo. With it, their traditional transhumance routes of trade and subsistence into Tibet, where over long winters when little to no pasturage was available locally their *netsang* partners, as dictated by long held custom, looked after their herds in return for “payments” of grain and other necessities unavailable on the plateau (Snellgrove 1981:83), had been ended. With that pen stroke, the relationships of reciprocity they had fostered and formed with these partners over generations and which had provided a kind of insurance against the variability of climate and resource conditions in the high mountains had been ended. Never had

transhumant pastoralists in the Himalayas been in such a compromised situation (Bishop 1990:264, 316; Bauer 2004:133).

As Barry Commoner famously wrote of nature, “everything is connected to everything else,” and with the interconnections of times and spaces that form with the consolidations of high hegemony come a correspondence to this ecological law underlying the dissipative structures of living systems. What these temporal-spatial interconnections meant to the Dolpo-pa was that the closing of the Tibetan border through the machinations of the global reverberated down to the southern boundaries of their trade circuit, too. Indeed, in addition to leaving their herds with their partners on the plateau, the Dolpo-pa would also acquire large quantities of salt that their partners’ had harvested from the famed Tibetan flats, which the Dolpo-pa would then transport down into the Hindu hills at the southern end of their transhumant routes, some of which extended as far as into the fertile northern plains of India, to trade for grains (Childs 2004:36; Bauer 2004:40). This grain from the south was crucial to the trade circuit, as it was the commodity most desired by the Dolpo-pa’s Tibetan partners to the north and which was exchanged for those overwinter pastoral services, thus completing the trade circuit on a seasonal and steady basis over years and years and years. This is how things had always been.

As Fisher (1986:98) explains, however, the price for Tibetan salt increased steadily with the decreased supply that resulted from the closing of the Tibetan border, providing an opportunity for salt traders from southern India, even though theirs was considered a lower quality product, to encroach further and further north into the Nepali hills, thereby lessening the demand for the Tibetan commodity. Improved national transport infrastructure as well as an increased focus on the health needs of the rural poor also increased this decline in demand. For example, supported by international development funding from both the West and China, the

Nepalese government initiated numerous rural development and health programs in the latter decades of the 20th century, including a program that regularly “deliver[ed] helicopter cargoes of subsidized foodstuffs—including packaged, iodized salt” from India – into the remote hills and mountains (Bauer 2004:124). Such internationally funded programs, according to Bishop (1990:310), led to the final and decisive collapse of the commodity circuit, “to the economic detriment of most mountain people,” as a reliable means of subsistence.

Whereas the Dolpo-pa had for at least a millennium thrived within the high frontiers of their mountain climes, eking out difficult but locally adapted livelihoods as intermediaries in those trade networks that once interwove the livelihoods of very different peoples at vastly different altitudes across the region, the collapse of the grain-for-salt circuit with the closing of the Tibetan border in the 1960s and the increasing presence of iodized Indian salt in Nepal as the 20th century drew to its close proved portentous, revealing the underlying reality in the high Himalayas of that Hobbesian insight into lives so lived, observed clearly now as being *poor, nasty, brutish and short*. And that insight, proof bestowed upon itself of the perspicacity of its uncritical but observable image of itself, provided the core with a model against which to construe favorably its own narrative of technological triumph. The Dolpo-pa, in contrast, were now palpably impoverished. Such obvious and dire poverty was, importantly, cognized by those centric sensibilities of the core according to the teleology of their singular models, which also described, in pronounced angles, how things had been naturalized as *should be* as outlined by those consolidations of the Enlightenment program of progress. Development, thereby, became the frame by which the core mobilized to make the Dolpo as they should be in lockstep with that core certitude.

## CHAPTER 3 – THE VITALITY OF ICE & BONE, A THEORY IN METONYMY

### INTRODUCTION: NO WORD FOR CLIMATE

In recent years, an ever-increasing consensus on atmospheric climate change has been built through the scientific process (IPCC 2007). Even though as recently as the early years of the 21st century uncertainties about the nature of such change and its long-term impacts remained quite high, recent studies have both confirmed and further revealed that the risks and realities of these global processes are at least as and probably even more serious than had been predicated only a few decades ago. As chemist Paul Crutzen claimed in his 1995 Nobel Prize acceptance speech, the earth has entered a new geological age, the Anthropocene. In so naming this new age, Crutzen was clearly referring to the impact of human activities on a schematized model of the terrestrial earth as a conceptual aggregate labeled ‘the biosphere’. He was most certainly not, however, referring specifically to the material reality of the Dolpo-pa of the high Himalayas of Western Nepal, who are physically human-animals and who on the whole have almost assuredly never heard of the IPCC or the Nobel Prize or Paul Crutzen or the Anthropocene or—as this study found—even climate change. Each of these ideas—even the “expert” Paul Crutzen—is a metonymical reification, a fictive representation regarded delusively as object-truth by a cultural model that in naturalizing the arbitrary emergence in the material human-surface of the human-animal’s evolutionary selective advantage of conceptual proficiency mystifies the ultimate rootedness of that animal as just one of a multitude of surfaces shifting and cleaving within the thin range of physical force and magnitude scaled to the ecological. As such, by the logic of one tradition’s conceptualization of reason through which truth is assessed circularly by the scientific, rational mind of its own generation, those thus trained to be so “scientific” come to conceptualize as reality such reifications as produced and

subsequently adduced by that circular invention. By this cognitive trick, the physical root of all conceptualization is de-emphasized by a distortion that confirms its own illusion by the arbitrary emergence as a selective advantage in the human-surface of its own capacity to so delude its human-animal self.

Remarkably, however (and seldom ever more than perfunctorily considered, which is in many ways the point), ‘climate’ does not actually exist; it is a conceptualization, a statistical mean that has itself been reified as a material object in the world, which means, in other words, that it is really no more than an idiomatic expression used to represent a conceptual model of a physical reality in place and time that is not that model but that is often taken for it by the circularity generated by that same cognitive trick that lies at the core of the argument in this thesis. As has been widely reported of other cultures with amazement and wonder (and fetishizing exoticism) by observers accordingly deluded by this trick, the Dolpo-pa (unsurprisingly) have no word in their language that translates well as the English term ‘science’. Possibly even less precise is the translation for ‘climate’, the conceptual model of average weather over an uncertainly defined period of time in a specific place, which is, like human distinction in an environment, a concept certainly understandable to the Dolpo-pa but that is just not terribly useful or practical for them to consider in the conduct of everyday life. Such cultural differences in how certain experiences are prized while others are de-emphasized in conceptualization and representation fascinate not because of how they have traditionally been framed by analytical observers from one very specific tradition as *the others’* exotic primitiveness or underdevelopment but because of how they illustrate the implication adumbrated in their very lack of equivalence, which is in many ways the fundamental idea this thesis will discuss.

Although ‘climate change’ has received so much attention, both positive and negative, from numerous sectors of society for two score and more years now, for example, climate, in fact, does not physically change; a reified statistical measure cannot of itself physically change—it does not actually exist materially in the physical world. This is not to say that a schema like ‘climate’ is not useful; it certainly is, for the same reason that schemas in general tend to be useful. It enables individuals and, when shared, cultures to conceptualize the diachronic physical force and material experience of weather through “a simplified representation of the world that allows one to interpret observations, generate novel inferences, and solve problems” (Kempton *et al.* 1996:10) related, in the case of schemas constellated as a model of climate, for example, to the physical force and magnitude of weather events. In so doing, such events are thereby synergistically entangled in material practices and conceptual models that can then be drawn from performatively and transmitted mimetically in extended engagement within an experiential domain of ‘holistic simultaneity’.

Arguably, the arbitrary emergence of the synergy implied here (and to be expatiated more fully below) between the material and the conceptual *is* the selective advantage by which the second-order human-animal (the organism with such an evolutionarily emergent selective advantage) continues to surmount the same physical forces by which the cerebrum of the first-order human-surface (the phenotypic form arbitrarily evolved through entirely physical selective pressures) evolved. This ongoing evolutionary process continues to drive all such conditionally-structured surfaces at dissipative disequilibrium toward that entropic end of all such structures (even, markedly, that phenotypic human-animal) in the cosmos.

## FRAMING THE COGNITIVE ANTHROPOLOGICAL STUDY OF CULTURAL FRAMES

In anthropology, culture is sometimes defined as a process of shared and socially learned/transmitted beliefs, values, and practices. This definition is commonly operationalized in cognitive anthropology through frames or models theory. Frames or models are typically defined as intricate networks of *schemas* that the higher order synaptic functioning of the human cerebrum constellates in making possible in humans-animals among all other animal-surfaces an awareness of awareness in the world. As cognitive psychologist George Mandler (1984:55-56) states: “The schema that is developed as a result of prior experiences with a particular kind of event is not a carbon copy of that event; schemas are abstract representations of environmental regularities. We comprehend events in terms of the schemas they activate.” Strauss and Quinn (1997:6; see also Rumelhart et al. 1986:18) more recently have defined schemas as “networks of strongly connected cognitive elements that represent the generic concepts stored in memory.” They are, in other words, rudimentary components of cognition that enable individuals to establish coherence in the arrangement and management of diachronic stimuli through experience in the world.

Possibly the most intricate of these schematic networks, one common to all humans the world over, is that which draws humans to other humans who have similarly constellated such networks, thereby generating that process of shared, social transmission that is culture. Such cultural transmissions emerge through a synergy of shared experiences and transmitted conceptual proficiencies gained through extended engagement, both personal and social, in surmounting physical forces and magnitudes contended with at the biometabolic scale of ecological processes. Such constellated networks interact with the dynamism of the arrayed surfaces of those physical realities in an ongoing regularity that imprints on subsequent



schematic constellations the recurrence and regularity of the experience of those physical forces and magnitudes, resulting in “humanly created products and learned practices that lead them to develop a set of similar schemas,” a process through which “it makes sense to say they share a culture” (Strauss and Quinn, 1997:7).

As anthropologist Thomas W. McDade (2000:124) argues, however, “new models of culture change are needed that provide a better representation of the proximate person-environment dynamics that define the lived experience of individuals.” Too often in cognitive anthropology, the proximate nature of this “person-environment dynamic” to which McDade refers is de-emphasized in over-accentuation of conceptual elements of cognition and modeling or, even more troubling, the too perfunctorily upheld Cartesian dichotomization of the body and *the environment*, which has only ever been one specific tradition’s cultural model. Regrettably, this model is too often accepted without contestation in investigations into, for example, the somatization of disease (Kirmayer and Sartorius 2007) or other medical anthropological analyses, even those that ostensibly identify and measure the effects of such a distorted perspective (Dressler and Bindon 2000). As Ingold (1992:45) rightfully identifies, however:

According to [this cognitivism], we must first know the world before we can act in it, and knowing consists in the organization of sensations impinging upon the passively receptive human subject into progressively higher-order structures of ‘representations’ . . . All knowledge of the environment has therefore to be reconstructed from these inadequate and fragmentary data, and this is achieved through processing the ‘raw’ sensory input according to cognitive schemata located in the head of the perceiver, not ‘out there’ in the world. Thus whatever patterning, structure or meaning we find in what we perceive is contributed by our own minds.

The point is that the material-physical ground on which such schematic constellations are framed has been too uncritically de-emphasized in representations of lived experience and, as Forsyth (2003:3) suggests, in the way that “social and political framings are woven into both the formulation of scientific explanations of environmental problems and the solutions proposed to reduce them”; in truth, however, this ground is no less than the source of the continued vitality of

the human-animal. The functioning of the physical cerebrum that generates the constellated schemas of conceptual models both frames and is framed by such extended synergistic engagement within the biometabolic scale of ecological processes, transforming continually by those material interactions that conceptual awareness of awareness that is such a defining characteristic of the human-surface cum -animal.

Only through such meta-awareness as is generated by the material functioning of the physical cerebrum evolved of the human-surface are human-animals thus capable of representing the perceptual world of their experiences and interpreting meaning through conceptualizations of those experiences. Significantly, such symbolic representations of perceptual experience as ‘meaning’ or ‘meaningful’ are ultimately grounded in the happenstance of the arbitrary conditions within which and of which the human-surface (including, notably, its vaunted cerebrum) has and continues to physically evolve. Accedence to an understanding that is either idealist or consequentialist beyond the reality of this physicality is in every case no more than teleological, or, as Bourdieu (1977:164) asserted, the product of the “naturalization of its own arbitrariness.” As Strauss and Quinn (1997:18-19, emphases added) in pointing out the inconsistencies on this topic of symbolic anthropologists like Geertz continue: “It takes only a moment of thought to see that meanings cannot literally be found in symbols . . . Meanings of things have to be in people’s minds . . . There is no other place for meanings to be *concretely*, and they have to be *concrete* if they make a difference *in the world*.”

This is not to say that symbolism is not important; indeed, it is crucial, but, as Shore (1991:11) claims, “Symbolic anthropologists . . . should be ready to place culture back in mind, where it has always belonged.” Crucially, however, these claims embody these authors’ own bits of reified illusion. They do not discount completely but certainly de-emphasize the evolutionary

physicality of *the brain* in over-accentuating the emergent conceptual proficiency modeled as *the mind*. Indeed, such grounding in the physical is vital because it restores experience to its primacy as the foundation of any certainty adducible in the physical world, a position that has, as Marx described in the *Critique on Hegel's Doctrine of the State* (1843[1992]), been usurped for at least two-score centuries by the illusory and rather absurd reification of the conceptual as the ground of all being.

The point is that although they are without doubt exceptionally important for the thriving expansiveness of the human-animal over the many climatological and ecological zones through which it dwells around the world, such conceptual representations as mental models and symbols should be understood as being actually only of second-order concern to each human-surface's first-order material experience of existence amid the multitude of other physical surfaces that shift and cleave asymmetrically at the biometabolic scale of ecological processes (Gibson 1979:18). Indeed, only through the physical evolution of the human-surface by those same forces could the human-animal have emerged at all, each individual constellating schemas in the genetic isolation (regardless of culture or copulation) of their being even as by phenotypic similitude those constellations frame related conceptual representations. Importantly, however, as Strauss and Quinn (1997:7) specifically point out, these schemas that emerge and constellate by this arbitrary genetic evolution of cerebral matter are not themselves genetically encoded, though they are, again, always rooted (and often transmitted) through first-order material experience. As Shore (1991:10) states, "meaning construction involves the perpetual encounter of a meaning-seeking subject and a culturally conventionalized object-world."

Too often de-emphasized by cognitive researchers in discussion of such models and meaning constructions, however, as noted with both Strauss & Quinn and Shore above, is this

indisputable first-order primacy of the human-surface as material over the human-animal as second-order conceptually proficient mind; the surface, that is, is a part of even as it dwells apart from that “object-world” regardless of how that world of objects is “culturally conventionalized” in conceptual understandings of that material grounding in the ecological processes of the biometabolic scale. Only through such extended, synergistic awareness of experiential contexts and schematic constellations, possible in the first instance only through the physical evolution of the cerebrum in the human-surface, has the human-animal even been thus enabled to experience such recursive awareness that has by that cognitive trick arbitrarily formalized by one tradition (to be discussed presently) so distorted the framing of that first-order ecological reality. Those mental models or frames of meaning that have emerged as conceptual outcomes of that physical evolution of experience further constellate with each subsequent experience, thereby confirming or contesting or altering those schemas as they continuously emerge and constellate in confronting each diachronically coherent awareness of how such awareness is grounded at all times within the entanglements of surfaces formed and transformed by the ongoing biometabolic flux of those ecological processes. To be sure, such meta-awareness is always experiential (and, in being shared and transmitted, cultural).

Human-animals are, therefore (and foremost), as described in the introduction, on the first order no more than physical-objects within that biometabolic scale of ecological reality. They are conditionally-structured surfaces asymmetrically arrayed within that shifting, cleaving range of physical force and magnitude that array all other surfaces, from viruses to Antarctic ice sheets, through ecological processes. Indeed, they must be so in order to be able to even begin to conceptualize or represent or interpret any meaning at all from those asymmetrically arrayed surfaces that shift and cleave by those same processes of biometabolism of which they too are

consonant, both physically as surfaces and existentially as animals. In the end, that is, regardless of ‘rank or riverbank’, entropy slackens all, no less. Vitaly, however, this asymmetrical array of surfaces should not be labeled, as it far too perfunctorily often is, *the environment*, a term that has come to connote an ineradicable separation of the human-animal from the physical surfaces of its existence both as arrayed *in* context (human/nature) and of itself existing itself as an asymmetrical surface *within* that asymmetrical array of surfaces (mind/matter) (see Bateson 1972).

Such a separation is impossible in any reality but that which is framed through a representational fancy that conceives of the human-animal first as *human being*, a distortion of order that has had and continues to have significant and, counterintuitively through at least one frame of reference, altogether negative consequences. Even though such separation remains fundamental to the model of an increasingly hegemonic (and seldom contested in practice) representation of the world born of a specific schematic constellation of Enlightenment ideals, it has transformed and continues to transform terrestrial metabolisms by the imprint of its own impression, which metaphorically suggests the circularity that sustains its illusion and that is a core focus of the argument of this thesis.

The point being made here is that this distorted conceptual representation has been and continues to be exceptionally detrimental, not only in the theoretical considerations of academia but also ‘on the ground’, which is itself too often treated as a conceptual expression for what in reality is a terrestrial place in time and space where real human-animals (among millions of other *n*-animals) continuously struggle to surmount the influences of this conceptual representation’s ever-more hegemonic distortions. Indeed, this expanding hegemony is in many ways the basic problematic of this thesis, the core of which is that too-perfunctorily drawn upon and distorted

conceptual model of *the environment* that differs vitally from such delegitimized models of other traditions like that identified in Dolpo in the course of this study. As expatiated in Chapter 4, the Dolpo-pa's model of entanglement posits the uncertainty inherent to living asymmetrically within the existential moment of ecological processes. Presently, however, a brief exposition of the singular history by which this distorted framing of *the environment* became so accordant with the circular model of the ever-expanding hegemony of European Enlightenment idealism around the world will provide context and language for the substantive chapters of the thesis.

#### **FRAMING THE ENVIRONMENT AS A DOMAIN OF ENTANGLEMENT**

As anthropologist Tim Ingold (2006:14) has argued, “What we have been accustomed to calling ‘the environment’ might . . . be better envisaged as a domain of entanglement.” The problem in using the noun phrase *the environment* is suggested by Ingold's usage of the term “accustomed,” *the environment*, at this stage of social representation, too perfunctorily connoting how one cultural tradition has come, through its very specific experience of material surfaces in its very specific history, to conceptualize and model the relationship between “human beings” and “the rest of nature.” The phrase *the environment* evokes schemas constellated from the specific assumptions central to the models of that specific tradition, and those of us descended from and inured to that tradition have become far too accustomed to the particular (and peculiar) representations of those models that inform how each of us frames our interactions with the physical world.

The noun phrase *the environment*, in other words, now too unthinkingly accepts without contest as truth one tradition's representation, even though a distinct historical origin of that particular representation, the intellectual movements of Enlightenment Europe, is clearly evident

and adducible. Included in the assumptions founded in that origin, for example, is the Kantian dualism of first and second nature “that crystallized into the backbone of the bourgeois ideology of nature” in the 19th century (Smith 1990:12) and that is grounded in “the Cartesian ontology . . . that divorces the activity of the mind from that of the body in the world” (Ingold 2000:165). Through this Cartesian divide, as Harvey (1990:249) argues, “domination of nature became a necessary condition of human emancipation,” steadfastness toward the goal of which, as illustrated in Descartes’ *Discourse on Method*, eschewed the chaos of nature for the artifice of perfection and the concomitant “need for artifice to overcome the natural obstacles to autonomy” that was nature itself (Merrill 2008:98).

Smith (1990:14) continues, discussing how the scientific methodology generated by that particular tradition of representation “treats nature as external in the sense that scientific method and procedure dictates an absolute abstraction both from the social context of the events and objects under scrutiny and from the social context of the scientific activity itself.” As such, by the logic of reason through which that truth is assessed circularly by the scientific, rational mind of its own generation, those thus trained to be so “scientific” come to conceptualize as commonsense space the absolute space of that tautological invention, “creat[ing],” as Ingold (2006:16) states, “the impression that life goes on upon the outer surface of a world that has already congealed into its final form, rather than in the midst of a world of perpetual flux.” In Western cultural tradition since the Enlightenment, therefore, *the environment* has been tied inextricably to one particular way of representing the world to which those in that tradition have become accustomed to representing the world but that is neither the only legitimate way nor, possibly, the most legitimate way to represent the world<sup>ix</sup>.

*The environment* as it has come to be represented must itself be understood, that is, as an interpretive model, a point noteworthy in itself but also in that it implies that such interpretive models are “largely tacit and unexamined, the models embed[ding] a view of ‘what is’ and ‘what it means’ that seem wholly natural—a matter of course. Alternative views are not even recognized, let alone considered. But more than naturalness, these . . . models grant a seeming necessity to how we ourselves live our lives” (Holland and Quinn 1982:11). As opposed to the assumption often made in subfields like medical anthropology of explanatory models as being explicitly known to informants, as Kirmayer and Sartorius (2007:833) contend, “knowledge is also encoded in various implicit ways [as] in patterns of association that are acquired outside of conscious awareness and that result in dispositions to respond to events in particular ways.” Such models “tend to appear as necessary, even natural,” that is, despite the arbitrariness of their history, which “produces individual and collective practices—more history—in accordance with the schemes generated by history” (Bourdieu 1990:53-54).

Through such schemes of history that generate such schemes of history in the forms of symbolic custom and traditional practice that perpetuate cognitive models in being shared and transmitted by such history, *cultural models* emerge and are perpetuated by extended engagement of individuals in a culture as a part of and apart from a specific, per Ingold, “domain of entanglement.” Such a domain is always at its root innately physical in being scaled biometabolically to the possible forces and magnitudes of ecological processes as evolved in this world (Gibson 1979:15). Kempton (2001:50) implicitly corroborates this notion of ‘extended engagement’ in his contrast of what he terms ‘indigenous’ with ‘state-level’ societies and their comparative depth and frequency of interaction with the natural world, the former being defined in part by their long-term engagement with a specific place.



As such, this idea is consistent with current cognitive anthropological framing of ecological relationships not in terms of classification by humans but, in contrast, in terms of the question: “What mental constructs does a culture use to understand and predict the ways in which species interact with each other and with human perturbations?” (Kempton 2001:59, emphases omitted). Argued here is that this shared and transmitted experience of first-order physical reality within a domain of entanglement, as, for example, the tactics emergent of traders’ practice in traversing with caravans of ware-laden yaks the remote high passes of Dolpo, is the foundation of the schemas from which cognitive and thereby culture models emerge as constellated networks of those schemas. Holland and Quinn (1987:105) suggest this ground, claiming that “cognitive constraints are important forces for the inertia of the cultural model [but] even more important are the constraints that derive from the social nature of the model.”

Intimated in this recognition is that the social nature of the model must always be rooted within such a domain of entanglement that is always itself rooted in ecological processes, which is no less than that thin (relative to the extremes suggested by conceptualizations of the quantum and the cosmic) physical range of forces and magnitudes that are perceptible to phenotypic evolutions at that biometabolic scale. “So different, in fact, are environmental motions from those studied by Isaac Newton,” Gibson (1979:15) avers, “that it is best to think of them as changes of structure rather than changes of position of elementary bodies, changes of form rather than of point locations, or changes in the layout rather than motions in the usual meaning of the term.” Within such a thin range of motions, though the universal laws of motion identified by Enlightenment and deducible at those extremes remain continuous, those laws do not prove terribly useful in describing the physical forces and magnitudes distinctive to that biometabolic scale, which is composed, as Gibson (1979:15) recognized, “mostly . . . of surfaces, not of bodies

in space. And these surfaces often flow or undergo stretching, squeezing, bending, and breaking in ways of enormous mechanical complexity.”

Together, these surfaces array in ecological processes, a totality of entangled continuity in which an “animal is thought of as a highly organized *part* of the physical world but still a part and still an object” (Gibson 1979:8)<sup>x</sup>. These animal-surfaces are remarkable only in second-order reifications of the otherwise arbitrary first-order entanglements of their evolutions, ‘remarkable’, notably, being nothing more than a conceptual elaboration for what are no more than surface movements and emergent cerebral functioning<sup>xi</sup>. This noteworthy point suggests how that biometabolic complexity is rooted squarely in the physical reality of the ecological processes that enable such a response. Indeed, this is a remarkable evolution, but it is only possible through those selective processes of the material through which “every animal is, in some degree at least, a perceiver and a behavior . . . [though] this is not to say that it perceives the world of physics and behaves in the space and time of physics” (Gibson 1979:8).

The point is that such shared models are actually little more than byproducts of that very physical cerebral evolution, the way by which the genetics of the human-surface has responded to evolutionary pressures of ecological processes at that biometabolic scale in emerging as a part of an evolutionary entanglement<sup>xii</sup> conducive to its particular means of adapting well to the asymmetries consonant with being thus a surface arrayed in the physical world. As Ingold (2000:19) writes:

Organic life . . . is active rather than reactive, the creative unfolding of an entire field of relations within which beings emerge and take on the particular forms they do, each in relation to the others. Life, in this view, is not the realization of pre-specified forms but the very process wherein forms are generated and held in place. Every being, as it is caught up in the process and carries it forward, arises as a singular centre of awareness and agency: an enfoldment, at some particular nexus within it, of the generative potential that is life itself.

Again, this is not to argue that schemas or models or cultures are genetic; they are by no means so. What is being argued is that such nested and synergistic cognitive mechanisms are made

possible only by that genetic happenstance of evolutionary pressures that has given rise to such highly complex functioning of the cerebrum of the human-surface. This happenstance enables such conceptual awareness of awareness that is so specific to and consistent in phenotypic human-animals that have endured for upwards of two hundred millennia across the always changing climatological and ecological zones of the world.

Animal-surfaces, that is, including the human, as reasonably durable dissipative structures (Prigogine and Stengers 1984) within an asymmetrically arrayed domain of biometabolic entanglement, are themselves better understood as conditionally-structured surfaces naturally selected by the emergent advantages that suit and shape their specific phenotypes within a specific ecology. This is true regardless of how adroitly an animal-surface occupies a particular position within that thin range of ecological forces relative to those quantum/cosmic extremes. This adroitness provides a significant selective advantage to the human-animal, but is no ‘better’ or ‘more advanced’ (though is possibly more complex) than the selective advantage of any other surface cum animal-surface that has survived genetically in surmounting those same ecological processes in evolving through space-time. Neither is such adroitness teleological, as it is typically construed in the distortion of the first- and second-orders of the material and the conceptual, respectively, the arbitrariness of its emergence only having been naturalized as such through the circularity confirmed of its own emergent capacity for conceptualization. As Ingold (2000:19) argues with due passion:

A properly ecological approach . . . is one that would take, as its point of departure, the whole-organism-in-its-environment. In other words, ‘organism plus environment’ should denote not a compound of two things, but one indivisible totality. That totality is, in effect, a developmental system (cf. Oyama 1985), and an ecology of life—in my terms—is one that would deal with the dynamics of such systems. Now, if this view is accepted—if, that is, we are prepared to treat form as *emergent* within the life-process—then, I contend, we have no need to appeal to a distinct domain of mind, to *creatura* rather than *pleroma*, to account for pattern and meaning in the world. We do not, in other word, have to think of mind or consciousness as a layer of being over and above that of the life of organisms, in order to account for their creative involvement in the world.

Such an honest understanding of the orders of the object-world in human-animal experience as a surface entangled in a specific domain has considerable implications for how what has become, I contend, an uncontested ‘schema of schemas’ is approached and contended with at this stage in the development of cognitive anthropology.

### **REALITY : HOLISTIC SIMULTANEITY :: REIFICATION : LINEAR SEQUENTIALITY**

Schemas of perception, as cognitive anthropologist Stephen Tyler (1978:100) asserts, are “founded in holistic simultaneity” that differs markedly from the symbolic representations of rules, which are “founded in linear sequentiality.” By this distinction, Tyler suggests that such holism becomes practicable only after extended engagement within an entangled domain, which contrasts markedly with how the linearity of symbolic representations necessitates strictly articulated rules that derive from that same singular tradition that reifies a separate and fixed space called *the environment*. Representationally framing *the environment* as a separate space thereby necessitates the continual establishment of such rules in order for such separation to be successfully upheld and traversed, holistic simultaneity being unattainable by the very fragmentation of such a model’s conceptual fragmentation from its root material reality. In other words, through the necessity of framing the circularity, the conceptual becomes ascendant as an oxymoronic ‘concrete abstraction’ in the world, even as its delegation as a first-order phenomenon at the same time de-emphasizes the actual experience of physical objects in the world as peripheral, of only secondary and brute interest. In this way, the primacy of the physical as the root of all representation is mystified merely by the framing of its abeyance as such through the circular confirmation of its own conceptual proficiencies.

The most celebrated example of this mystification is the *cogito*, 'I think, therefore I am'. Descartes's is an interesting cognitive trick even as it remains the foundation of the Western approach to the world. The difference, as Casson (1983:431) emphasizes, is that "schemata, unlike associations, are organic wholes comprised of parts that are oriented to the whole and to other parts," which is a synergistic awareness encompassing both material experience and conceptual proficiency. Schemata embody a holism that becomes more and more fragmented as engagement with the physical root of such reifications becomes less extensively defined as linear sequentiality becomes increasingly ascendant. In thus sundering the material from the conceptual, I am no longer because I am embodied in awareness but only delusionally because I think am I, which physically disembodies and cognitively de-emphasizes that physical foundation of all reality by a trick that belies what possibility actually is in dwelling ecologically.

Tyler continues to develop this compelling intimation, averring that "the structure of knowledge cannot consist of a mere picture of the world or even of a set of concepts which refer to or stand in a one-to-one relation with elements of the external world" (1978:98). Linear sequentiality, however, through such rules of symbolic representation that endeavor to establish just such a one-to-one relation with an external world thus modeled as *the environment*, has had and can only have limited success. Despite Enlightenment schematic constellations that continue to model such reified spaces as fixed, the entangled domains of the material world of perceptual experience always scale to the biometabolic, which is, as Ingold well-recognizes, constantly in flux. The constancy of such flux necessitates a practical logic that "ensures the active presence of past experiences, which, deposited in each organism in the form of schemes of perception, thought and action, tend to guarantee the 'correctness' of practices and their constancy over time, more reliably than all formal rules and explicit norms" (Bourdieu 1990:54).

This is a very different, embodied logic from that of sequential rules and reasons that try but are incapable of keeping pace with the constancy of such flux. Such embodied logic is founded on a holistic simultaneity, as Tyler describes, as it is a logic that does not attempt the impossible in trying to keep pace but remains attuned and enskiled not to living linearly on a conceptual space called *the environment* but to dwelling first and foremost within a biometabolically-scaled domain of ecological entanglement. The conceptual byproducts (e.g. schemas and models and cultures) of such an entanglement provide human-animals through their phenotypic human-surfaces with a selective advantage that is strengthened by looping continually back in extended engagement of such ecological processes. This logic is well-described by Bourdieu (1990:95), whose depiction of its dynamism complements Tyler's adumbration of holistic simultaneity:

produced by the practice of the successive generations, in a particular type of conditions of existence [through which] these schemes of perception, appreciation and action, which are acquired through practice and implemented in the practical state without attaining explicit representation, function as practical operators through which the objective structures of which they are the product tend to be reproduced in practices.

The difficulty is that such fragmentation as is effected by the linear sequentiality of conceptual representation, ascendant as a circular distortion of the first-order even today, often continues relatively uncontested among practitioners and academics alike. This lack of contestation occurs because cultural models such as *the environment* have been too uncritically accepted as legitimate, reflecting in analyses awareness not as cognized by informants but as ascribed by analytical observers who are not holistically coincident with the material bases of the models current to such domains of entanglement as anthropological observers often study. Such coincidence requires extended engagement with such a domain and as radical a defamiliarization (Marcus and Fischer 1986) of observers' own conceptual reifications as possible. Kempton *et al.*'s (1996:15) study on environmental values in American culture, for example, thoughtfully

indicates how “in the United States laypeople create models by mixing parts of the scientists’ models with parts that laypeople construct themselves,” though the authors are themselves American and so are ensconced within such a frame as both natives and observers.

Chernela’s (1987:50) description of Tukano fishing taboos, on the other hand, though it well-presents and defends, as necessary, the Tukano model as legitimately framing in its context how “the river margin belongs to the fish, not to man,” still relies on terminology that frames Tukano practices as, for instance, ‘resource management’, which, argued here, is no less a subjugation to a Cartesian ideology as is those representations that delegitimize such models as irrational straight away. As such, I take Hornborg’s (2001:112; see also Marcus and Fischer 1986) position quite literally: “The ultimate justification for anthropology is not the comprehension of others as an end in itself, but the possibilities of converting experiences of cultural multiplicity into a critical scrutiny of our own Western habits of thought.” So, for example, in concluding that “When authorities denigrate traditional indigenous belief systems, they do so in ignorance of the consequences to the environment,” Chernela certainly expresses an important point, but she undermines that point in her own acquiescence to the vocabulary of the subjugator. Words like *indigenous* and *the environment* make little sense to a people like the Tukano, as like the Dolpo-pa, who do not see such a space as *the environment* through the not so egregiously marked *indigenous* but just their quite apposite ‘knowledge’ as acquired through their awareness in holistic simultaneity of dwelling within their particular domains of entanglement. As Wittgenstein (1921[1971]:115) reflected, “The limits of my language mean the limits of my world.”

Bourdieu (1990:90) states that such representational fragmentation as effected still by anthropological observers “converts a practical succession [domain of entanglement] into a

represented succession [*the environment*], an action oriented in relation to a space objectively constituted as a structure of demands (things ‘to be done’) into a reversible operation performed in a continuous, homogenous space.” In such cases, importantly, a physical space becomes a representation of space that is confirmed by its own circular representation of truth, making it “something other than what it basically is, even though . . . consciousness does reflect the superficial and hypostatized configuration of society” (Taussig 2010:31) that constellates schema as such a fragmented illusion of material separation and perceptual abeyance to the reality of that surface asymmetry. Although observers (see Bourdieu 1990:20-21; Turner 1967:7) have over the past two-score and more years cautioned against and criticized such cognitive bias in observations seeking to describe how cognition functions as an aspect of the *intrapersonal/extrapersonal* mental structures, as Strauss and Quinn (1997:6) characterize it, of schemas as constellated in such models, such bias insinuates itself still most commonly in what Casson (1983:430) calls “iconic representations.” In this phrase, Casson refers to those persistent and perfunctorily accepted representations such as *the environment* that, due to their de-emphasis of the physical, “are simply not rich enough to account for the complexity of human behavior” or the reality of the material asymmetries of human-surface entanglement. Hornborg’s (2001:118-119) discussion (referencing Evernden 1985) of how Western cultural representations are the products of categorized perceptions of even their physical bodies is compelling here:

The Western preoccupation with material forms is an expression of the sovereignty assigned to the sense of sight. Organisms, for instance, are visualized as bounded phenomena, confined within their skins, rather than as overlapping fields . . . The continuous but invisible flows of energy, oxygen, information, and so on that sustain and in fact constitute a human being are not the primary way in which she represents herself to the senses. The isolation of form from process and of part from whole is an aspect of the proclivity to objectify that has been so characteristic of Western thought. It produces an atomistic, reductionist worldview supremely adequate for technical manipulation but hardly for holistic understanding.

The issue here may amount to the fact that such observers often apply, typically unconsciously, an unexamined ‘schema of schemas’ that they draw upon in schematizing not *the*



but *an* other and that contains several centuries of insufficiently explored undertone and nuance in such “iconic representations” as *the environment* that remain in those still-biased analyses still uncontested. As will be argued in this thesis through the experience of the Dolpo-pa, such unrecognized bias in representation is intolerable exactly because, though conceptual and treated as such through the distorted frame of its circular illusion, it has very real and very dire on-the-ground impacts. Such impacts occur at the level of the holistic simultaneity of material practice and perceptual experience, that ecological scale of physical thriving and decay from which such representations always arise and onto which they prove exceptionally consequential within each specific domain of entanglement that fragments, as Tyler suggests, by a linear adducement of the conceptual what is always holistic in the perceptual. This fragmentation occurs even unto the entropic surface decay of physical life-surfaces that human-animals the world over tend to represent through a multitude of cultural models as death.

As Donald Norman (1986:536, emphases added) argues, therefore,

Schemas are flexible configurations, mirroring *the regularities of experience*, providing automatic *completion of missing components*, automatically *generalizing from the past*, but also continually in modification, continually adapting to reflect *the current state of affairs*. Schemas are not fixed, immutable data structures. Schemas are flexible interpretive states that reflect the mixture of past experiences and *present circumstance*.

Because the schema is *in reality the theorist’s interpretation of the system configuration*, and because the system configures itself differently according to the sum of all the numerous influences upon it, each new invocation of a schema may differ from the previous invocations. Thus, the system behaves as if there were prototypical schemas, but where the prototype is constructed anew for each occasion by combining past experiences with biases and activation levels resulting from the current experience and the context in which it occurs.

The emphasized phrases in Norman’s excerpt are meant to underscore how Tyler’s ‘holistic simultaneity’ requires extended material engagement with a specific “domain of entanglement.” Each phrase adumbrates how “the spatial practice of a society secretes that society’s space . . . propound[ing] and presuppos[ing] it, in a dialectical interaction [that] produces it slowly and surely as it masters and appropriates it” through the ongoing recursion of lived experience “as

directly *lived* through [that society's] associated images and symbols, and hence the space[s] of 'inhabitants' and 'users'" (Lefebvre 1991:38,41). Effective holistic simultaneity, that is, requires the sort of synergistic awareness that is obtainable only through extended engagement with the physical that is always the ground of such conceptual proficiency and that always feeds back in contesting, confirming or altering the awareness of the synergy through further experience. Such awareness is inherently relational, "not only constitutive of both the knower and the known . . . but that crucially also acknowledges this fundamental condition [of the material], and thus also the responsibilities that must always adhere to the very act of 'knowing'" (Hornborg 2006:8).

Time, hereby, is differently bound to space than in Harvey's (1990:203) elucidation of the compressions of time-space because time is differently experienced in the synergistic holism of such an awareness. Indeed, by this practical logic, time is the only accumulative measure, but it is less a measurement as understood by a conceptual logic than an enskilment derived of living as a conditionally-structured surface grounded in experience and arrayed within an entangled domain of physical asymmetry. It is a practical mastery of material practice through the perceptual experience of practice that is "gained by moving about in [the entanglement], exploring it, attending to it, ever alert to the signs by which it is revealed. Learning to see, then, is a matter not of acquiring schemata for mentally *constructing* the environment but of acquiring the skills for direct perceptual *engagement* with its constituents" (Ingold 2000:55, emphasis in original).

As such, time is accumulative not in a sense of acquisition but of existential continuity, of physical endurance through manipulations of the phenotypic capacities emergent of evolution in surmounting the pressures of such evolutions. Enskilment, that is, through the schematization of how past experiences of the material have been surmounted enables that holistic conceptual

modeling that increases selective advantage, making overcoming through such synergistic awareness a similar range of circumstances that is to be expected within a specific domain of entanglement after such an extended engagement more and more likely. Indeed, such phenotypic continuity through the capacities rendered of successfully surmounting the pressures of a specific domain of entanglement demands such enskilment as synergized through holistic awareness<sup>xiii</sup>.

This point is significant, as D'Andrade (1995:144) suggests in claiming that “anthropologists and social scientists sometimes ascribe *rules* to the actor when it is only the actor’s *behavior* that is being described . . . [and] there may be in fact no *rules* inside the actor—only networks of certain kinds.” This connectionist conception of networks is approximated in Bourdieu’s (1977:85) notion of *habitus*, the process of

inculcation and appropriation necessary in order for those products of collective history, the objective structures (e.g. of language, economy, etc.) to succeed in reproducing themselves more or less completely, in the form of durable dispositions, in the organisms . . . lastingly subjected to the same conditionings, and hence placed in the same material conditions of existence.

Through such networks, as adduced in connectionist theory, meanings materialize in “mental states but are shaped by the learner’s specific life experiences and are sensitive to activity in a particular material context” (Strauss and Quinn 1997:50; see also D’Andrade 1995:147).

Behavior, that is, regardless of motivation, is always at its root practice within a physical entanglement, when an animal-surface becomes aware of the sentience of the asymmetry of being both a part of and apart from its domain, which is always, from the discolored nail on the big toe to the gray matter of the relatively sizeable human cerebrum, foremost physical. As Holland and Quinn (1982:12) state, “cultural models of self and life organize what are, literally, vital understandings.” Such vitality materializes through experience of asymmetrically arrayed surfaces in space-time over which individuals conceptualize and share similar perceptual

experiences of those biometabolic entanglements, thereby effecting greater likelihood of their phenotypic perpetuation.

Cultural models may be thought of, therefore, as “highly schematized, skeletal representation[s] of some cultural domain, including the elements, structure, associations, and processes within that domain” (Dressler and Bindon 2000:246). Such conceptual representations are socially arrayed and widely diffused in a dynamic, nested complexity of scale that interacts and constellates various other models in conferring the coherence of culture to the logics and practices of the experiences and perceptions through which they have emerged (D’Andrade 1995; Holland and Quinn 1987; Shweder 2003; Strauss and Quinn 1997). Holistically simultaneous, these models are recursively generative, concurrently framing and framed by the concatenations of each successive generation of the aspects, both socially and materially, described by the model within a specific domain of entanglement.

In this way, cultural models can be thought of as the conceptual byproducts of such prolonged (and ongoing) material interactions within a biometabolic domain of ecological entanglement. Thus arrayed, the material continually generates and substantiates the conceptual, bringing, by the framing enabled through such modeled conceptualizations, perceptions in the existential present in line with those material experiences from the past that proved effective in negotiating what similar physical conditions can be expected to be confronted into the future. As such, the cultural model provides the coherence that facilitates this synergistic awareness between material experience and conceptual proficiency within an entangled domain.

This understanding seems to conflict with Strauss and Quinn (1997:7), who arbitrarily limit “what sorts of shared experiences are cultural” in stating that “[they] do not think it is useful to use ‘culture’ to refer to shared experiences of the natural world.” By the holistic

awareness described here, however, experiences of the material no less than the conceptual values and traditional practices of a culture derive on the first order from those ecological conditions that effect those values and practices by the conceptual representations of the material experiences of the biometabolic that constellate schemas as second-order models. As such, Strauss and Quinn's appraisal appears to arise no less from that bias of "iconic representation" in perfunctorily de-emphasizing the material in pursuit of the cognitive elements of the conceptual, a significant distortion that derives, most likely, from an uncontested 'schema of schemas' that is no less grounded in that Enlightenment separation of *the environment* from conceptual representations of mind within a physical world that is thereby frozen somehow in the linear sequence of time.

#### **CONCLUSION: TREKKING ON TO DOLPO**

At least one thousand years of caravanning yaks on trade routes between the Tibetan Plateau and the Middle Hills of Nepal and even down to the Gangian Plains through the unforgiving physical conditions of the high, remote Himalayas have significantly shaped the practices of the Dolpo-pa. In turn, those practices have significantly affected how the Dolpo-pa conceptualize their world, the cultural models by which they frame the experiences that effect those practices being directly and continuously synergized with the ecological processes in the existential present of confirming, contesting or altering their awareness of those experiences. As such, therefore, the model of physical reality that is too uncritically framed by observers descended from those specific histories of the European Enlightenment as the reification of *the environment* is very different in Dolpo.

Indeed, ethnographic data indicate that the Dolpo-pa model the environment more in line with Ingold's "domain of entanglement" than with Enlightenment's bracketing out of human-animals as somehow separate from the uncertainty inherent to living asymmetrically within the existential present of ecological processes. Without a doubt, the Dolpo-pa conceptualize and represent themselves as distinct and unique as humans—a category of existence itself schematized in a uniquely Dolpo-Tibetan way—within that domain, but certainly as no less entangled than any other conditionally-structured surface within it. In reality, therefore, the basis of the Dolpo-pa's cultural model is arguably not that self-referentially distorted anthropocentricity that is the basis of that Enlightenment model that is *the environment*. In contrast, the basis of the Dolpo model is that uncertainty that becomes known in being thus conditionally structured in embodying an evolutionarily emergent awareness of awareness that has become so keenly aware through extended engagement with the asymmetries inherent to dwelling through the entanglements of that Dolpo domain.

As will be discussed in the following chapters, the difference in these representations is significant, not only because it highlights the emergent model of a uniquely self-reflective human-animal culture that has thrived for at least a millennia within that unforgiving Himalayan entanglement at the biometabolic scale of ecological processes (**Chapter 4**), but also because it suggests what is being lost with the increasing contravention of that subjugating Cartesian model of separation into the Dolpo-pa's entangled domain. With this intrusion, manifesting in greater access to products from the technometabolic scale of industrial production of which most Dolpo-pa have little experience or knowledge and in greater deference to the "philanthropic hubris" (Niezen 2003:211) of the graft<sup>xiv</sup> of the International Development industry that is bearing down ever more forcefully from that scale, the Dolpo-pa's increasing acquiescence to the circular

distortions especially of the framing of progress through that model is beginning to disentangle at very basic levels their unique awareness. As discussed in **Chapter 5**, this disentanglement is especially evident in new forms of social fragmentation that have only since around 2005 begun to influence how individuals in Dolpo constellate schemas of intra-entanglement arrangements at and extra-entanglement connotations of the biometabolic scale of their dissipating ecological awareness.

Worryingly, the Dolpo-pa's increasing accentuation and subsequent reification of such new, second-order models, as with contemporary schemas of status and progress, has been concurrent with an increasing decline in the reliability of deep-rooted cultural models of known physical uncertainties within that domain to effectively frame recent experiences with rapidly changing phenological conditions as average weather patterns (climate) have steadily altered in recent years. **Chapter 6** will, therefore, expatiate the inherent and ecologically advantageous limits to the Dolpo-pa's cultural model of their physical entanglement, especially in terms of their inability to conceptualize let alone adequately represent and respond to such ongoing changes in known phenological uncertainties that derive from the power of that technometabolic scale whence such alterations to climates that are producing such changes have originated. This thesis will conclude (**Chapter 7**) with a brief discussion of how continued decline in the efficacy of the Dolpo-pa's cultural model of entanglement is progressively leading to greater *existential dissonance*, a concept introduced here that qualitatively gauges how the disentangling of conceptual proficiencies from experiences with the increased influences of technometabolically-scaled power gives rise to an increased likelihood of loss of life and/or livelihood within a no less ecologically entangled domain.

## CHAPTER 4 – UNIQUE A PART: A MODEL OF ENTANGLEMENT

### INTRODUCTION: COMPREHENDING UNIQUENESS, UNDERSTANDING DISTINCTION

To claim that Ingold's (2006:14) metaphor of a "domain of entanglement" is a more accurate way to describe the Dolpo-pa's model of what the progeny of the Enlightenment frame as *the environment* is not meant to intimate that the Dolpo-pa do not perceive or schematize human distinction among all other physical surfaces within their domain. To be sure, like individuals in any culture the Dolpo-pa do perceive an environment within which they (and other humans) are quite distinct and quite unique from other surfaces. To argue that they do not would distort the reality of the physical by uncritical acquiescence to a conceptual unreality no less illusory than that Enlightenment model of *the environment* is in the inverse; indeed, any claim by an observer that intimates that any culture does not appreciate the uniqueness of the human-animal would have to be contested for the same reason (in the inverse) as established in the previous chapter: Such a claim would too perfunctorily de-emphasize an important and necessary component of cultural modeling, the reality of physical asymmetry in terms of both force and magnitude in the world and through which, with the evolution of the cerebrum, the human among all other animals is synergistically aware in perceiving and conceptually constellating schemas through cognitive models that are shared and transmitted as cultural models in surmounting the pressures of being so asymmetrically arrayed at that biometabolic scale.

Appreciation of the uniqueness of the human-surface for the Dolpo-pa is observed not only in terms of the material/perceptual capacities of the human-animal, therefore, but also in terms of that capacity for representation that is an emergent property of those evolutionarily selective pressures of physical force and magnitude at that scale. This point is illustrated in that for the Dolpo-pa the human is the highest form of karmic birth in the terrestrial realm and the



only one capable of reaching the liberation from all suffering that is nirvana as attested to by the conceptual models of Bon/Buddhist Dharma. Without this understanding from the outset of this discussion, exposition of how the Dolpo-pa model their domain of entanglement could only be as superficial an ascription of a subjugating (romanticization is no less subjugation) observer as is the model that Westernized human-animals have become so accustomed to that claims that they exist somehow separately from *the environment*. And, in many respects, this is the point: The Dolpo-pa do not model themselves as separate from the environment but as distinct and unique in their awareness *within* the environment, karmically superior a physical birth but no less a physical birth and therefore subject to the physical asymmetries of force and magnitude that array across the entangled domain through which they dwell, which is why Ingold's metaphor more accurately describes how they tend to model their own entanglement as part of an environmental domain of perpetual flux.

#### **SYNERGISTIC AWARENESS WITHIN THE DOMAIN OF A HIMALAYAN ENTANGLEMENT**

That the Dolpo-pa culturally model themselves as distinct and unique but no less entangled within the domain of the environment was induced from participant-observations, semi-structured interviews, and structured interviews conducted over 70 days of field research in the fall of 2010 (see Chapter 2). According to survey data (n = 54), apprehension of such entanglement is of course nuanced among respondents, suggesting from the outset how material experience of the physical produces individual deviation from the proposed model even as the strong positive frequencies taken as a whole intimate that the model is indeed culturally shared. For instance, 83.3 percent (mean = 2.78) of survey respondents answered “agree” on a 3-point scale that humans are a part of nature, while 94.4 percent (mean = 2.89) answered “agree” on the

same scale that nature will continue to exist regardless of whether or not humans continue to exist in the world. As a 70-year-old woman in Rigmo stated:

Yes, maybe humans are a part of nature because humans and insects or snakes are quite similar and are part of nature . . . Nature will exist regardless of whether or not humans exist. We all go down to the next village during winter but these trees and rocks, these lands always exist.

Further supporting this induction is the response to the statement, “Humans and nature are mutually dependent on one another,” to which on a 5-point scale 83.4 percent of respondents answered either “agree” or “strongly agree.” Of respondents to that statement, 70.4 percent (mean = 4.52) answered “strongly agree,” while no one answered “strongly disagree.”

Interestingly, however, 57.4 percent of survey respondents also answered “true” to the statement, “Nature cannot exist without humans,” while 81.5 percent also answered that “The primary purpose of nature is for human use” is also true. The final two survey responses are intriguing because they illustrate how, through a frame that “logically” separates humans from *the environment*, such responses can only be construed as being contradictory with the responses that preceded them, adumbrating how (and why) Enlightened Europeans have since the Age of Exploration interpreted cultural groups in places like Dolpo as irrational and primitive and backwards. Through a frame that sees humans as distinct and unique *within* an environment, however, this contradiction fades, nature being logically (and necessarily) for human use but humans being inextricably a part of nature.

A similar resolution to this seeming contradiction was further intimated by the 38-year-old Geshe at Tsova Gompa on the shores of Phoksumdo Lake near the village of Rigmo in his responses to similar questions in our semi-structured interview. To a question about whether nature can exist without humans, for example, he responded:

It is written in our Dharma that nature is for humans to rely on and use. Some say god created nature for humans to use. Bon-po say that Seepa Khrigyal Khugpa created nature to ensure human survival, so if there are no humans then there might be no nature.

Soon after, however, to a question about whether or not the purpose of nature is for human use, he responded:

This is very complicated. We can't say all nature is for human use. For example, birds and insects and yaks are primarily not for us. But we use yaks and our life almost depends on them, so we say those animals are for human use. We take them for granted.

Though seemingly similarly contradictory to the previous survey results, the Geshe's responses, reflecting the naturalness of the synergistic and nested interconnection between the material/perceptual and the conceptual within an asymmetrical domain of entanglement such as Dolpo is, lends support to the claim that the Dolpo-pa model themselves as distinct and unique as *a part of* nature. In truth, as explicated in the first paragraph of this chapter, humans *are* distinct and unique in the conceptual schema of the Bon/Buddhist faith, a schema suggested in the Geshe's first statement, which frames nature as distinct from humans and reflects the karmic frame that humans, for whom other forms of nature are said to be created, are the highest form of terrestrial incarnation. The second statement, however, which is grounded in the material experience of being entangled as but one of a multitude of physical surfaces in a domain of asymmetrical ecological processes, implies the physical reality that underlies that conceptual schema of the Bon/Buddhist model, thereby qualifying the certitude of the frame as implied by the first statement. As such, the second statement acknowledges the physical reality of the human-surface that has been de-emphasized in the conceptual focus on the model of the karmic preeminence of the human-animal in the first statement, thus circumscribing even the conceptual schema of the karmic within the material experience of ecological reality.

Through extended engagement over scores of generations within the ecologically entangled domain of Dolpo, in other words, schemas of material experience and conceptual representation have become synergistically coupled in schematic constellations that, as identified by Bourdieu (among numerous others), have over time been naturalized in their own

arbitrariness. In this way, as the Geshe remarked, awareness of those other animal-surfaces on which life for the human-animal in such an ontic entanglement depends has been ‘taken for granted’. Such seemingly contradictory statements as those made by the Geshe and as those implied by the inconsistent survey responses above support this observation, which itself coheres by a very different (but no less arbitrary) logic than that operationalized through the schemas of the Dolpo-pa’s model of entanglement. According to the Dolpo model, yaks, for example, “over the course of their long, useful lives . . . incarnate variously as means of movement, tillers of soil, providers of sustenance and shelter, and agents of the supramundane” (Bauer 2004:139).

As such, yaks should be understood neither as merely beasts nor as purely symbolic representations but in how they adumbrate through the synergy of their material/perceptual and conceptual embodiments this very coupling. It constellates in schemas related to yaks that compose a small part of the overall model of the domain by which the Dolpo-pa perceive and are aware of reality in dwelling through that physical entanglement, which is always rooted, regardless of frame or schematic constellation, within the first-order ecological asymmetries of surfaces within that entangled domain. In this way, material experience and conceptual representation can thus be said to synergize in constellating schemas of entangling experience within such a domain, the latter functioning to ameliorate by augmenting through the schema of karma the trepidation adduced by the material experience of dwelling through the existential present of such asymmetrically arrayed ecological processes<sup>xv</sup>. Through this model, both the survey results and the Geshe’s responses above cohere, therefore, suggesting not only the importance of the constellation of schemas in producing such coherence but also the first-order ecological foundation of all such second-order conceptualizations, a ground implied

unequivocally by a 63-year-old woman interviewed in her kitchen garden in Rigmo who claimed:

Humans can't exist without nature; nature exists without humans.

Especially since such a model is only an adumbration of reality, a cognitive abstraction, that is, that channels individual thought and action in a certain direction but does not dictate the specifics of those thus channeled thoughts or actions, variance is anticipated in the embodiment and articulation of such a shared model. Unsurprisingly, therefore, the currency of the model in Dolpo of humans being distinct and unique but existing within the environment is supported by the results of two cultural consensus model analyses. Cultural consensus, a statistical methodology developed in cognitive anthropology, can be used, according to Weller (2007:340), “to estimate the culturally correct answers and the cultural knowledge or accuracy of informants,” not creating consensus, importantly, but assessing the degree of agreement that is present among respondents to a set of identical statements suggesting a shared model. In the first analysis, covering statements 32-45 of the structured interview (see Appendix II), which asked respondents about the interconnection between humans and natural physical forces on a 3-point scale, the absence of negative competencies and the large eigenratio (10.149) indicate that a strong consensus exists among respondents. The second analysis, covering questions 46-62 of the survey, asked respondents similarly about the interconnection between humans and natural forces but was more suggestive of the power asymmetries between them on a 5-point scale. Similar to the first, this analysis produced no negative competencies and an even larger eigenratio (11.923), also indicating the existence of a strong consensus. These two analyses support the currency of the model being suggested in this chapter and imply the primacy of the physical even in cognitive constellations of conceptual schema.

## PHYSICAL ASYMMETRIES AT THE BIOMETABOLIC SCALE OF ECOLOGICAL PROCESSES

Indeed, informants in Dolpo are intimately aware of the scalar asymmetries of physical force and magnitude against which they contend daily in dwelling through the uncertainties of the existential present in such an entangled domain; to be sure, their most fundamental schemas, regardless of conceptual convolutions of human distinction and uniqueness as modeled most consciously through the indulgences of karma, reflect the ecological asymmetries of this first-order reality. As Kedar<sup>xvi</sup>, a 42-year-old Nepali who in 1993 founded and remains even now the principle of the Crystal Mountain School in the Tarap Valley (elevation: 4,000 meters), explained in one of the only English interviews conducted during the project:

Well, for me, I don't, um, I don't believe that the human beings are the supreme or we are only the master. There is . . . on the top of the human beings there is nature, the nature has much more power . . . if we go against the nature, then we will cer-, certainly be destroyed, or we cannot exist ourself, going against the nature. So nature is the master for all the creature, all the . . . all of us.

Kedar's statement, coming just a few moments after he had adduced the timidity of the otherwise sinewy snow leopard in explaining how the top of the food chain and the master of all creatures is humans, not only further confirms the model of humans as entangled in the domain of nature but also echoes the commonly held view among informants that the physical forces with which they must daily contend in dwelling through the uncertainty of the entangled domain of Dolpo are more powerful than human-animals. This acknowledgement reveals an important dimension of the model: Though unique karmically and conceptually, humans are quite (relative to much of the ecological domain) small and vulnerable physically, significantly limiting their capacities or 'effectivities' (Cutting 1982) *within* the entanglement despite those conceptual and karmic distinctions.

As with the survey responses and the Geshe's statements above, however, Kedar ostensibly (according to an observer's logic) contradicts himself in his two juxtaposed

explanations, one of human's position in the natural world and the other of their position on "the food chain." Though subtle, this incongruity intriguingly reinforces the analyses of those contradictions above, the former statement here stemming from the existential reality of schematized material experience that acknowledges the asymmetry of humans against the physical forces and magnitudes of nature as they dwell through the entangled domain of Dolpo, the latter obfuscating the physical asymmetry in elevating the conceptual schema that frames the relationship between humans and snow leopards through the abstraction of "the food chain" model. Only after pressed in follow-up questions did Kedar qualify this conceptual frame of "the food chain" model through an ecological lens, conceding that humans, who are sometimes threatened existentially by snow leopards in Dolpo but are more fearful of the predator's ongoing threat to pastoral wealth embodied materially in their herds, are stronger than snow leopards only because humans have guns.

This qualification is remarkable for two reasons: First, firearms are quite uncommon in Dolpo; indeed, the few such arms I saw or heard about were very old and possibly not terribly functional or accurate, even those shared between the dozen or so Nepali soldiers garrisoned in the national park at Phoksumdo Lake. Second and more importantly, Kedar's qualification suggests the crux of the argument being made here. Its framing as an acceptable and uncontested justification for the conceptual model of humans as superior to snow leopards on "the food chain" is traceable to that same cognitive trick that distorts the orders of concern in cognizing the world through a circular frame that unduly highlights the conceptual, thereby de-emphasizing the significance of the material/perceptual in surmounting the physical forces and magnitudes of the existential present at the biometabolic scale of ecological processes. Such a cognitive trick is discernable by a brief tracing of the evolutions and adaptations that were required of the human-

surface cum -animal before such a qualification could be made let alone so perfunctorily accepted as justifiable, especially as it was made within such an entanglement of ontic uncertainty as Dolpo where illusions of separation and security are rather difficult to sustain considering the physical struggles faced daily in dwelling there.

At a root level, the random evolution of the thoroughly physical cerebrum through selective pressures against what evolved as the human-surface over millions of years of phenotypic adaptation in domains of material-physical entanglement first had to occur (and need not have). Only then could such an awareness (as it exists in the material reality of the physical object-world) arbitrarily—the chances of it actually doing so as it has if at all being rather miniscule at all points along the line—emerge from that phenotypic evolution for humans to be able to perceive, design, and finally manufacture such a tool as a firearm, regardless of how rudimentary, or even fashion a less technically intricate tool like a knife or a slingshot, both of which were observed in use in Dolpo. Such awareness was a byproduct of evolution/adaptation of the first order, one beyond that physical root of arbitrarily arrayed surfaces.

Of the second order, therefore, was the enhancement of an interpretive awareness—an awareness of awareness, that is—emergent from ongoing interaction between that phenotypic evolution and that emergent proficiency that could conceptualize how adopting such tools in material practice could level the physical asymmetries of human-animals dwelling through the physical force and magnitude of such a shifting, cleaving array of ecological processes in a place like Dolpo. Over extended engagement within such an entangled domain, this interpretive awareness was honed, through increases in both physical dexterity and ongoing transmissions of constellated schema that reflected such dexterity as proficiency, enabling human-animals for the first time not only to be more physically powerful in the high mountains than the much more



powerful phenotypic evolution of the snow leopard-animal but also to be aware of themselves as such. Only through extended thriving by such ongoing synergism of this meta-awareness, finally, did the naturalization of the conceptual emerge as an enduring cultural model that basically expresses that ‘humans with functioning tools are more powerful in confrontations with predators that are otherwise more powerful than humans’.

By the circular distortion of the cognitive trick that frames Kedar’s response and subsequent qualification, however, in which he uncritically obfuscates the physicality of first-order evolution by a second-order conceptualization that was only made possible by the awareness that emerged (and could only have emerged) in the first place from that first-order evolution of his root phenotypic surface, his reasoning and concurrent de-emphasis of the physical asymmetry almost passes unnoticed as sensible, reasonable. In this instance, which is even more interesting because Kedar is among all respondents in the study the most well-educated within the pedagogical methods and standards of a Western comparative model, this trick played out in his original answer about snow leopards and “the food chain” and in his subsequent qualification of that answer with the response of “guns.” In his responses, therefore, Kedar illustrates how the arbitrary separation of the physical by a cultural model that over-accentuates the conceptual is an illusion that, once scrutinized, can only be upheld by a qualifying allusion to a material production (guns) of the conceptual capacity emergent from that evolution (conceptual/representational proficiency). Significantly, neither the material product of nor the emergent conceptual capacity are that evolution (the cerebrum), which has itself evolved solely from the arbitrary fitness of the root surface that was conditionally structured and thereby naturally (read non-teleologically) selected by the pressures of physical force and magnitude that shift and cleave *all* surfaces within any domain of ecological entanglement.

The majority of my informants in Dolpo (Kedar included, despite the contradiction in this response and his pedagogical training) were found not to so distort the conceptual aspect of that synergistic awareness that is at the root of their model of entanglement. As such, they remain intimately aware of the physical asymmetries of scale against which they continually contend in perceiving and modeling their material existence and experience. Regardless of schemas of distinction or uniqueness, that is, the Dolpo-pa recognize within their synergistic awareness the physical root of reality in the object-world of ecological processes at the scale of biometablism at which they and all other terrestrial surfaces exist; the existential reality is that without (and even with) the capacities of conceptualization emergent through the evolution of the wholly physical cerebrum (the ‘science’ behind which they know not), they, as human-surfaces cum -animals, are quite conditional in the entropic disequilibria of their dissipative structures, succumbing quite swiftly and readily to the not insignificant range of physical forces and magnitudes they contend with in each day at that biometabolic scale of dwelling within the Dolpo ecology.

The statement in response to a similar question about the relationship between humans and nature by Tserap Tenzing Lama, the head lama of the Bon-po Dharma whose ancestral line at Samling Gompa in a remote side valley of Upper Dolpo can be traced back at least 500 years, supports this point:

Nature saves the human. Nature will make humans disappear, not other animals or other enemies of humans. Humans cannot save the nature completely but it is nature that saves us humans. Humans are born by nature. We acquire air, water, food from nature. If we don't get these things human beings don't survive . . . nature is not destroyed by human beings. Human beings are destroyed by nature.

Several informants in the village of Rigmo near Phoksumdo Lake made similar statements:

- ◆ In my point of view, natural forces have greater power [than humans]. [M, 42]
- ◆ Of course nature is more powerful. [M, 30]
- ◆ No, I don't have power over nature. Humans are not more powerful than nature. [F, 62]
- ◆ Nature is so vast that we can't harm it. It is not possible for us to cut every tree and it is not possible to destroy the high mountains. [M, 63]

Similarly, the Geshe from Tsova Gompa near the lake stated:

Nature is more powerful than humans. Maybe this is true because we rely on nature. For example, we can't live without air.

Intriguingly, Tserap at Samling Gompa, whose life as a high lama is focused on ritual and conceptual representation throughout the day and well into the chill of the night at ~4,200 meters (as we heard in the darkness of our tents pitched beside the gompa), punctuates this point in a story he told that indicates his awareness of the ecological ground of even the schema of Bon/Buddhist deities when asked whether they are humans who have reached the nirvanic state of enlightenment or actually gods:

Gods are only the belief of the Heart. I'll tell the story about what god is: There used to live one mother and one son in a Mustang village. They have only a cow as their property. The son used to visit Bodhgaya [where Buddha became enlightened], India every year and return back . . . While he was leaving for India one day, the mother tells her son to bring some relic of Lord Buddha from India. The son says ok and leaves. When he returns home he forgets to bring the relic. The son says, 'I forgot mother'. The next year when he was again going to India, his mother makes a promise that if he doesn't bring any relic this time you won't see my face again. I'll die. But returning home he again forgets. Near his home, he remembers and thinking 'what to do, what to do', he sees a dead dog on the road and takes out the dog's tooth and goes home. He then gives the tooth to his mother saying, "This is the tooth of Lord Buddha." The mother becomes very, very happy and she puts it in the family shrine and worships the tooth with cow's milk every morning and evening. So it's the belief of the heart. What we believe is a god is god. It's controlled by our own hearts . . . She put that tooth in the shrine and worshiped every morning and evening. When she died the tooth emitted a rainbow. . . the son and other villagers also saw the rainbow from the tooth. Her heart believed that the tooth was god, so, at last, that same dog's tooth became that of god. People roam outside the heart in search of Buddha, but their . . . own heart is a Buddha.

Tserap's story is intriguing exactly because of its confirmation of the ecological root of conceptual/representational belief, even more compellingly so because it was told without dissemblance by such a high lama.

Responses to structured interview statements positing the preeminence of ecological processes further support the awareness of such asymmetry among the Dolpo-pa. To the statement, for example, "Nature is more powerful than humans," 83.3 percent of respondents (mean = 2.78) on a 3-point scale answered "agree," while 11.1 percent did not know and only 3 respondents answered "disagree." On the same scale, to the statement, "Nature is more resilient than humans," 75.9 percent (mean = 2.76) of respondents answered "agree," while 24.1 percent

claimed they did not know; no one disagreed with this statement. Interestingly, a trend of decreasing concurrence becomes evident when survey statements become less conceptual and more empirically grounded, such as with the statement, “Nature is too vast for humans to be able to harm it,” which results in, on a 5-point scale, 57.4 percent of respondents (mean = 3.81) answering “strongly agree” and 7.4 percent of respondents answering “agree,” with 16.7 percent and 7.4 percent, respectively, answering “strongly disagree” and “disagree.” Only 11.1 percent of respondents answered that they did not know.

Unexpectedly, inversion of the organization of structured interview statements, positing “human practice” as opposed to “natural force” as active subject, affirms this trend of decreasing concurrence, an outcome that at first appears to contradict but actually illustrates one of the primary arguments being made here. The statement, “Humans can destroy nature,” for example, though agreement remained dominant, saw significantly more respondents “disagree” on a 3-point scale than any of the previous statements, with frequencies of 22.2 percent disagreeing and 59.3 percent agreeing (mean = 2.37; 18 percent did not know). This trend suggests that as each statement drifts further from conceptual schemas (the first two statements) and becomes more grounded in physical schemas of the material experience of individual Dolpo-pa (the latter two statement, in order), the influence of those first-order schemas through which each subject has more unique practical as opposed to conceptual experiences begins to emerge. The reasonable next progression of this trend, as expected, arises with the statement, “Humans are too small and insignificant to be able to harm nature,” which resulted in, on a 3-point scale, the absence of a majority and near equivalence of opinions, with 48.1 percent (mean = 1.98) of respondents answering “disagree” and 46.3 percent answering “agree.” The remaining 5.6 percent responded that they did not know.

## THE PERILS OF BEING A SURFACE

Despite this trend, “nature” and “humans” remain, even when humans are framed as active agents in the survey statements, far from the ecological reality of material experience as both are still quite conceptual in their abstractions. “Nature” is a wholly conceptual aggregation that can be, as adduced by different schemas and indeed cultural models of what constitutes nature, inclusive or exclusive. “Humans,” on the other hand, does not account for the differential nature of individual response within the no less conceptual aggregation that is schematized as the distinct human-animal. Neither “nature” nor “humans,” which are modeled aggregates no less than “science” or “climate,” that is, actually exist as objects in the world. Such conceptual schemas, though not foreign to are only of second-order concern to a cultural model rooted in material experience, which is oriented foremost to first-order ecological concerns. Such schemas are, that is, immediate and urgent only in terms of the existential present, which is their selective advantage within “the imminent future of the world, postulating the continuity of time . . . [and] thereby exclud[ing] the supremely real and quite theoretical possibility of sudden reduction to the present” of no longer being able to conceptualize because you no longer are physically existent (Bourdieu 1990:82). On the other hand, specific hazards contended with within an entangled ecological domain are of the first-order and primary to such experience within Dolpo. Survey frequencies pertaining to such awareness of the asymmetrical forces and magnitudes of such hazards within the physical array of the existential present are quite revealing to this effect, especially in how nuance intimates the material experiences that underlie how uncertainty is framed practically through such an entanglement.

According to structured interview responses, for example, landslides are the most feared hazard encountered by Dolpo-pa informants, with 98.1 percent (mean = 4.98) of respondents

answering “strongly agree” on a 5-point scale to the statement, “If caught in a landslide, I would be lucky to survive.” The only different response to this statement was a single “agree,” making this hazard the only of all considered that was responded to unequivocally. This result is noteworthy because it reflects the constancy of the threat of landslides in material experience within the Dolpo-pa’s domain of ecological entanglement, which has few services or public projects to forestall or mitigate the uncertainty and high chance of this hazard’s occurrence. Indeed, the physical threat of landslides intimates the first-order preeminence of the physical to the existential present of human-surface life and -animal livelihood in dwelling through this shifting, cleaving array of uncertain surfaces.

Nyma, the 25-year-old *dzoa* wrangler and trader who guided us through the barrenness of Upper Dolpo, illustrated this point in the daily regularity of his actions in forefending against such known uncertainties, especially at the end of a long day of trekking when, regardless of the exertions or tribulations faced in that day, he would first scan the surrounding slopes for signs of instability before we set up camp. I only noticed Nyma engaged in this practice in the second week of our journey, observing him for several days before querying him about it. In response, he paused for a moment and smiled widely as if to express my senselessness before thoughtfully responding in fits and starts that suggested he’d never thought about this practice in such a way as to articulate it to anyone before that it was just something he did, something his grandfather who taught him to wrangle yaks and *dzoa* did, something the Dolpo-pa have learned to do because, as he suggested, when a landslide will happen is impossible to know but there are signs to look for and read in the landscape. Such a practice could easily (and did) escape an observer like myself, which assumes unreasonably that even if it had not I, not having lived so long in such a place by such experiences or such models of such experiences as Nyma and other Dolpo-

pa traders, would have been able to read such signs. In terms of synergistic awareness, in other words, I was trekking rather existentially blind.

Similarly, but for a question posed in the negative, 96.3 percent (mean = 1.06) of respondents on a 3-point scale “disagreed” that “There is much I can do to stop a blizzard from forming when I am crossing a pass.” Again, such a scenario is recounted with trepidation by Dolpo-pa informants, who are inclined, as observed on a particular day in Rigmo in mid-October, to abandon plans for travel or trade that takes them over the high passes between valleys if their schemas of weather expectations, which are themselves rooted in physical aspects of place and time and season, do not conform to current realities of physical conditions that make the journey seem unwise. This point is indicated with Magli Budha, a 21-year-old from Rigmo who had recently completed her nursing degree in Kathmandu and had not visited her family in Dolpo in four years:

If I, I . . . if I have to pass, uh, cross the pass, then maybe we’ll get . . . it’s, nobody knows what will happen, what the weather does, you know? So maybe snow, heavy snowfall [will come unexpectedly].

Only one respondent disagreed with this statement about blizzards, possibly misunderstanding the question or possibly (and more suggestively, though unconfirmed) responding in terms of that synergistic awareness that would suggest that one practical strategy (“something I can do”) in such a circumstance as described by the statement would be to respect the asymmetry and forego the journey on that day. Postponing a journey is of course always a reasonable option in apprehension of a physical reality that bests even a culturally modeled frame of auspiciousness such as is determined by the lamas’ calendar, which two-thirds of survey respondents frame as controlling weather changes through each season. Regardless of the reason for this single disagreement, however, respondents’ trepidations of the physical realities that underlie their conceptual representations are reflected in the high disagreement with this statement.

Interestingly, the statement, “I can do little to stop an earthquake from destroying my house,” scored exactly the same (appropriately inversed) as the statement concerning blizzards, which suggests an interesting equivalence due to the nature of a hazard: Although earthquakes do not entail as great an urgency in the day to day experience of Dolpo, they do entail a far greater uncertainty and destructive force, striking without warning to terrible effect that does have immediate and inescapable consequences.

Several additional statements from the structured interview further intimate the first order concern of physical asymmetry, especially in several questions focusing on livelihood, which within the entangled domain of Dolpo can only be separated from existential concerns through undue caviling by an observer. Statements such as, “I worry that a predator like a snow leopard will kill my herds” or “I do not worry about natural disasters like avalanches killing my animals,” for example, inquire to the very core of agro-pastoral existence and anxiety over that existence. This observation is especially true for herder-traders whose yaks and *dzoa*, because of how the geological forces of continental drift in the formation of the Himalayas some ~40-50 m.y.a. (USGS 1999) formed steep slopes and narrow cultivable valleys, in many places range freely in *patans* (grasslands) at least several hours but often even further from settlements and are relied on more as sumpters than for secondary production. To such livelihood statements, therefore, agreement (or disagreement, as appropriate) was high, as expected. For the statement on predators, for example, 92.6 percent (mean = 4.87) and 5.6 percent of respondents, respectively, answered “strongly agree” or “agree” on a 5-point scale, while only one respondent disagreed strongly, that person having also answered that he does not own any animals. For the statement on natural disasters (a negative query, note), 87 percent (mean = 1.28) of respondents answered “strongly disagree” and 7.4 percent answered “disagree.” Similarly, the statement,



“There is little I can do to stop hail from destroying my crops,” possibly, as commented above concerning earthquakes, because hail is so unusual and unpredictable and crops are so immovable and easily damaged, also resulted in high agreement, with 88.9 percent (mean = 4.78) of respondents answering “strongly agree” and 7.4 percent answering “agree.” Only one respondent answered “strongly disagree” to this statement, though no explanation was given as to what she could do in this circumstance.

Similarly, based on the anecdote that the 63-year-old lama interviewed at Shey Gompa related about how he had lost 10 of his 11 yaks in an avalanche the previous year, the statement, “I cannot do anything to prevent an avalanche from wiping out my entire herd,” also had high agreement on a 3-point scale, with 88.9 percent (mean = 2.81) of respondents answering “agree” and only 7.4 percent answering “disagree.” Answering that they did not know were only two respondents. As above, the four respondents who disagreed with this statement may have responded through a practical model that suggests that they can competently ‘read’ the landscape as Nyma did with landslides, thereby forefending against such losses. In the same way, on a 5-point scale the statement, “I am powerless to do anything to stop the river from washing away the bridge I use regularly,” also had strong agreement (90.7 percent “strongly agree”, mean = 4.72), with one respondent answering “agree” and the other four respondents split evenly between “disagree” and “strongly disagree.” That these statements imply some sort of agency in mitigating either uncertainty or the outcome of the queried hazard is telling, reflecting how such practical awareness is modeled.

The point is that the framing of such proficiency is immutably scaled to an awareness of the limits of being embodied within the dissipative, conditionally-structured surface of the human-animal, extended experience of being arrayed so asymmetrically within ecological

processes making “every being,” as Ingold (2000:19) avers, “as it is caught up in the process [of evolutionary entanglement] and carries it forward . . . a singular centre of awareness and agency: an enfoldment, at some particular nexus within [the process], of the generative potential that is life itself.” As such, statements intimating awareness of such scalar disparity within such an entangled domain would be expected to yield high agreement within the model, as with the statement, “A swollen river is more dangerous to me than I am to it,” which resulted on a 5-point scale to responses ranging from “strongly agree” to “strongly disagree,” strongly skewed to the former (79.6 percent). The remaining responses were spread rather evenly across the range, from “agree” (5.6 percent) to “neither agree nor disagree” (5.6 percent) to “disagree” and “strongly disagree” (3.7 percent and 5.6 percent, respectively). The fact is that the river is more dangerous than any individual is to it, but with such awareness as derived from the synergy of material experience as well as the proficiency derived from previous and conceptualized of similar experiences through the shared schematic constellations of culture, the river is not necessarily dangerous at all. Indeed, the river like the mountain in the blizzard does not have to be crossed but can be waited out or otherwise circumvented based on such synergistically acquired awareness.

#### **THE HUMAN POWER OF SYNERGISTIC AWARENESS WITHIN AN ENTANGLED DOMAIN**

At the same time, however, my Dolpo-pa informants do not model themselves as powerless within that entanglement, far from it really, their power deriving exactly from that emergent synergistic awareness acquired in dwelling through that ecological domain. Evidence of such awareness is arrayed not only in the built environments that fleck with the physical indicators of such awareness the landscape—the valley settlements of stone houses and faded

chortens and scrupulous plots, the improved trails of wood and stone that hang precariously over precipices and lakes of turquoise blue, the cairns and prayer flags that crest every soaring pass. It is also in the very material experiences of practice that assemble and shape those indicators and in the proficiency acquired through those models that are shared and transmitted in that awareness within that domain. Arguably, then, the power of the human-animal can be said to largely emerge in the synergy between material experience and conceptual proficiency in engaging with practice, an awareness acquired both through physical experience as well as, as Dressler and Bindon (2000) have theorized, through continued consonance with culturally constellated schematic arrays.

This synergy was intimated by Gotza, a retired schoolmaster and community leader in the hamlet of Namdo a few hours south of the trading hub of Saldang in Upper Dolpo, who claimed:

Different people have their different opinion [about what knowledge is]. In my view, knowledge is strong power. This strong power [is the] thread of knowledge. [People who do not go to school] also need some knowledge traditionally to properly cultivate and herd cattle. They get knowledge from their family or ancestry. He himself has not acquired it automatically. In agriculture, also, he needs to know how much water is needed for plants in which season, which plant are to be cultivated, how much fertilizer is needed. This knowledge is not all gained by him. He gets this knowledge from his ancestral traditional knowledge . . . Specifically [in Dolpo], this knowledge is for herding cattle . . . agriculture, rituals, conservation practices for both wildlife and nature . . . in transportation through yaks to China for trade.

Luhuk, a 31-year-old woman who runs a seasonal tea house on a slope above Phoksumdo Lake, reiterated the gist of Gotza's point, referring similarly to how the knowledge of practice is obtained through the synergism of both material experience with such practice and the transmission of the proficiencies to engage in such practice through conceptual models of such practical experiences, which are, importantly, both physical and cognitive:

Knowledge means wisdom . . . [acquired] in seeing the work done by others, by the oldest people. I have knowledge of doing a little bit of working, trading, making bags. In the past I used to do farming . . . one third of our life is related to the rituals and that depends upon the tradition that our ancestors gave and that we follow.

Through such synergistic awareness, therefore, knowledge can be reasonably articulated as "The skills that help a person to survive in the world," a survey statement that 98.1 percent of

respondents said is true. As such, knowledge truly can be conceptualized as power (knowledge *is* power, in truth), the evolutionary advantage that renders human-animals synergistically aware in thriving after extended engagement within their particular domains of entanglement. The 62-year-old woman interviewed in her kitchen garden in Rigmo explained a little about the process through which such awareness is shared, suggesting the synergy of the material/perceptual and the conceptual in the transmission of the constellated schemas through which cultural models are passed both intra- and inter-generationally:

I have been working on the farm since my childhood. Firstly, I used to help my parents in every small task and then when I was in the stage of teenager, I learnt everything like when to plant seeds, when to harvest, etc., which eventually made me skilled in such things.

A 25-year-old farmer and herder, interviewed on the rooftop of the house that had been passed to him by his mother and that has been in her family line for generations, similarly indicated this synergism in the telling of how he became skilled as a yak wrangler:

T: I learned this knowledge from my grandfather, my mother's father. I started when I was nine years old, following my grandfather in trading. After seven years of practice running a caravan of yak with my grandfather, I did it by myself for two years and it was very difficult to handle the yaks for me.

G: How many yaks did you have at that time?

T: Three. And it was very difficult.

A 25-year-old new mother who runs a seasonal tea tent near Rigmo stated that her own practical awareness lies in making blankets and working the fields but not in doing much else, though, interestingly, as Gotza stated above in claiming rituals as a part of traditional knowledge in Dolpo, she did claim that the knowledge of the lamas in performing rituals is not merely conceptual but is also a type of practical awareness that is no less grounded in material experience of physical reality than are those previous examples of power.

Such a framing of the representational spaces of ritual as a practical awareness as suggested separately by both the new mother and Gotza, among other informants, is seldom ever drawn attention to in academic or development discussions of traditional knowledge, which tend

to focus on practical skills as conceptualized through models of observers who are grounded in *the cogito* and whose predominant schemas model humans as separate from *the environment* in distorting the physical root of the conceptual. Through such a frame, practical awareness in Dolpo is seen only in such skills as farming, herding, handicraft work, etc. As such, observers tend to dismiss, usually as mere superstition or performance, the no less practically framed knowledge of ritual and representational belief, even though the Dolpo-pa (and, I suspect, many people like them who similarly model humans as being distinct *within* the environment) frame such awareness no less synergistically as any other. Through such a frame, lamas are schematized as being able to control by their conceptual/representational proficiencies such physical forces as the weather through ritual practice in the same way that farmers in Dolpo are able to cultivate their plots by their awareness of the synergy between, for instance, their plows (material experience) and the transmitted and shared schematic constellations that indicate how to make and when to use them (conceptual proficiency) to sow their meager barley and potato crop.

Indeed, 78 percent of survey respondents agreed that “Great lamas can control local weather events,” including 89 percent of respondents with no formal education and 80 percent of respondents with eight years or less of education. Interestingly, the Geshe, the most highly educated survey respondent with 17 years of formal education, also agreed with this statement, notably reflecting how he frames his world predominantly through his Bon-po training and faith. On a 5-point scale, of the 30 respondents with no formal education, only three answered that they “disagree” or “strongly disagree” that their beliefs affect the amount of snow that falls in the mountains each year. Of those who believe that great lamas can control local weather events (n = 42), 30 either “strongly agree” or “agree” that their beliefs affect the amount of snow that falls in

the mountains, while the percentage of respondents who were unsure (14 percent) was the same as the total number of respondents who answered “disagree” (3 percent) or “strongly disagree” (11 percent) with this statement. The correlation of education levels to consonance with such models is significant here because of the role of formal education in altering how the world is framed by individuals, a point that will be discussed further in chapter 5.

Here, this idea need only be adumbrated in affirming how several informants similarly described the conceptual power of lamas as having very practical material/perceptual effects over forces such as weather. The Geshe, for instance, commented that:

Great lamas can control weather events. For example, lamas can bring rain when there is need of rain during the growing season. Local weather events fluctuate if spirits are not happy, so lamas do rituals and speak the mantras to make the spirits feel good and happy.

The older lama at Shey Gompa in Upper Dolpo commented similarly, particularly differentiating between the power of lamas and that of normal people:

Normal people can't affect the weather but very great lamas stop rain and snowfall but the bigger lamas can stop it by their mantras.

The anecdote recounted by Tserap at Samling Gompa illustrates this schema:

Yes, last summer there was no water up here. You see the hill up there, we worshiped god there for the rain . . . and it started to rain and it rained continuously for some days and there is relation between God and precipitation.

As Gotza from Namdo stated:

Rituals are important for overcoming every sort of problem, every sort of trouble. I will give you three examples. First, when I am sick there are rituals, and it's essential that some rituals are accompanied by *amchi* [traditional doctor] medicine. The second example is that if I am travelling to new places or if I am starting a long journey, there are essential rituals to overcome any problem on the way. The third example is that if I have loss in every year, if I am loosing my yaks, losing crops, I have to do rituals to control that lose, to conserve those things.

The practicality of this synergy of material experience and conceptual proficiency in effecting meteorological realities is perhaps best illustrated, however, in the explanation from the 51-year-old lodge owner in Rigmo who mentioned in our conversation that if the villagers do not take care of and keep clean the water taps recently installed around the village as a public

improvement by the provincial government, then the gods of the mountain will be annoyed and will not protect from landslides or other hazards the hoses of the water system that run from the glacier-fed *mull* (spring) in one of the mountains (~4,500 meters) to the west of the village<sup>xvii</sup>. He said that the villagers are careful not to urinate or defecate near the taps and menstruating women are forbidden to use them. If, however, a landslide does occur (which happens sometimes, he said, even if no one is known to have despoiled the taps) and disrupts the flow of water, then several men from the village including the lamas from the local Bon gumpa will climb up to the *mull* to repair the damaged works and perform rituals. Both of these are framed as practical actions that are schematized as complementary and necessary to resolve the problem.

Intriguingly, the lodge owner also said that the villagers will only make the climb to repair the works if the water stops from late spring to mid-autumn because otherwise, although he made no mention of the apparently diminished vitality of the protector gods in other seasons, the *mull* is frozen and no water is available to the villagers from it. Indeed, the village of Rigmo is abandoned in these seasons, the residents all migrating down to overwinter near the provincial capital of Dunai, the wealthier in homes they own in town and the poorer in rudimentary structures traditionally belonging to the villagers an hour or so away.

Not only are great lamas modeled as having the power to control physical events, however, but they are also schematized as having power to affect the physical circumstances of rebirth through the karmic round of conceptual time. Tserap Lama of Samling Gumpa strongly suggests this point in his explanation of the *Tulku*, a schema of Bon-po belief that synergistically interconnects the material/perceptual and conceptual aspects of the cultural model of karma, introducing a dynamic of agency that overcomes through conceptual representation the physical asymmetries of entanglement in the Dolpo-pa's domain. Showing me in example the tooth of a

great lama from Tibet who he said lived 750 years ago, Tserap avowed that in worshipping the tooth the great lama peers down from heaven and ameliorates any troubles or difficulties the worshipper is having in this life. If, however, problems in this life are too great, then, because those problems, according to the model of karma, will be even greater in the next incarnation,

in your next birth the great lama is born along with [the worshipper] as a *Tulku*. [They] grow up together and become friends, and he shares his knowledge with [the worshipper] to ensure a better [subsequent] birth.

Importantly, as Tserap stressed, within that same schematic constellation of karma, any physical form—including humans—can be incarnated in the next life as any physical form possible within the domain, from a human to a rock to an insect to a cloud, though, as noted previously, humans are the highest incarnation because of their capacity to be aware of and intentional in their awareness. Conceptualizations of karma, in other words, accumulate in the material experiences of practice within the physical world. As Tserap commented quite logically to my question about what determines future birth:

It depends upon your practices in the present.

## **SIN AND THE SIN OF SINNING**

Despite such limitations as the physical asymmetries of entanglement pose, therefore, the synergy between the material/perceptual and the conceptual should be understood as not merely a means of surmounting the uncertainties of ecological forces and magnitudes within the entangled domain but also as a means of forefending against the uncertainties of the karmic implications of engaging in practice within such a domain. In other words, not only are human-surfaces asymmetrically insignificant in comparison with forces and magnitudes arrayed in such ecological uncertainty, but they also themselves embody significant force and magnitude relative to lesser surfaces such as insects and physically slighter creatures that are likewise entangled



within that domain. Being karmically distinct and unique, consequently, humans are responsible for the physical welfare of all such lesser creatures because they are modeled as being entangled with them<sup>xviii</sup>, both experientially and karmically (the difference being more analytical than actual), a schema that is well-understood by respondents, who unequivocally answered “true” to the statement, “It is a sin to kill wildlife.” Furthermore, 94.4 percent (mean = 2.91) claimed that they “agree” on a 3-point scale that cutting down even one tree is a sin, while 98.1 percent (mean = 2.98) of respondents answered affirmatively on the same scale that their faith prohibits them from intentionally harming nature. Of note is that the sole divergent response to that final statement did not disagree but answered with the middle value, that they did not know or were not sure.

Semi-structured interview responses further support this schema. Tenzing sitting cross-legged in his empty stock pen, for instance, responded briskly to the question of whether plowing his plots is a sin:

Of course! Plowing land is a sin. It’s killing so many lives. Yes, cutting trees is a sin and harvesting grass is also . . . it is true that mountains don’t have life but some spirits exist there. Spirits can’t be killed but when we disturb them they may try to harm us.

Concurring with this opinion is Gotza, the retired schoolmaster and community leader in the hamlet of Namdo near Saldang in Upper Dolpo, who said:

In our tradition we say that cutting trees is a sin. We say one green plant has life, too. To kill any wildlife is a big sin for us, and we’ll go to hell when we kill wildlife.

In addition, the 70-year-old woman in Rigmo said:

Cutting trees is a sin because it’s like killing life as the tree gets dried up . . . [It] is true that plowing plots is also a sin because then we are killing a number of insects.

The Geshe adamantly referenced the model underlying these contentions in his own response:

Of course [killing wildlife] is a sin because we are Buddhist. According to our beliefs and the Dharma, there are ten big sins, and the biggest one is to kill the life of animals. Killing wildlife is obviously a sin but when we say bad things about others, that’s also considered a sin.

Sin, in this way, is framed as a transgression of material schemas against conceptual schemas within a reality that extends well-beyond the material and into the representational, looping seamlessly in a continuity that propagates concatenations of that synergism between the material/perceptual and the conceptual as synergistically arrayed in each existential present of the entangled domain. It is, in other words, a transgression within a karmic ontology in which, as Tserap avowed, each conditionally-structured human-surface can be reborn as any other surface that has formed or evolved (physical root processes both) within the thin range of that biometabolic scale of ecological processes. As such, the karmic essentially provides a frame for self-reflection of the schema of “no self” that is the conceptual basis of Buddhist/Bon epistemology, as the material/perceptual self can literally be (or have been, or will be) through the innumerable rebirths of the schematic constellation of the karmic turn any surface, enduringly coupling, thereby, the epistemological schema to the ontological in confirmation of the synergistic dynamism of the model. In such a way, the power asymmetry of the human-surface cum -animal to lesser creatures becomes no less synergistic as a physical reality as it is a conceptual reality. This suggests that sin is representative within the karmic ontology of human-animal asymmetry against a schema of nested power in the entangled domain as it is modeled thus synergistically, both intera- and extra-personally (Strauss and Quinn 1997:6).

#### **LIMITS AND NESTED POWER**

Practice within such a domain of entanglement is, however, subject to the limits defined for schema by ecological force and magnitude as they have themselves been schematized by how the affordances of the biometabolic have been conceptualized and modeled, again through that synergy of extended engagement with material experience and conceptual proficiency. This

includes, as has been discussed, karmic representation as an expanded practical engagement. Statements like the following, for example, made by several informants in response to questions about personal experience and belief, are representative of how influential material experience is in altering conceptual models of one's entangled domain:

- ♦ I don't believe this is possible because I have never seen anything like it before (49, M).
- ♦ If I see the real object or action then I believe (51, M).

Gotza from Namdo, a devout Buddhist practitioner who believes in the practical power of ritual, openly differentiated, for example, between those circumstances that ritual can effectively manipulate and those in which ritual is powerless, claiming:

Humans cannot control natural disasters; it's a natural phenomenon. The disaster is due to nature not by any other reason. If it is done by other medium, like if someone causes the fall of hail . . . if it is so due to other medium, then lamas can control it. If it's due to nature no one can control it.

Tenzing in his empty stock pen thus responded to a statement about the limits of great lamas' authority over lived experience:

No, I don't think lamas could stop the seasons from changing.

Responses from a structured interview statement querying scalar limitations of experience supports this observation, revealing an interesting and informative variance: on a 5-point scale, 42.6 percent of respondents either "strongly disagree" or "disagree" (38.9 percent and 3.7 percent, respectively) and 42.6 percent of respondents either "strongly agree" or "agree" (33.3 percent and 9.3 percent, respectively) that "A great lama could stop the seasons from changing." Although 14.8 percent of respondents were unsure (actually supporting the point), that the exact same number of respondents were so disparate in their beliefs about power and seasonal change, especially considering the concentrations of those who either "strongly" agreed or disagreed with the statement, provides compelling support for the contention being drawn here about the acknowledgement of the physical ground of reality regardless of schematic constellations. The Geshe seems to agree, also stating:

Probably a great lama could not stop the seasons from changing. Great lamas could protect themselves from cold, hot, rain, but not seasonal change.

Similarly, Tenzing sitting cross-legged in his empty stock pen spoke of the limits to human knowledge:

God has created air for humans, whose composition [of air] are unknown. Air is not like vehicles or meals which are manmade and so we can know about their formation.

Finally, a 30-year-old trader in Rigmo stated unequivocally:

I can confidently say that a lama could not stop the seasons from changing.

When asked a follow-up question to her reply that her faith in the Bon dharma is very important in reducing problems in her daily life but sometimes rituals are not effective in helping her to overcome her material troubles, the 25-year-old new mother who runs the seasonal tea tent near Phoksumdo Lake responded quite impassively:

Sometimes lamas don't do the rituals in the proper way.

Another informant, the 62-year-old woman interviewed in her kitchen garden in Rigmo, similarly commented on the schematized bounds of lamas' power, intimating in so doing how recent social changes have begun to influence the schematization of material experience there:

Young lamas are not as great as lamas before. These days lamas don't meditate, they have less power and less dharma.

The boundedness of this schema of nested power clarifies the seeming disparity found in responses to structured interview statements positing the preeminence of the physical power of greater surfaces and those querying the opposite about the physical power that human-animals possess within the entanglement. For example, although most respondents claimed that nature is too vast for humans to be able to harm it, 59.3 percent (mean = 2.37) of respondents answered "agree" on a 3-point scale to the statement, "Humans can destroy nature," with 22.2 percent and 18.5 percent answering "disagree" and "Neither agree nor disagree," respectively. Compellingly, the statement, "Humans are too small and insignificant to be able to harm nature," resulted in a

near equivalency with no majority, with 46.3 percent and 48.1 percent of respondents answering “agree” and “disagree,” respectively, on a 3-point scale (5.6 percent did not know).

This result is especially compelling because a crosstab (Table 1) with “Nature is more powerful than humans” reveals that of the 45 respondents who agreed with the latter statement in the previous paragraph, only 19 also agreed that humans are too small and insignificant to harm nature, though of the 32 respondents who believe humans can destroy nature, only 15 believe that humans are too small and insignificant to do harm to nature (Table 2). As expected, this nested divergence becomes especially evident when such a statement pertaining to human power

**Table 1. Nature is more powerful than humans \* Humans can destroy nature**

		Humans can destroy nature			Total
		Disagree	Neither/Nor	Agree	
Nature is more powerful than humans	Disagree	0	1	2	3
	Neither/Nor	1	1	4	6
	Agree	11	8	26	45
Total		12	10	32	54

**Table 2. Nature is more powerful than humans \* Humans too small and insignificant to harm nature**

		Humans too small and insignificant to harm nature			Total
		Disagree	Neither/Nor	Agree	
nature is more powerful than humans	Disagree	1	0	2	3
	Neither/Nor	1	1	4	6
	Agree	24	2	19	45
Total		26	3	25	54

is framed through practice: “I destroy nature every time I plow my plots.” Responses to this statement ranged, on a 5-point scale, from 66.7 percent of respondents who “strongly agree” to 9.3 percent who “strongly disagree,” with 11.1 percent agreeing, 9.3 percent not being sure, and 3.7 percent disagreeing. Crosstabs (Table 3) reveal an interesting further outcome: Of the 45 respondents who claimed that nature is more powerful than humans, 31 answered “strongly agree” and 5 answered “agree” to the statement that they destroy nature every time they plow

<b>Table 3. Nature is more powerful than humans * I destroy nature every time I plow my plots</b>							
		I destroy nature every time I plow my plots					Total
		Strongly Disagree	Disagree	Neither/Nor	Agree	Strongly Agree	
Nature is more powerful than humans	Disagree	0	0	1	0	2	3
	Neither/Nor	1	0	1	1	3	6
	Agree	4	2	3	5	31	45
Total		5	2	5	6	36	54

their plots. Interestingly, although 35 respondents claimed that nature is too vast for humans to be able to harm it, 42 respondents claimed that they destroy nature every time they plow their plots (Table 4), again suggesting this schema of nestedness as an essential component to the model of the domain of entanglement in Dolpo.

<b>Table 4. Nature is too vast for humans to be able to harm it * I destroy nature every time I plow my plots</b>							
		I destroy nature every time I plow my plots					Total
		Strongly Disagree	Disagree	Neither/Nor	Agree	Strongly Agree	
Nature is too vast for humans to be able to harm it	Strongly Disagree	0	0	0	2	7	9
	Disagree	1	1	0	0	2	4
	Neither/Nor	0	0	0	1	5	6
	Agree	1	0	1	0	2	4
	Strongly Agree	3	1	4	3	20	31
Total		5	2	5	6	36	54

Suggestive of the root physical reality underlying this schema of nested power is how Dolpo-pa respondents do not see themselves as powerless within their entanglement, as suggested by responses to a final statement that metaphorically queries the nature of this schema: “Like an insect is to me, so am I to the forces of nature.” To this statement, 74.1 percent of respondents (mean = 4.46) answered “strongly agree” on a 5-point scale. The 14 remaining responses were divided fairly consistently between the four remaining points, with 5 respondents (9.3 percent) answering “agree,” the same number answering “neither agree nor disagree,” and

the remaining 4 responses divided equally between “disagree” and “disagree strongly” (3.7 percent each). These frequencies suggest that informants in Dolpo are generally well-aware of their physical position *within* their domain of entanglement. As the Geshe off-handedly commented to this final survey statement:

Yes, we are like insects in relation to nature. Nature is very vast.

Several crosstabs support his conclusion. First, 39 respondents both agreed that nature is more powerful than humans and that insects are to them as they are to natural forces; of those respondents, 35 strongly agreed with the latter statement (Table 5).

**Table 5. Nature more powerful than humans \* Like an insect to me, so am I to natural forces**

		Like an insect to me, so am I to natural forces					Total
		Strongly Disagree	Disagree	Neither/Nor	Agree	Strongly Agree	
Nature is more powerful than humans	Disagree	0	0	1	0	2	3
	Neither/Nor	0	1	1	1	3	6
	Agree	2	1	3	4	35	45
Total		2	2	5	5	40	54

Significantly, of the three respondents who disagreed with the former statement, two strongly agreed with the latter. Second, of the 53 respondents who strongly agreed they would be lucky to survive if caught in a landslide, 39 also strongly agreed that they are like insects to natural forces (Table 6). The one respondent who only agreed that he would be lucky to survive a landslide nonetheless strongly agreed that he is like an insect to the forces of nature, while five other

**Table 6. If caught in a landslide, I would be lucky to survive \* Like an insect to me, so am I to natural forces**

		Like an insect to me, so am I to natural forces					Total
		Strongly Disagree	Disagree	Neither/Nor	Agree	Strongly Agree	
If caught in a landslide, I would be lucky to survive	Agree	0	0	0	0	1	1
	Strongly Agree	2	2	5	5	39	53
Total		2	2	5	5	40	54

respondents both strongly agreed that they would be lucky to survive a landslide and would be like insects to the forces of nature (Table 7). Finally, a large overall majority of 29 respondents strongly agreed both that they destroy nature every time they plow their plots and that they are like insects to the forces of nature, with no other answer receiving more than four responses and no respondent either disagreeing or strongly disagreeing to either answer.

<b>Table 7. I destroy nature every time I plow my plots * Like an insect to me, so am I to natural forces</b>							
		Like an insect to me, so am I to natural forces					Total
		Strongly Disagree	Disagree	Neither/Nor	Agree	Strongly Agree	
I destroy nature every time I plow my plots	Strongly Disagree	0	0	1	0	4	5
	Disagree	0	0	0	0	2	2
	Neither/Nor	0	0	1	1	3	5
	Agree	1	1	0	2	2	6
	Strongly Agree	1	1	3	2	29	36
Total		2	2	5	5	40	54

**CONCLUSION: THE NATURE OF THE UNIVERSE, BIOMETABOLICALLY SCALED**

“In a universe such as this,” as Bourdieu (1990:76) contends, “people never deal with ‘nature’ as science understands it—a spatial representation that is the historical product of a long process of ‘disenchantment’” or, more appositely here, a reified conceptualization confirmed by the cognitive trick of its own circularly distorted framing. Indeed, in Dolpo the cultural model of the separate and fixed landscapes of *the environment* as understood through the cognitive delusions of Enlightenment schematic constellations from which the methodologies of Western ‘science’ became renowned in propagating such tautological distortions, as Gotza intimated in our interview, make only a little sense to only a few people.



As this chapter has demonstrated, the Dolpo-pa model what that singular tradition's model interprets (and distorts) as a separate and fixed space reified as *the environment* more as a domain of entanglement within which humans, though phenotypically distinct and karmically unique, are but one surface arrayed within that thin range of physical force and magnitude within that ecological domain. As such, the Dolpo-pa can be said to be holistically simultaneous with if not always explicitly aware of how the scalar asymmetries against which they contend daily in dwelling through the uncertainties of the existential present in such an entangled domain shape the model through which they interpret the world. Within such an entangled domain, as Kirmayer and Sartorius (2007:832) state, such schematic constellations as expatiated in this chapter "function as both resources for and constraints on individuals' constructions and construals of experience."

As data will show in the following chapter, however, the millennia-long and traditionally consonant resource-function of the Dolpo-pa's cultural model of their entanglement is increasingly exhibiting a constraint-function with rapid social changes that have been observed there since about 2005, which is worrying because of how such change is rapidly fragmenting the holistic simultaneity of their synergistic awareness at the biometabolic scale of ecological processes.

## **CHAPTER 5 – MY, WHAT ODD HERDS YOU HAVE: SOCIAL CHANGE IN DOLPO**

### **INTRODUCTION: THE SOCIAL FRAGMENTATION OF INDUSTRIAL PRODUCTS**

Every one of my Dolpo-pa informants, from the youngest at 21 to the oldest at 70, has over the past five years begun to wear industrially produced clothing imported into the area from manufacturing centers in China, India, and Kathmandu. This change from traditionally handmade woolen to industrially manufactured clothing over that short period provides a remarkable illustration of how introduction into a domain of entanglement that has been metabolically stable for centuries of ostensibly trifling but no less alien (and astonishing) products manufactured at the unknown technometabolic scale of industrial processes tends to have seismic and even exponential effects on how human-animals synergistically adapted to the biometabolically-scaled continuities of that entangled domain schematize conceptually and choose to integrate materially/ perceptually those alien goods and unfamiliar changes into their everyday lives.

Further survey data suggests an interesting pattern in this seemingly negligible but expanding transition that reflects how the increased availability of alien products from that technometabolic scale also has emergent though often all but unrecognized social effects that accrue in short time in the first order and precipitate a second-order conceptual break in the framing of existence within the domain. On a 3-point scale, for example, 75.9 percent of respondents answered “disagree” to the statement, “Compared to my old woolen clothing, the clothes I wear today are warmer,” while 59.3 percent also answered “disagree” to the statement, “Compared to my old woolen clothing, the clothes I wear today are of better quality.” In contrast, the same percentage (59.3 percent) answered “agree” to the statement, “Compared to

my old woolen clothing, the clothes I wear today are cheaper to buy.” In contrast, with 42.6 percent and 46.3 percent of respondents, respectively, answering “disagree” and “agree,” no majority existed for the statement, “Compared to my old woolen clothing, the clothes I wear today are more durable.” Interestingly, however, to the statement, “Compared to my old woolen clothing, the clothes I wear today are a sign of status,” a slight majority of 51.9 percent of respondents answered “agree,” while only 35.2 percent answered “disagree.” To each of these statements except the first, more than 10 percent of respondents answered that they did not know (14.8 percent, 16.7 percent, 11.1 percent, and 13 percent, respectively).

What these responses suggest is that the industrially manufactured clothing nearly everyone in Dolpo now wears (including all informants in this study) is of lower quality but is cheaper than the handmade woolen clothing they wore so recently. The slight majority in terms of status and success suggests the possible emergence of a trend in the schematization of a newly emergent social indicator of material experience. These frequencies intimate, in other words, an inchoate conceptual shift in the schematization of the object-world in Dolpo that increasingly focuses on second-order concerns of the conceptual reifications of cost and status (conceptual) and de-emphasizes the first-order concerns of existential endurance in the entropic disequilibrium of energy conservation expressed as warmth (material/perceptual). Such a transition, if verifiable (further study is required), would indicate a possible point of transition from a holistic simultaneity in the practical logic of entanglement. In this transition, the synergistically proven efficacy of such handmade woolen items as the *lokpa* (coat) and *sumpa* (boots) within the unpredictable ecological domain of Dolpo is unreasonably being replaced by the allure of the cognitive trick of distorted framing as represented in Dolpo by those material products of the technometabolic scale and reinforced by the graft of development discourse. The

high ambivalence or lack of surety among respondents answering with the middle value supports this analysis, implying the recency and swiftness at which such change has occurred and how it is confounding long-entangled models of survival.

A similarly significant change over the past five years in Dolpo that reinforces this interpretation is the influx of newly and increasingly available packaged foods like biscuits, bottled beer and ubiquitous Coke products, candies, instant noodles, etc. Of Dolpo-pa respondents, all of whom said that five years ago they seldom (2-3 times a year or so at the maximum) ate or drank packaged products, only 14.8 percent claimed that they never eat packaged foods in a month in the year preceding the study and only 22.2 percent claimed that they never drink packaged drinks. At the same time, respectively, 33.3 percent and 29.6 percent claimed that they consume packaged products 1-3 times a month, which was the median response for food. The median response for drinks was 4-10 times a month. Claiming that they consumed over 20 packaged items a month at the time of the study were 7.4 percent and 16.7 percent of respondents for food and drink, respectively.

Survey data further indicates that although 70.4 percent of respondents “disagree” that “Packaged foods are healthier than locally grown foods,” 77.8 percent “agree” that “Packaged foods are easier to prepare than locally grown foods” and 75.9 percent “agree” that “Packaged foods are more convenient than locally grown foods.” In terms of taste, significantly, no majority was found, with 46.3 percent of respondents answering “agree” to the statement, “Packaged foods are tastier than fresh foods.” To that statement, 35.2 percent answered “disagree” and 18.5 percent answered that they neither agreed nor disagreed. Such high ambivalence was also observed in the data from the previous statements, with, most interestingly, 20 percent of

respondents not knowing if packaged foods are healthier and 14.8 percent of respondents not knowing if packaged foods are more convenient than local foods.

Because packaged foods continue to be schematized more as luxury or specialty items than are now commonly accessible industrially-manufactured clothing, survey results querying opinions about these items provide even greater insight into how experience with such alien products from the technometabolic scale leads to new schematizations of intra-entanglement arrangements at and extra-entanglement connotations of the biometabolic scale. Novel frames of status, for instance, are emerging in new synergies of material experiences and conceptual proficiencies that distinctively constellate both older biometabolically- and newer technometabolically-scaled schemas in response to still quite limited experiences with such products. These novel frames are especially intimated by the contrast and skew observed in responses to statements about packaged foods in terms of social relations instead of, as in the previous survey statements, merely about usage and opinion in terms of personal distinction.

For instance, to the statement, “Packaged foods are more interesting than local foods,” 81.4 percent of respondents answered “agree” on a 3-point scale, while only 9.3 percent answered “disagree” and the same percentage answered “neither agree nor disagree.” Similarly, to both statements, “Packaged foods are changing how people in Dolpo are living their lives” and “Packaged foods are making some people wealthy,” 74.1 percent of respondents answered “agree” on a 3-point scale. To the former statement, only 7.4 percent of respondents answered “disagree” and to the latter statement only 5.6 percent of respondents answered “disagree.” Interestingly, response percentages of “neither agree nor disagree” were quite high for both of these statements at 18.5 percent and 20.4 percent, respectively. Quite the opposite, the statement “Packaged foods are a sign of status and success,” which still had a majority of respondents

answering “agree” (63 percent), otherwise saw a reversal of response compared to the previous two statements, with 29.6 percent of respondents answering “disagree” and only 7.4 percent of respondents answering “neither agree nor disagree.” Bourdieu (1984) might argue that this reversal suggests inchoate “classificatory struggles,” individuals associating with newly emerging classes trying to differentiate themselves in the construction of new lifestyles framed based on what Neil Smith (1987:168), referring to a new urban ideology but no less applicable for the shifting of frames in Dolpo, calls the “pursuit of difference, diversity and distinction.”

Suggested by such classificatory struggles is an increased focus on the conceptual over the material at the root level of the physical domain of Dolpo that intimates, especially considering both intra- and extra-entanglement realities there, a nascent acquiescence to the circular distortions of the technometabolic framing of experience. The first statement in the preceding paragraph (foods more interesting), for instance, only asks about personal distinction in terms of such foods, expectedly eliciting a quite high positive response. The two paired responses that had the same response rate, on the other hand, both implicitly asked respondents to reflect on the nature of social relationships in terms of lifestyle and wealth, with the relatively high percentages of agreement suggesting how the increased availability of those new material goods were increasingly being perceived at the time of the study through a shifting frame. Similarly suggestive is the relatively high rate of response of “neither agree nor disagree” as opposed to flat out “disagree,” which suggests the influence of the extended ontology of the karmic frame of Bon epistemology, through which, as the Geshe commented, not only acting toward but also speaking poorly of other individuals is a sin.

As such, this older, biometabolically-scaled Bon frame might limit definitive response to these new social arrangements that the majority of respondents, based on their replies to the

survey, do explicitly schematize as leading to social disparities like have never been seen before in Dolpo. The final statement on “status,” therefore, which results in the intriguing reversal of response rates of “neither agree nor disagree” (7.4 percent) and “disagree” (29.6 percent) from the paired statements preceding it, reinforces this observation. As “status and success” can readily be framed self-reflectively, the reversal suggests a schema indicating individuals’ desire not to appear greedy or showy and therefore sinful (as in the paired statements) even as the high overall rate of agreement still implies the majority opinion, indicating a change in how those within that physical domain of experience schematize such luxuries, which are becoming more and more commonly valued not for their material benefits in terms of ecological entanglement but for their conceptual benefits in terms of status.

This analysis is bolstered by two further structured interview statements. To the first, 66.6 percent of respondents answered “true” to the statement, “I am envious of my neighbor’s increased wealth,” while to the second, “I sometimes drink bottled beer or soda to show that I can afford such things,” 74.1 percent of respondents answered “true.” Crosstabs (Table 8) of these two statements are even more revealing, however, with 24 of the 40 respondents (60 percent) who claimed that they do *not* consume bottled drinks to show that they can afford to do so nonetheless claiming that they are envious of their

**Table 8. Envious of neighbors' wealth \* Sometimes consume bottled drinks to show off my increased wealth**

		Bottled drinks to show off wealth		Total
		True	False	
Envious of neighbors' wealth	True	12	24	36
	False	2	16	18
Total		14	40	54

neighbors’ increased wealth, the highest value in the table. In contrast, only two respondents claimed that they *do* drink bottled beverages to show that they can afford to do so but do not also

envy their neighbor's wealth. Such comparative disparities reflect an inadvertent outcome of this valorization of industrial products as status, an emerging conceptual frame of competition the likes of which numerous respondents commented has never before been observed in their experience of Dolpo.

This frame is, however, looping back into the material experience of the Dolpo-pa in generating palpable and ever more seamlessly naturalized schemas that validate the ensuing social fragmentation and thereby reinforce, in again looping back, the emerging schematization of the material products imported from the perceptually unknown technometabolic scale of industrial processes as indicators of status. Tellingly, numerous informants in Rigmo referred, both explicitly and implicitly, of an emerging sense of competition and subsequent fragmentation among villagers. For example, to a question from our semi-structured interview asking if there is anything negative about the new clothes everyone is wearing nowadays, the owner of the village shop in Rigmo responded:

These clothes are not durable, more money is expended, and there is unfair competition among villagers about these things. In past days, all people wear wool clothes but today all wear different kinds of clothes, so we can easily say that this person is rich and this is poor. We can distinguish unlike when they used to wear self-made clothes, there was no way to distinguish and to buy the new clothes costs much money. These are the negative impacts.

A 49-year-old harvester of *yartsa gumbu* spoke similarly:

With increased wealth, people have become more active rather than lazy. Before, the only thing we used to do was farming but now everybody has a comparative attitude to do better than others . . . like more competitive.

The Geshe commented similarly to a question about Rigmo villagers' work ethic nowadays:

Firstly, what I want to say is that people in our village have got an easier life now but that doesn't indicate increased wealth. There is no one who deals with millions and billions. And people are not lazy now; instead of that, they are more competitive and comparative [than in the past]. Everyone is keen to be more successful than the other.



On the rooftop of her home, a 50-year-old woman in Rigmo made a most apt comment to this effect, implying the ambivalence many are feeling toward the repercussions of such emerging schemas of fragmentation:

Yes, everyone has become independent, which is good from my perspective. Nobody has to go anywhere to ask for money or food [anymore]. If something like that [a crisis or emergency] then I do not expect the villagers to help me, but yes, I do have good kin and relatives who would help me in needy situations . . . but it's really bad not to help out your neighbors.

Despite its being a sin, such inchoate fragmentation is also reflected in survey data that suggests how villagers in Rigmo are beginning to frame their neighbors' doings and undertakings. For example, 75.9 percent of respondents answered "strongly agree" and 7.4 percent answered "agree" on a 5-point scale to the statement, "People in [Rigmo] are lazier now that they have increased wealth and incomes." Only 14.8 percent of respondents answered "strongly disagree" and 1.9 percent answered that they were not sure; no one answered "disagree." A similar statement about doings and undertakings reflective of changing feelings toward neighbors in the village—"With increased wealth people are less interested in their spiritual development and duties"—also had a high affirmative response, with 68.5 percent of respondents answering "strongly agree" and 13 percent of respondents answering "agree" on the same scale. Only eight of the 54 total respondents answered negatively, with 13 percent strongly disagreeing and 1.9 percent disagreeing (3.7 percent answered that they did not know).

#### **HERDING MYCOTIC CATERPILLARS: YARTSA GUMBU & NATURE COMMODIFICATION**

Such recent alterations to the intra-social entanglements of Dolpo, which despite such ambivalence are framed altogether positively by Dolpo-pa informants, are remarkable; indeed, such changes were all but inconceivable even as recently as the beginning of the 21st century, at which time, "amid sweeping geopolitical and socio-economic changes, the continuing viability

of Dolpo's pastoral and trade economies [seemed] slight, compared to the likelihood that many would divest their herds and migrate to urban centers" (Bauer 2004:192). In the late 1990s, so dire was the situation in Dolpo that the people were considered close to famine on several major food security indices (FAO/WFP 2007; WFP 2006). Illegible to those indices, however, was how within a few short years, as Bauer continues, "a one-dimensional economic recovery, dependent upon an anodyne, that of *yartsa gumbu*," had enabled the Dolpo-pa to arrest their own seemingly certain demise in the Faustian exchange of further disentanglement from their domain for this first significant commodification of *the environment*. As such, the Dolpo-pa therewith became for the first time peripheral suppliers within the extra-entanglement world framed by the global economic system<sup>xix</sup>.

Selling for upwards of \$5,000 a pound as "Himalayan Viagra" on the international traditional medicine market (Magistad, 2011), many Dolpo-pa and tens of thousands of others who migrate in from the Middle Hills and Terai spend upwards of six to eight weeks every spring digging for the hybrid caterpillar-fungus in several areas across Upper Dolpo to then sell to brokers in Tibet<sup>xx</sup>. In Rigmo, for example, to the survey question, "How much of your current wealth do you attribute to *yartsa gumbu*," a total of 46.3 percent of respondents claimed over 10 percent (31.5 percent answered "10-50 percent" and 14.8 percent responded "over 50 percent"), while 35.2 percent responded "less than 10 percent" and only 18.5 percent responded "zero." To the statement, "*Yartsa gumbu* is the biggest reason why I have had more money to spend over the last several years," 63 percent of respondents answered "true."

Clarifying these frequencies is that 29.6 percent of survey respondents, all of whom were either farmer-traders or furniture makers before 2005, claimed collecting *yartsa gumbu* as their primary occupation by 2010. Also consequential, however, is that another 29.6 percent of

respondents opened small businesses ranging from tea houses to lodges to shops in that same period, indicating a multiplier effect through the increased wealth secured in commodification of *yartsa gumbu*. An unsolicited reference from the Geshe in response to a general question about whether he is jealous of the increased wealth of villagers in recent years supports this inference:

No, I am not envious of my neighbor's wealth. It is not a good thing to do. If I am envious of my neighbor's wealth then it means that I am not happy for what he is and what he has gained. We lamas do have more money from doing rituals and rites, but for villagers *yartsa gumbu* is the biggest reason [for more money]. So, maybe not directly but indirectly due to *yartsa gumbu* we [lamas] have more money

To be sure, 85.2 percent of respondents answered that it is “true” that they “can earn more money now than [they] could five years ago.” On a 5-point scale, 68.5 percent (mean = 3.85) of respondents also agreed that “*Yartsa gumbu* will continue to provide higher incomes to people in [Rigmo] indefinitely,” with 53.7 percent answering “strongly agree” and 14.8 percent answering “agree.” Interestingly, 18.5 percent of respondents answered “strongly disagree” but no one answered “disagree,” though 13 percent answered that they did not know. The majority of respondents, however, echoed the claim of the 30-year-old trader from Rigmo:

Yes, *yartsa gumbu* will continue to help people of our area.

That the majority of those surveyed and observed in Dolpo conceptualize *yartsa gumbu* as either directly or indirectly providing higher living standards indefinitely into the future suggests how ostensibly trifling changes in the experience of a place like Dolpo by so small a material alteration can seismically and even exponentially affect conceptual proficiency within that domain. This destabilization creates, in turn, through the reification effected by so subtle a shift in frame, new constellations of schemas that frame the once distinct human-animal within as a human being in separation from that reified frame that is *the environment*<sup>xxi</sup>.

Looping back circularly, such a shift confirms the international development model of progress that insinuates from beyond the entanglement and, by the cognitive trick of such reasoning, shifts focus within it from that first-order material experience of dwelling within the

ecological asymmetries of the biometabolic scale to the second-order conceptual proficiency that is only confirmed through that frame by the evidence of the existence of that frame. As such, the essential necessity for a human-surface cum -animal becomes not to subsist well, which is increasingly framed as a backwards and benighted means of being in a present that is not quite present, but to progress by evolving into the second-order constellations produced by that distorting frame, which justifies its own ersatz reality by reifying the schemas that produce such delusional separations from physical reality but which are only ever the impracticable (in the long term) cognitions of the technometabolically-scaled framing of its underlying graft<sup>xxii</sup>.

‘Wealth’ within such a frame transforms as if magically (it is a trick, after all) from a concept embodied materially by physical objects valuable for use or by the physical symbol of money that is schematized like any other physical object that is valuable in representing the concept of ‘wealth’ in exchange-for-use. By this transformation, however, wealth is reified as actually existing materially as an object in the world in cash or coin, a trick circularly confirmed in how transactions are schematized as ‘use *by* exchange’. This trick represents a reversal through that distorting frame of the long-schematized symbolic role of money in many cultures that has over the past five years insinuated itself more and more into the constellations of daily life in Dolpo as the only viable form of wealth. Yaks, for instance, are less often framed now in and of their physical animal-surfaces as wealth than, distortedly, as being somehow symbolic embodiments of real wealth that is found, as is increasingly framed, in those papers printed and coins minted by the Nepali state and indicating (and reinforcing) naught but the array of reifications constellated in schematic representations by its conceptual reification of Rupees.

As Simmel (2004) recognized over one hundred years ago, the increasing influence of this curious material/conceptual, oxymoronically physical-idea of money—valued conceptually

as a symbol of material exchange that is perceived as having no value unless it is possessed physically—has only over these past five years really also begun to influence in Dolpo how individuals frame their relationships with material goods and with one another. Indeed, synergistic awareness within the domain is beginning to disentangle, as evidenced by the slackening of no less than the traditional *netsang* (trade partnerships) relationships with salt harvesters on the plateau and farmers in the Middle Hills with whom schemas of trade were once shared and transmitted inter-generationally in defining the Dolpo-pa's cultural relationships with the world beyond the remote Himalayan domain through which even today they continue dwell (Snellgrove 1981:83).

The shifted focus that has recently arisen in Dolpo with new material experiences of wealth as money through the commodification and sale of *yartsa gumbu* has, however, also had its downsides, which is important to recognize because of how these downsides have thus far been underplayed by the Dolpo-pa. Notably, these downsides have also been downplayed by the distorted frame of International Development that continually reinforces the benefits of such new experiences of wealth as money. Without a doubt, nonetheless, these downsides are evident, as the 62-year-old woman in her kitchen garden in Rigmo stated:

Yes, people of Rigmo are wealthier now than in the past. Now, everybody has a stock of local foods and packaged foods both to sell and to use that we never had before. I have experienced an increase in income but with this the cost of living also has increased. Before, I rarely saw NRs 500 [~\$7USD] but now NRs 500 means nothing.

The 30-year-old trader similarly made reference to certain downsides of life today:

In the past, I used to worry about what to eat and wear, but now I have enough to eat and wear, which is a blessing of god. With this increased living standard, every person is keen to do every new task like doing business, which has also increased the things to be worried about.

The Geshe suggested this same point of increased stress in his semi-structured interview response to a question about standard of living:

My standard of living is the same as before. It's true that people have increased wealth but simultaneously they have more tension and stress. As for my life, it is quite similar.

Survey data appears to confirm the downsides of such experiences with money as conceptualized through this distorted frame. To the statement, for example, "I spend more money on food now than I did five years ago," a significant preponderance exists, with 92.6 percent of respondents answering "true," while the statement, "I spend more money on clothing now than I did five years ago," had an even higher preponderance, with 94.4 percent of respondents answering "true." As expected, these increasing expenditures have led to greater stress, with 83.3 percent of respondents answering "true" to the statement, "I worry more now than I did 5 years ago," while 92.6 percent of respondents answered "true" to the statement, "I worry about different kinds of things now than I did five years ago."

#### **HUXLEY AND FAUST GOING NOWHERE: SHORT-TERM GAINS FOR LONG-TERM CHAINS**

In analyzing such changes as have since the early 2000s descended so swiftly into Dolpo, the basic dichotomy of Everett Lee's (1967) seminal push-pull theory of migration provides a useful heuristic through which to examine how this distorted framing of second-order conceptual constellations gradually more often now defines the Dolpo-pa's relationship with the world beyond their domain of entanglement, especially in terms of the disentangling effects of development discourse. Indeed, the reification of the concept of wealth as an object in the world that is literally contained in the material paper and coins we perceive as money increasingly *pulls* the Dolpo-pa toward the schematic regularity of a model defined by the linear sequentiality of that distorted frame that confirms through its conceptual tautologies of fixed truths and separate spaces the assurances of the cognitive trick that makes those reifications seem so real. Concurrently (and increasingly), that frame also *pushes* them away from the evolutionarily

emergent synergies of experience and proficiency through a model defined by the holistic simultaneity of extended engagement within their entangled domain. Within such a shifting cognition, new second-order schemas continually constellate through a sequential linearity that does not self-correct in looping back to material experience with ecological reality but confirms the distortions of its own framing through the circularities it conceptualizes of itself. In such a way, it begins to reject as irrational—benighted, backwards and primitive—the emergent synergy of known uncertainty that is the simultaneity of looping back holistically in awareness through experience and proficiency.

Constellations of these new second-order schemas, thereby, through the unassailable evidence of linear progression in the manufacture of more complex and advanced material products by the forces and magnitudes made possible by social organization at the scale of technometabolism, frame such distortions as they embody in reification (a trick of shifting cognition that is continually confirmed at the level of everyday) as a fixed truth upon first-order ecological reality. Kreutzmann (2001:134), for example, argues that “quality-of-life indicators are based on the assumption that development is based on universal categories and not on localized experiences and different value systems.” Such indicators intend to effectuate distorted understandings of reality based on such reified fixations as. As Scott (1998:32) notes, “the idea of equal citizenship, the abstraction of the ‘unmarked’ citizen, can be traced to the Enlightenment and is evident in the writings of the Encyclopedists” like Diderot, de La Chapelle, and Voltaire.

As Hornborg (2006:10), drawing from Latour (1993), concludes, however, if such Enlightenment and “modernist convictions were indeed to collapse” our technometabolically-scaled orientation and “the agency of these cornucopian ‘productive forces’” would be exposed “as a transmutation and deflection of the agency of other humans, [rendering] morally suspect

that which modernity had couched in the deceptive neutrality of the merely technical.” As framed through the development model of progress, nevertheless, such a singular and perfunctorily accepted promise as perceived through material evolution and linear production at the technometabolic scale of industrial processes is grafted (*v.*) over the ‘underdeveloped world’—quite literally in terms of their being literally reified conceptual distortions—by a conceptual discourse of Huxleian<sup>xxiii</sup> subjugation that is the graft (*n.*) in the reification of that discourse as the industrial process that is International Development.

In Dolpo, such Huxleian subjugation through developmental graft has over the last several years increasingly enthralled the Dolpo-pa, pulling and pushing them with greater insistence to focus more and more on the illusion of truth in the distortions of the trick of the frame. The 49-year-old harvester of *yartza gumbu* from Rigmo, for instance, intimated this emerging schematic constellation, even providing specifics of what such progress looks like through the circularity of the distorted frame:

Increased wealth is good for everyone. With money, we can buy what we want and nowadays we can even visit Kathmandu, which we never did in the past.

He did not, however, elaborate on the benefit to him of visiting Kathmandu. Most telling in this cognitive shift is the point made by the 56-year-old woman interviewed on the roof of her house in Rigmo who claimed:

Without money . . . nothing is possible. We don’t cultivate everything that we need, so money is necessary to buy barley, rice, oil, etc. that we need to have a comfortable life. People getting wealthier is a good sign of progress.

Important to understand is that the change illustrated in these informant statements is not that the Dolpo-pa now cultivate only a small part of their own subsistence nor that they now trade to supplement that small part, both of which have been defining practices of the synergistic awareness that emerged within the entangled domain of Dolpo for upwards of a thousand years;



no, the change is that the basis of such trade is increasingly thought of and substantiated by that distorted frame, through which such subsistence—a means of surviving; the state of existing in reality—is pejoratively equated with penury as deduced through the circularity of the frame (*a push*), even as wealth in money has no less through that frame come to define how success must be adjudged through that distorted understanding of the world (*a pull*).

Indeed, the Dolpo-pa became “poor” only after their limited access to money was framed as a deprivation, a conceptual shift that engaged the circularity of the development model of progress just as it de-emphasized the little changed physical reality of the Dolpo-pa’s synergistic awareness of their domain<sup>xxiv</sup>. An excerpt from my conversation with the 42-year-old owner of the shop in Rigmo is quite telling to this effect:

- G: Was there anything wrong with the locally made clothes and shoes [the Dolpo-pa] used to wear?  
I: There was no kind of problem but they were hard to make and they took more time. In past days, people did not have enough money, so they used these things but today they get economically strong and they ignore locally made goods.  
G: What were the self-made clothes made from?  
I: From [yak] wool. Everything was made from wool.  
G: Wow, was there anything positive about homemade clothes?  
I: Positive things were that they were warm and more feasible from an economic point of view. They did not have to invest money to make those things.

Undeniably, as with the altogether positive conceptual framing of phenological change that has been experienced as beneficial even as physical uncertainty in the existential present has palpably risen in the last five years (see Chapter 6), so too has increased access with higher incomes to technometabolically-scaled products been framed positively by nearly everyone in Dolpo as an increase in standard of living, as making those with greater access a little more less-poor than their neighbors. As the 49-year-old harvester of *yartsa gumbu* and former trader claimed:

People of Rigmo have got a far better standard of living than in the past. People have got more money, different kinds of clothes and a variety of foods. Before, we never used to have horses but now everybody has got horses.

The 62-year-old woman interviewed in her kitchen garden in Rigmo provided similar evidence of such an increase to living standards, stating affirmatively:

Yes, yes, standard of life is also increased. Before we used to wear one woolen pair of clothes for almost a year but now many new clothes are brought from Kathmandu and China and worn. In the past, we used to eat whatever is on hand but now people have choices of foods, some are from China and some are from Kathmandu.

The 50-year-old woman interviewed on the roof of her house also spoke of her higher living standard, though her response also suggests how the benefits of increased wealth have resulted in fragmentation in Rigmo:

When I was with my first husband, we never had our own home and used to struggle for survival. Now, we do have a house, more money and previously unseen foods to eat and clothes to wear. The fact is that my second husband has his own house and farm but really worked hard to earn some profit. I earn a little money through small business and from yartsa gumbu. Other people in the village also have increased standard of living. Compared to me, though, other villagers have a better and easier life.

Survey data supports the general conviction among informants that their standard of living has increased since 2005, with 87 percent of respondents answering “true” to a statement querying just that understanding. How informants comprehend the concept of standard of living proved additionally corroborative, with 72.2 percent of informants (mean = 4.39) on a 5-point scale answering “strongly agree” and another 11.1 percent answering “agree” to the statement, “Increased standard of living means increased consumption of previously unavailable goods.” Only four respondents answered “strongly disagree” and one answered “disagree,” while the remaining four respondents answered that they did not know. Tellingly, to the general statement, “Increased standard of living equals increased incomes,” 75.9 percent of respondents answered “agree” on a 3-point scale, while only 9.3 percent answered “disagree” and 14.8 percent answered that they did not know. In fact, the Geshe’s response to a question asking what one thing would improve the quality of his life today is most revealing:

The most important thing is knowledge and then money. But, practically, money is more important to buy everything as needed and money is important to gain knowledge also. So, yes, I would say more money.

Similarly suggesting this conviction that increased standard of living is the result of access to more money are several responses to satisfaction indicators asking about the same five year time period in which wealth increased markedly through the sale of *yartsa gumbu*. For instance, to the statement, “My life is easier now than it was five years ago,” 90.7 percent of respondents answered “true.” To the statement, “I am happier now than I was five years ago,” 94.4 percent of respondents also answered “true.”

**THE COGNITIVE TRICK OF THE WESTERN EUROPEAN ENLIGHTENMENT TRADITION’S DISTORTED CIRCULAR FRAMING OF BIOMETABOLIC REALITY . . . OR BHO JHA IS GATORADE® FOR THE SCIENTIFICALLY UNINFORMED & ECONOMICALLY UNDEVELOPED**

In many ways, this strong consensus on these indicators and those positive assessments of social change by Dolpo-pa informants demonstrates one of the main argument being made in this thesis: The cognitive trick of the European Enlightenment tradition’s distorted circular framing of physical reality has, as it has invariantly in each domain of entanglement into which it has encroached around the world since the Age of Exploration (Guha 2000:28), begun to delude the Dolpo-pa into compromising their emergent synergistic awareness by impelling them to reify second-order conceptualizations as objects actually in the world. This trick compels them, in turn, to de-emphasize first-order ecological reality at the biometabolic scale in concentrating on a perception of greater certainty in short-term gains of standard of living through the alien products of the little-known technometabolic scale. Notable in this transition is how each of those previous positive assessments of new living standards explicitly frames the benefits of this new way to conceptualize in terms not of the technometabolic scale of power of which (see Chapter 6) most Dolpo-pa have little experience or understanding but of the industrial processes of that scale that produce the products of which they do have personal experience.

Strengthening this assessment is how such products immediately became more immediately obtainable to the Dolpo-pa with two simple acts: Commodifying *the environment* (in *yartza gumbu*) and accepting the reification of wealth in money. No doubt in the short term these acts are perceived as far-surpassing in a labors-to-limits ratio the definitely restricted possibilities for production of surpluses that had emerged at the biometabolic scale of ecological processes within that entangled domain of Dolpo. At the same time, however, acquiescence to this new frame with its very definite, explicit short-term benefits is rendering the Dolpo-pa more existentially vulnerable in the long term by diminishing the effective functionality of that evolutionarily emergent synergy of experience and proficiency within their Himalayan domain of entanglement.

Importantly, the explicit advantages of more readily available industrial products are at the same time implicitly framed in terms of metabolic energy savings, which intimates a compelling re-constellation of both old entangling and new disentangling schemas that nonetheless always function, because of the compelling first-order benefits of such energy savings, to reinforce the advantages of the distorted frame. That the Dolpo-pa are implicitly aware of the metabolic and symbiotic constraints they must continuously surmount as human-animals and herders dwelling through such a steep and rugged physical domain of entanglement as is Dolpo is evident to anyone who has experienced their hospitality. Ubiquitous on any visit to any home or tent or alpine encampment in Dolpo is an initial offering (without taking no for an answer) and continued refilling (without taking no for an answer) of cups of *bho jha* (salt butter tea), which has been a staple of Tibetan culture in the mountains and across the Plateau since at least the 13th Century (Mayhew and Kohn 2005). Combined with field observations, this history supports the inference that, despite the Dolpo-pa's not having explicit awareness of the 'science'

of electrolyte loss or caloric intake, the ubiquity of *bho jha* throughout the day everyday has emerged as a physical response and shared schematic constellation in the synergy between experience and proficiency over generations of extended entanglement within the domains into which Tibetan cultural knowledge and practice have been and continue to be transmitted.

To be sure, such synergistic awareness has been especially crucial to the everyday thriving of individuals in a physically challenging domain like Dolpo, where, regardless of modeled entanglement or karmic solace, perpetuation as a conditionally-structured surface within the entanglement is excruciatingly hard, requiring not only mental perseverance and tenacity but also and often tens of cups of *bho jah* a day to replace what is lost metabolically in caravanning through its steep, forbidding geographical uncertainty<sup>xxv</sup>. Indeed, such a simple and easily available high sodium, high caloric drink well-complements *tsampa* (roasted barely flour), the traditional staple of (and often only food available to) Tibetans. This implicit frame of metabolic and electrolyte requirements extends no less to the ubiquitous herds of yak and dzoa with which the Dolpo-pa exist symbiotically.

Indeed, I observed such symbiotic awareness, for instance, after a long, hot day of trekking in the scorching sun from Bhijer (~4,000 meters) to the high camp (~5,100 meters) below the Nengla Bhanjyang (5,368 meters) in Upper Dolpo, the highest pass over which we trekked in conducting this study. Upon finding a spot near a trickling water source to set up camp, the first thing<sup>xxvi</sup> our wrangler Nyma did after untethering their upwards of 90kg loads was provide salted water to the four dzoa in our caravan, his knowing through experience and cultural proficiency the specific needs of his herd in that particular situation<sup>xxvii</sup>. The point is that although few in Dolpo<sup>xxviii</sup> have the explicit knowledge of the science of electrolyte and caloric loss and replacement that Western knowledge has ascertained through experimentation in its no

less synergistic awareness—regardless of how it circularly frames those second-order conceptual competencies as somehow ‘scientifically objective’ and removed from the everyday world of material experience (Ross *et al.* 2010:18; Turnbull 1997:557; see also Kuhn 1996)—the Dolpo-pa have discovered through their own implicit logics and practical awareness the similar benefits in the replenishment of electrolytes and calories through biometabolically-scaled production of *bho jah* as Westerners have discovered through the technometabolically-scaled production (and marketing and packaging and . . .) of sports drinks like Gatorade<sup>®xxix</sup>.

The important differences between these discoveries is in the constellation of the schemas of experimentation, the framing of discovery and the subsequent scales of production; in other words, the difference is in fact little more than in how knowledge and knowledge legitimacy are modeled and operationalized (Turnbull 1997:553; Agrawal 1995:421). This is especially true as framed by those peripheral people like the Dolpo-pa who are currently contending with such enormous choices (framed, of course, only as ‘opportunities’) as the first- and second-order pressures and expectations of the graft of International Development increasingly advances on them. As Bodley (1998:20) perceptively observes, however, “Individuals can be made to reject their traditional values if outside interests create the necessary conditions for this rejection.” But, as Knauft (2002:44) finely articulates:

At issue here is not force or coercion in a direct sense but a modern sense of self and personhood associated as if naturally with the hope of a new kind of cultural success. This success is based on new forms of authoritative knowledge and informs a new moral hierarchy that inculcates contextual subservience in those who are not already distinguished. As such, modern hierarchy draws upon the ostensibly best and most earnest strains of modern liberalism to create new forms of cultural hegemony actualized through subjective domination.

In Dolpo, the assurances of this new, circularly distorted conceptual frame are increasingly sundering the evolutionarily emergent synergy of material experience and conceptual proficiency in pulling the Dolpo-pa away from their known first-order physical reality as conditionally-structured surfaces entangled through extended engagement within such an asymmetrical domain

at the biometabolic scale. In doing so, they are increasingly becoming deluded through the reifications of the cognitive trick to accept as truth the second-order constructs of what Knauff terms “authoritative knowledge.”

Doing so thus inclines the Dolpo-pa to schematize from the short-term benefits perceived through limited experience with the material products of the technometabolic scale an overall, long-term advantage in acquiescing to that scale by schematizing a model based on those reifications that so distort the orders of the frame but that no less underlie the first-order forces and magnitudes made possible through those second-order perceptual delusions that undergird the industrial productions of that scale. As Hornborg (2001:94, emphasis in original; see also Georgescu-Roegen 1999) argues with élan:

The Second Law of Thermodynamics states that all processes of energy conversion must entail a net reduction of order in the universe . . . Industrial technology and its products, though suggesting local accumulations of order, *entail* an overall decrease of order in the biosphere. In other words, industrial goods *represent* less order than the energy and raw materials that went into their production. The same, of course, is true of living things, but the implications are entirely different. In subsisting on an extraterrestrial source of order, organic structures—or economists concerned exclusively with pre-industrial societies—need not worry about the Second Law. By comparison, technomass ultimately derives its order from within a finite, inorganic realm, and the economists of industrialism have every reason to be concerned with thermodynamics.

This is an important though seldom honestly appreciated reality that neither cognitive trickery nor neoclassical economic pleading nor development intrusions can overcome in the end, even as those thus engaged in the world continually de-emphasize its first-order preeminence through the distortions that undergird the frames of that technometabolic scale of industrial power.

As Hornborg (2001:124) further states, however, “industrial growth is founded on an asymmetric, social exchange of negentropy,” which exposes the basic graft of the development model of progress. Increasing rejection by the Dolpo-pa of their synergistic awareness of entanglement actually consists, therefore, of a schematic constellation that is part Huxleian and part Faustian, an ecstatic submission to the allure of the modernizing program of that one

European tradition’s Enlightenment that schematized “the idea of progress, and actively sought that break with history and tradition which modernity espouses . . . [in] the demystification and descralization of knowledge and social organization in order to liberate human beings from their chains” (Harvey 1990:12-13). Within such spaces of disentanglement, the Faustian push and the Huxleian pull increasingly fragment how knowledge is schematized and subsequently constellated in models that distort how legitimacy is framed. Only through such a distortion could the physical realities of holistic entanglement be reified as conceptual chains that restrain progress; indeed, only through such a conceptual distortion could reification be delusively framed as the first-order root of material experience.

Further ethnographic material from Dolpo illustrates this re-constellation of fragmented knowledge through such a distorted frame. For instance, although 90.7 percent of survey respondents answered “true” to the statement, “Knowledge of the Bon Dharma is more important to me than knowledge that enables me to earn more money,” 83.4 percent answered “true” to the statement, “The knowledge I learned from my parents and neighbors is *less* important than the knowledge children learn in school today.” A crosstab (Table 9) of these statements is especially suggestive, as by far the most common response at 76 percent (41 of 54 respondents) is that knowledge of the Bon Dharma is more important than making money but knowledge from one’s parents is also less important than knowledge children learn at school today.

<b>Table 9. Knowledge of Bon dharma more important than knowledge for making money * Knowledge from parents less important than knowledge from school</b>				
		Knowledge from parents less important than school knowledge		Total
		True	False	
Knowledge of Bon dharma more important than knowledge for making money	True	42	7	49
	False	3	2	5
Total		44	9	54



Tellingly, the only operating schools in Dolpo are funded almost exclusively by European foundations and nonprofits and administered based on Western models of pedagogy. The ostensible purpose of these schools is to provide opportunity to the rural poor through education, which is framed nearly the world over as an appropriate objective for development; what is often too perfunctorily dismissed, however, is that this liberal aspiration is no less a product of that distorted frame, such schools in fact functioning more as hubs through which students are enthusiastically disentangled from their domains and optimistically inculcated as eager propagators of that linear sequentiality of progress through that graft of the development model of progress that delegitimizes, concurrently, their own holistic knowledge as backwards and primitive and underdeveloped. What such indoctrination produces, as a result, are more and more peripherally emplaced second-order circular spaces through which progress is further schematized and constellated as both the claim and the evidence for its own authority as keeper of what becomes an ever more hegemonic reification of knowledge as an object in the world. Through that same cognitive trick, the distortions of that trick increase its technometabolically-scaled social organization through the many-headed Hydra of liberalism that is delusionally framed and that delusionally frames what material opportunities it can provide over the long term. This is true even as it further encroaches in the short term into the very real and very physical existential present of places like the remote Himalayas where first-order uncertainty continues to define reality for those human-surfaces cum -animals who dwell there regardless of the many dissimulations of that model of progress.

Significantly, few if any of the donors, organizers, officials, teachers, principles, or parents who support such schools as operate in Dolpo are deliberate in their assent to this distorted frame of liberalism or the Huxleian/Faustian havoc it wreaks through engagement with

its best intentions. Although, for instance, such schools like Kedar's Crystal Mountain School in the Tarap Valley have increasingly included lessons on the cultural importance of traditional practices, as the former schoolmaster Gotza in Namdo commented of his school in our interview such lessons are now often only recited from a textbook as a part of Tibetan Language lessons and no longer consist of that mimetic enskilment of which Ingold (2000:55) writes and through which such children do not acquire awareness of living in *the environment* of Dolpo but become synergistically aware by *being* Dolpo<sup>xxx</sup>. In such classes, Dolpo-pa children only learn *about* their culture, practicing their language in what becomes a sad second-order attempt to salvage it as learning Nepali and/or English is framed as more a skill for progress in the eschewing of subsistence as backwards. Similarly, staging traditional performance has become not a synergistic transmission of being within that domain of entanglement but a burlesque in being of or from that exotic, timeless *environment* that is Dolpo. Such performances are viewed favorably as possible entertainment for an inchoate ecotourism industry that is discussed now (as in many places) as a possibly viable development strategy to provide jobs and futures for those at the periphery who are increasingly framed conceptually as and thus bodily become penurious<sup>xxxi</sup>.

Such a shift in the framing of culture, from what you holistically are in a dynamic synergy of awareness within a domain of entanglement to something you know about in a sequence of linear comprehensions, only reinforces this reification of culture as an object. Among other concerns, this shift enables such comparative schematizations as envisioned through the distorted frame by which the culture in Dolpo indeed does appear not to have progressed in respect to those cultures that exist at the core of the world as assessed through the circularities of that distorted frame that confirms itself by being both the evidence and the claim for itself. The consequences of such disentanglement are profound, as evidenced by the voices of

that large majority of Dolpo-pa who enthusiastically support the ‘opportunity’ promised metonymically by these schools in subjugation through such new constellations that frame their own knowledge as illegitimate or as not even valuable enough to be considered a form of knowledge. For example, a 70-year-old man from Rigmo claimed:

Yes, knowledge that children learn in school today is obviously more important than our knowledge which was passed to us from our parents.

The 30-year-old trader echoed this response, exemplifying how the distorted frame of the cognitive trick de-emphasizes the physical in confirmation of the distortion, stating:

Nowadays, everybody gives more importance to the knowledge that school children learn in school, so I think maybe our knowledge is less important.

Even more compelling in this regard, however, was the response from the 62-year-old woman interviewed in her kitchen garden in Rigmo who explicitly stated how acquiescence to this new frame of knowledge remains no less rooted in the harshness of material experience in dwelling within the physical asymmetries of Dolpo:

Our knowledge is less important as compared to the knowledge of school students because we put every single physical effort [in working to acquire our knowledge] but school students can apply their knowledge by sitting in a chair.

The 63-year-old woman who collects *yartsa gumbu* made a similar statement:

The knowledge that school children learn in school is more important than our knowledge because we exert physical effort with our knowledge but school children stay in their chairs and work.

Such framing of school is remarkable, as it not only bolsters the argument about the underlying pull of knowledge subjugation through framing discussed above but also represents the reversal by which those opportunities of development are themselves re-framed as a push by those newly subjugated to the distortions of that development model of progress, suggesting the active process by which this re-constellation of schemas in the cognitive shift of cultural flux occurs by those being increasingly influenced by it. In this way, development can be modeled not only as pulling the Dolpo-pa as they acquiesce to their re-framing of their own synergistic knowledge as

illegitimate but also as pushing them by its promise of providing a new form of thriving at the technometabolic scale that conserves physical energy by demanding less labor in surmounting the no less contentious asymmetries of the biometabolic scale.

Such a push as was observed in Dolpo suggests the same phenomenon of assimilating new information into existing models that Kempton *et al.* (1996:77) found in their study of environmental values in American culture. They found that new information, even if contrary to the basic claims of a culture's model, is far more readily integrated into existing frames than are the premises of such frames amendable in regards to new information. In a development context, however, wherein a conceptual model is itself in the process of shifting (or being shifted) to an entirely different scale—such as in this case from the biometabolic to the technometabolic—of force and magnitude of physically being in the world, inevitable unknown or misunderstood or misrepresented information due to material inexperience with the scale being shifted to is integrated into the new frame based on the coherencies of the old. This is true even if the old model is conceptually unsuitable to accurately model material experience at that new scale.

For those Dolpo-pa respondents quoted above, therefore, among others who intimated a similar understanding of the benefits of less energy consuming physical labor, school is schematized not as providing greater opportunity as it is framed by the development model of progress from the technometabolic scale of industrial production (of which again most have little understanding) but as being a means through which to physically labor less in a life lived entangled at the biometabolic scale of ecological processes, which, in Dolpo, suggests that school is framed as a means to mitigate the uncertainty of being a physically structured surface with metabolic limits within the asymmetries of a shifting, cleaving domain of constant surface flux. Indeed, most informants have only a little if any understanding of what students learn in

school, their assessments stemming solely from their experience of seeing children physically laboring less in doing their school 'work'.

### **CONCLUSION: 'THE EASY LIFE' AT THE TECHNOMETABOLIC SCALE OF INDUSTRY**

Acquiescence to the development model of progress does not necessarily mean explicit acceptance or even understanding of its distortions, though implicit acceptance of the model inevitably results in acquiescence to the frame that is the distortion that becomes the basis of all further incoherence between the material/perceptual and the conceptual in the disentangling of synergistic awareness in Dolpo. Indeed, extending from a scale never before experienced by biometabolic dissipative structures at any scale of entanglement (ecological, evolutionary, geological), the force and magnitude of progress modeled technometabolically further deludes by providing the push of short-term physical benefits of the products from that new scale without providing an understanding of what limits or drawbacks are known of the long-term effects that have resulted from acquiescence to it by peoples around the world long-since deluded into acquiescing to it.

To be sure, many respondents intimated how their acceptance of the technometabolically-scaled development model of progress is little more than a matter of how life becomes physically easier for them through it. The point is that to a dissipative structure at the edge of ecological uncertainty in everyday life, an easier time of it is progress. This is true even though it is not (and no one in Dolpo suggested it) anything like the Enlightenment origins of how progress has been for centuries framed at that all but unknown scale of technometabolism of which only a handful of people at most in Dolpo is at all knowledgeable. This unawareness is not because the Dolpo-pa are conceptually ignorant or primitive or backwards but because they have never had material

experience at that technometabolic scale of industrial processes that probably pushes more than the distorted frame of that scale pulls them. In essence, therefore, the development industry is graft because it entices people like the Dolpo-pa with the short-term benefits of the products of an unfamiliar scale of what it recognizes will be advantageous to its masters in the long-term unequal exchange of negentropy that promises progress but firmly keeps its core economies in power at the center of the system (Hornborg 2001, Bunker 1985).

Comments from the 62-year-old woman in her kitchen garden in Rigmo echo numerous respondents suggesting this interpretation of how development is pushing the Dolpo-pa to acquiesce in their framing of its promise of a less physically demanding life:

We feel that our woolen clothes are more important but woolen clothes are really hard to make. People prefer an easier life, so they just exchange money for new clothes [from factories far afield] that are very easy to get and light to wear.

Further into our discussion she also stated:

People don't have to struggle for survival like in the past. Some have more wealth, some are average, and some people have got sufficient wealth to live life happily . . . [People are] lazier in the sense that they don't prefer to put physical effort in and don't have patience any more. Young people have the sense of earning money rather than farming and waiting for a long time.

To this effect it can be said that people in Dolpo frame the promise of development not as a way to escape the chains of the past in reaching a benchmark present of greater evolutionary development through science and technology but as a way to have a less labor-intensive life. The Dolpo-pa remain entangled within their domain even as they are both pulled by the disentangling circularities of the distorted frame of industry and pushed to pursue the long-term benefits they schematize through the metonymical experience of the products of that frame. Their frame, that is, remains very much local and biometabolically-scaled.

Despite such positive re-constellations of old and new schemas, however, such change will in the long run have done with them, both materially/perceptually and conceptually. Indeed, belying the certainties promised by its distorted frame, the inevitable physical shortcomings of

such shifting conceptual frames as have already begun to emerge will only intensify with the continued exuberance by which most of the Dolpo-pa are acquiescing, even as many of them intimate by their own acknowledgments of what unknown uncertainty they will face in the future. As a 63-year-old grandfather, who collects specimens of *yartse gumbu* for extra income during the season but did not make the connection between this new physical reality and the future, at least explicitly, stated in our conversation:

There is no way of having more money [here] rather than from yartsa gumbu. It is the biggest reason why I along with all people [in Dolpo] have had more money [over the last five years].

The 62-year-old woman in her kitchen garden in Rigmo, who does collect specimens to sell in Tibet, commented, however, on the limits of *yartsa gumbu* that so many informants in Dolpo do not schematize, stating:

No, I don't think yartsa gumbu will continue to provide income to the Dolpo-pa. It's almost disappearing. I don't get the kind of quality and quantity like I did in the past.

Despite his participation in harvesting, the grandfather feels similarly:

I don't think yartsa gumbu will continue to provide higher incomes to people. It will disappear within 2-3 years.

Indeed, the woman in her kitchen garden in Rigmo intimates this outcome:

Overall, *yartsa gumbu* has had a positive [effect] on life here, but I think if *yartsa gumbu* disappeared then it would be hard for local people to lead a normal life like before.

Arguably, the normal life to which she refers is that emergent synergistic awareness through extended engagement within the high Himalayan domain of entanglement that is Dolpo. It is a life based on reality at the biometabolic scale of ecological processes, which array asymmetrically the shifting and cleaving of physical surfaces of which human-animals are unique and distinct from but no less a part of as conditionally-structured surfaces within the array. For at least one thousand years since migrating into that domain of Dolpo, those human-surfaces cum -animals who are the Dolpo-pa, the people of Dolpo, have become exceptionally

well-adapted to the harsh physical conditions they face thus entangled there. Indeed, they have thriven through their holistic simultaneity, each new experience looping back to either confirm, contest, or alter the conceptual framing of each subsequent experience in facilitating conceptual coherence through awareness to surmount those arbitrarily arrayed asymmetries of the forces and magnitudes of that biometabolic scale of ecology in that entangled domain.

But the entirety of the Dolpo-pa's entangled experience within that high Himalayan domain has *always* been at the biometabolic scale, at which their selective advantage as human-animals thriving thereby as Dolpo-pa has *always* been in their having materially/perceptually identified and conceptually modeled the known uncertainties that have come to be expected after extended engagement there. This is true even as the emergent arbitrariness of that synergistic awareness has over that time also become naturalized as the only possible way to be in surmounting those known uncertainties<sup>xxxii</sup>. Scaled differently, however, such biometabolically-scaled advantages can be readily and no less arbitrarily distorted, become limitations that are both material/perceptual and conceptual within the range of ecological reality.

In truth, therefore, the disentanglements and fragmentations of recent social changes analyzed in this chapter are worrying foremost not because they are altering the Dolpo-pa in significant ways as assessed by an outside observer keen on salvaging their culture or saving their glacier-strewn mountain environment; no, recent social changes are worrying foremost because they emanate from that technometabolic scale of industrial power that is not only all but materially/perceptually unknown to the Dolpo-pa but that can also produce forces and magnitudes that are certainly beyond the capacity of the Dolpo-pa's cultural models to accurately conceptualize let alone adequately represent and respond to in the short term. As the following chapter will argue, therefore, the Dolpo-pa are now in the process of rapidly disentangling from



the synergistic awareness of their entanglement, caravanning now through their model darkly not only by their own acquiescence to the cognitive trick of the circular distortions of reasoning as illustrated in this chapter but also by the very real entropic consequences (i.e. warmer temperatures, less snowfall, etc.) of production at that technometabolic scale that most individuals there see quite plainly in their material experience. Most Dolpo-pa, however, also remain conceptually blind in modeling such changes exactly because of their lack of experience and proficiency at that technometabolic scale, leading to confusions and an increase in what will be introduced as *existential dissonance* in the final chapter of this thesis.

## CHAPTER 6: THE SPIDER TRILOGY

*Oh, what a tangled web we weave,  
When first we practice to deceive!*

- Sir Walter Scott

### PART I - THROUGH THEIR MODEL DARKLY

#### INTRODUCTION: THE LIMITATIONS OF EXISTENCE WITHIN A PHYSICAL ECOLOGY

The Dolpo-pa's cultural model of entanglement within their high mountain domain, though well-adapted to conditions there, is significantly limited as an interpretive, generative frame of observation and inference in resolving issues that are inconsistent with the known range of uncertainties that have come to be expected as framed by that model after extended engagement within that domain of entanglement. This limitation has seldom if ever before been discernible in their millennia-long engagement with the physical forces and magnitudes of the high mountain landscapes of Dolpo because the synergy of material experience and conceptual proficiency that emerged in and that has been shared and transmitted among the human-animals who migrated to those high mountains became adaptive to what became the expected range of physical conditions of that domain in those whose progeny continue to dwell there synergistically even today. In this way, the Dolpo-pa can be called autochthonic, having "existed in the same region and interacted in similar ways with the same natural environment for many centuries . . . [and] under these conditions . . . have well-developed and sophisticated cognition of the natural world" (Kempton 2001:50)<sup>xxxiii</sup>.

As if on cue, however, in his quite accurate statement, Kempton engages in the same reifying illusion of which his fellow cognitive anthropologists Strauss & Quinn and Shore were guilty as pointed out in the theory chapter of this thesis (see Chapter 3): The Dolpo-pa do not

*have* “well-developed and sophisticated cognition of the natural world” but *are* a well-developed and sophisticated phenotypic evolution whose emergent selective advantage is the awareness of the awareness of themselves enduring synergistically (the ‘cognition’ Kempton suggests) as distinct and unique but as no less a part of a domain of entanglement into which their forebears migrated so long ago and which is often too perfunctorily still reified by one tradition’s methodological standard of observation as some separate space called ‘the natural world’, or, more often, *the environment*. This distinction (of framing, no less) is no mere caviling; indeed, it provides an elegant retort to such similar reifying illusions as are promulgated by, for instance, the circular discourse of international development by re-framing the distorting premises rather than the inexplicable claims of the cognitive trick of linear sequentiality that is not grounded in first-order physical reality but in the second-order symbolic representations of rules typically implied in traversing the existential present at the biometabolic scale of ecological processes.

More importantly, this distinction also more honestly admits to limits by acknowledging the physical root of all holistic simultaneity in the entanglements of domains across the world, which is often, as within the entangled domain of the existential present of experience in Dolpo, a product of the naturalized arbitrariness by which ways of being and ways of thinking become schematized and then constellated as explicit but often also implicit conceptual models of how the world is or must be or always will be. When shared and transmitted, such models are described as being cultural, and as Kempton *et al.* (1996:77) found in studying American environmental values (see Chapter 5), are difficult to extricate because new and even contrary information is far more readily integrated into existing frames than are the premises of such frames amendable in regards to such new information. In a place like Dolpo, as was almost assuredly the case in all such places the world over until the onset of and subjugation by the

current hegemonic cycle and technometabolic unequal exchange of the industrial world system (Taylor 1999; Chase-Dunn and Grimes 1995; Hornborg 1992), such resistance to destabilizing change has proven advantageous, as the holistic simultaneity of such synergistic proficiency has been honed for generations of extended engagement with the known range of uncertainties that could be expected within that domain of entanglement.

Phenotypic human-animals in Dolpo, in other words, have thriven by the synergy of material experience and conceptual proficiency, looping back through generation after generation by consistent physical encounters with what became conceptually naturalized in framing the materially/perceptually known uncertainties of asymmetrical surface change within that thin range of physical force and magnitude at that biometabolic scale. This synergistic awareness not only defined what was known to be possible by material experience but also came to culturally model through conceptual proficiency the very limits conceivable of physical possibility in how the world could be and must be and always would be. Crucially, even though they do not know it explicitly, such limits to how the Dolpo-pa see have always been thus scaled biometabolically to the ecological processes of the Dolpo entanglement.

#### **EXPERIENTIAL LIMITS AND THE FRAMING OF ENTANGLED POSSIBILITY**

As expected from the Dolpo-pa's model of entanglement, therefore, the physical asymmetries of force and magnitude in the domain of Dolpo figure highly in informants' framing of spatial possibility. Responses to a statement from the structured interview—"Humans can destroy local environments but cannot have global impacts on the natural world"—illustrate this point, with 63 percent (mean = 3.94) of respondents answering "strongly agree" and 7.4 percent answering "agree" on a 5-point scale. Of the remaining respondents, 12 answered "disagree" or

“strongly disagree,” with 16.7 percent of the total answering the latter (four did not know). Of course, the vagueness of this statement does not indicate exactly what ‘local’ and ‘global’ entail within the Dolpo-pa’s model, ‘global’ possibly framed only as those most extreme limits of physical asymmetry *within* the entanglement, the highest mountain peaks or the most isolated of canyons where Yeti are still rumored to roam and of which not one of my informants has material experience. Such a conceptualization differs considerably from how ‘global’ is framed within the circular discourse of illusory reification such as that of an observer/ researcher whose ‘global’ space is scaled not to ecological processes but to the conceptual distortions of the aggregated ‘biosphere’ or metonymic ‘village earth’ or some other such deluded twaddle that is confirmed only through the cognitive trick of that distorting discourse as it loops back on itself in confirmation of itself.

Although over 70 percent of respondents agreed that humans can have only local environmental impacts, in other words, a better understanding of how such variables scale conceptually to the first-order physical reality of ecological processes in Dolpo will better clarify how conceptual limits of physical possibility are perceived through the Dolpo-pa’s model of their entangled domain. Fortunately, several statements made in semi-structured interviews do ground this polysemy in the first-order root of the physical. For example, the 70-year-old woman interviewed in Rigmo claimed:

If we destroy the local environment, that can’t have global impacts. The impact will be here to us.

Similarly, a 49-year-old trader illustrated how limits, especially of human agency, are framed through the Dolpo-pa’s entanglement model based on the physical asymmetries of force and magnitude in terms of surface entanglement and material experience, stating unequivocally:

No, we can’t harm distant nature like the high mountain; it’s even hard for us to reach there. And I don’t think mountaineers even harm high mountains.

Reflecting how the model also depicts human agency as a nested power among such surfaces within the entanglement, the 30-year-old male trader and harvester of *yartsa gumbu* asserted:

When we plow plots then there might be little destruction to nature, but we can't harm those high mountains and big rocks.

The spatial range suggested in such explicit statements also implicitly intimates a considerable temporal framing through the Dolpo-pa's model; in other words, the physical asymmetries of force and magnitude are known uncertainties not only in terms of rigidity but also ephemerality, which can be but are not necessarily related characteristics. As such, ubiquitous surfaces like glaciers and lakes and mountains that change constantly at the geological scale but appear as all but unchanging at the biometabolic scale of ecological processes of a human-animal lifetime or even of a conceptually extended cultural or karmic engagement are framed by informants' model not only as spatially but also as temporally unyielding to the physical forces or magnitudes of power that can and do overwhelm human-animals in their entanglements<sup>xxxiv</sup>. Again, this power is always scaled to the ecological possibilities of biometabolic change. Significantly, such framing defines in time what is then schematized as the limit human agency can conceivably have in space, which, markedly, tends also to delimit the conceivability of what is physically possible in time-space by the framing of such possibility in terms of the synergistic continuity of material experience and conceptual proficiency in dwelling within that physical space of the entangled domain. Tenzing, for example, sitting cross-legged in his empty stock pen, stated quite frankly:

Glaciers are too old to disappear, but, yes, changes in size and shape do occur. I have spent almost half of my life here and have never heard of glaciers disappearing.

Echoing Tenzing is the statement of the 49-year-old trader also from Rigmo, who said:

Glaciers are too old to disappear completely, but there might be changes in size and shape.

Additionally, a consistent response among informants referred specifically to the imperviousness to time of sacred Phoksumdo Lake itself, with many informants commenting similarly to the 62-year-old woman interviewed in her kitchen garden in Rigmo who reasoned simply in response to a question about the possibility of whether or not the lake could ever dry up or disappear:

The lake is too old.

The Geshe living in the ancient gompa on the shore of the lake echoed this point:

Um, depending on the season like winter and summer the size of the lake changes but it can never be dried up completely.

Intimating the same logic of synergistic awareness concerning glaciers as Tenzing above is the response of the 30-year-old trader from Rigmo who claimed to a question about the impossibility of change to the lake:

This is true. When I was a child the lake was the same as now.

Notably, 87 percent of survey respondents confirmed these opinions, claiming that it is “true” that “Phoksumdo Lake is too old to be affected by changes in the snows in the high mountains.” The point is that such an outcome as the lake’s disappearing for whatever reason is beyond the frame of possibility as defined by the Dolpo-pa’s model of their entangled experience.

### **CAUSALITY, ‘FUZZY LOGIC’, AND THE KNOWN UNCERTAINTIES OF CHANGE**

The wording of the previous survey statement about Phoksumdo Lake was very deliberate, as it suggests how causality is modeled by that synergy through which informants in Dolpo frame the physical asymmetry of their entanglements. Indeed, causality is uniquely conceptual in that though it expresses a second-order relational abstraction of material experience, it ostensibly describes first-order physical interactions and intersections. As such, material experiences of causality should be understood as being no less influenced by

interpretive conceptual representations of physical possibility than are second-order frames through which physical force and magnitude are interpreted and attended to. This suggests that ‘causality’ is as synergistically constructed a schema as any other interpretive frame through which first-order physical forces and magnitudes are understood. As such, conceptual schemas of causality in Dolpo are produced through material experiences with physical reality and then constellated conceptually within the Dolpo-pa’s model of their domain of entanglement, looping back to confirm or contest or alter such models by further material experience. In such a way, Tenzing sitting cross-legged in his empty stock pen can explain without discernable (to his framing) incongruity that although the temperature in Rigmo is consistently warmer than it used to be and that the mountains regularly do not have as much snow as they once did, the glaciers, which, according to him, “are almost useless except for the one good thing that they provide good scenery,” could never melt away completely.

The point is that just as conceptions of human agency in the Dolpo-pa’s model are limited by the breadth of material experience, so too is the framing of causal possibility of physical change at the scale of ecological processes also limited. For instance, 87 percent of respondents said that it is “true” that “The amount of snow that falls each year determines what the temperature will be.” An illuminating part of my interview with Luhuk, the 31-year-old woman who runs a seasonal tea tent and weaves blankets near Phoksumdo Lake, illustrates the material basis of schemas constellating in explanation of the characteristics of physical weather events at the scale of ecological processes:

G: Is the temperature different at this time of year now than it was in past years?

L: I’m not sure. If the snow falls, it is cold; if not, it is warm. It depends upon the amount of snowfall.

G: Is it possible that there is not much snowfall because it is warmer?

L: No.

G: It’s not possible? If the snowfall continues to decline and there is less snowfall, will the temperature continue to rise?

L: Yes.



To Luhuk, as to that preponderance of survey respondents who schematize the casual relationship of snow controlling temperature, snow is a physically perceivable phenomenon, a material certainty. As such, snow differs markedly from temperature, which is a more abstract phenomenon, immaterial and uncertain, immeasurable in such a place as Dolpo except for how it affects an animal's conditionally-structured surface, which is an attribute of the animal and not of the cold. Within such a high desert entanglement, where temperatures can sometimes quickly drop fifty and more degrees in the short spaces of day to shadow and night and traders without the benefits of radars or forecasting technologies are often encamped over 4,700 meters in passage between valley settlements, snow, therefore, as schematized through extended engagement with physical possibility within that domain, is one palpable indicator of what might be expected of somatic sensation from so intangible a physical phenomenon as temperature. In this way, a guesstimate is rendered of what would otherwise be nothing more than a guess in enduring longer the true uncertainty of the existential present in such a domain.

Such rendering by an autochthonic population like the Dolpo-pa is not a 'fuzzy logic', however, as it is often described as being even by those 'indigenous knowledge' enthusiasts (Berkes 1999; Berkes and Folke 1998; Bourdieu 1990) who ostensibly affirm and advocate for its social advantages through their observer's frame of over-accentuated second-order linear sequentiality; no, through a frame of first-order holistic similitude the schema that snowfall controls temperature derives from neither a fuzzy nor an irrational but from quite a useful and apposite logic in terms of immediate ecological circumstance within a specific domain of entanglement. This is true even as awareness of the essentially opposite nonlinear physical processes by which snow is 'explained' in forming and falling as modeled by the methodologies of linear 'science' becomes through that frame—and somewhat ironically if not itself fuzzily—

un-useful and certainly unfathomable and perhaps even illogical to a trader encamped on a high Himalayan pass, survival through the existential present of being still conditionally structured a little longer and not international prizes or tenured positions being in that context the most pressing of concerns.

Even though, that is, such observers as Berkes and others who study ‘indigenous knowledge’ and ‘traditional ecological knowledge’ (many of whom I admire for their work, I should note) are proponents of its holistic simultaneity, they do it no favor in distinguishing it as a ‘fuzzy logic’ because of how, as Ardener (1989:173; see also Lakoff and Johnson, 2003; Abrams, 1997) states quite perspicaciously, “our worlds are inescapably contaminated with language.” What this means, of course, is that language is both a constituent *and* a constructive aspect of conceptual reality for the human-animal. As such, a holistic logic very distinct from that of Enlightenment reason’s linearity and denoted as ‘fuzzy’ becomes marked and thereby subjugated to the same circularly distorting frame by which that tradition’s “arbitrary fixings” of symbols as “neither-idealist-nor-materialist” (Ardener 1989:184) become, as with *the environment*, dense and rigid and reified as actually existing sequentially and somehow in an object-world that is somehow separate from the physical reality of entanglement that is that world<sup>xxxv</sup>. In being thusly legitimized, therefore, as researchers like Agrawal (1995) and Nadasdy (1999) importantly argue, those knowledges that are termed ‘fuzzy’ are actually even more insidiously delegitimized in terms of their own schematic constellations of holistic simultaneity as they are drawn into that distorted frame of linear sequentiality within which they are often marked thus as ‘fuzzy’ and considered as merely another type of data, superficially assuaging contemporary sensibilities while carrying on with the perfunctory and uncritical acceptance of the distortions of the Enlightenment frame.

Put differently (and more experientially), encamped at 4,850 meters in early October, I was confident and calmed in knowing that our yak wrangler Nyima knew, even though I am rather confident that he did not know—despite his considerable intelligence and wit—what specific combination of physical force and phenomenon must converge within the nonlinear dynamics of atmospheric science for snow to form and fall or for wind to blow witheringly, that based on various observations he had made of the day and into twilight there would be neither snow nor more than a whisper of wind despite the temperature plummeting with the setting of the sun at that high camp below the pass at Numala Bhanjyang (5,238 meters).

Through his quite apposite frame, that is, without having precisely calibrated instrumentation or training in the voodoo fetishism of inferential statistical analyses, he was quite competent in analyzing and hypothesizing, though he certainly did not schematize it as doing so, how the weather and wind would break that evening, which close to 5,000 meters on the cusp of winter was far more consequential within the existential present than any ‘scientific’ reasoning could want to be. Indeed, this is my concern with a recent analysis of Mongolian pastoralists by Marin (2010), whose excellent analysis of the ‘contributions’ of nomadic herders’ observations in analyzing climate change, though it does validate the knowledge of local pastoralists through their own synergistic awareness in experience and proficiency, still couches that knowledge without due contestation within the circular reasoning of Western science, thereby delegitimizing pastoral knowledge at a root level even as it validates such knowledge at a more superficial level by considering it solely within the sequentiality of the linear frame.

Even though it differs at its root from the linear sequentiality of Enlightenment methodological experience, such emphasis on logic grounded in the first order does not imply that the Dolpo-pa through such a practical frame of holistic simultaneity cannot or do not see

physical causality over space and time (see Huntington 2000; Preston 2002; Turner 2005). They certainly do. The point is that they schematize such physical causality through a frame that is largely grounded in diachronic material experience that loops recursively back through the conceptual proficiency of their holistic awareness, the former continually confirming, contesting or altering the latter in being shared and transmitted both individually and culturally with each subsequent looping back into further material experience through time-space. For example, to the survey statement, “The amount of snow and ice in the mountains directly affects how much water will be available for use in the village,” 77.8 percent (mean = 4.52) of respondents answered “strongly agree” and 9.3 percent answered “agree,” with only 5.6 percent answering “strongly disagree” and 1.9 percent answering “disagree.” The same percentage (5.6 percent) that strongly disagreed answered that they did not know.

Even more interesting is that the same percentage of informants (87 percent) who either agreed or strongly agreed that the amount of snow and ice in the mountains directly affects Rigmo’s water supply also said that Phoksumdo Lake is too old to be affected by changes to snow and ice in the mountains<sup>xxxvi</sup>. The ostensible contradiction in this crosstab (Table 10) is not (I caution those who are unable to readily defamiliarize themselves from the observer’s gaze)

**Table 10. The amount of snow and ice in the mountains directly affects amount of water available in village \* Phoksumdo Lake is too old to be affected by changes in snow and ice in the mountains**

		PL too old to be affected by changes in snow		Total
		True	False	
Amount of snow and ice in mountains directly affects amount of water available in village	Strongly Disagree	3	0	3
	Disagree	0	1	1
	Neither/Nor	3	0	3
	Agree	3	2	5
	Strongly Agree	38	4	42
Total		47	7	54

actually so, however, as such physical variables are framed not through an observer's but through a practical logic of synergistic awareness scaled biometabolically to ecological processes (see Sillitoe 2002; Smith and Wintherhalder 1992)<sup>xxxvii</sup>. Through such a logic, that conceptual sequentiality that is so adroit at observing such physical causality has neither been operationalized nor ever been required in operation in order for the phenotypic human-animals that are the Dolpo-pa who dwell within that domain to thrive in surmounting the known range of uncertainty expected of forces and magnitudes after a millennia-long entanglement there.

### **SYNERGISTIC AWARENESS AND THE PHYSICAL POSSIBILITIES OF CHANGE**

Change at the biometabolic scale of ecological processes, at which all perceptible change occurs to those human-animal Dolpo-pa who are themselves fully physically entangled as conditionally-structured surfaces through that scale, becomes, thereby, not what change is physically possible in the shifting and cleaving of force and magnitude at that scale but how the synergy between material experience and conceptual proficiency frames what is physically possible of and to change at the undifferentiated scale of the conceptual. Differences in how snow and ice are temporally schematized and constellated within the model provide a telling example.

Snow, in this way, is not only material but is also ephemeral, falling in the cold seasons (and making them cold) and melting away with each warm season (thus making them warm). Glaciers, on the other hand, are like Phoksumdo Lake believed to be too old and too big to ever melt away completely; such an eventuality has never happened before so that it could ever happen in the future is considered inconceivable. As Tenzing in Rigmo affirmed:

My opinion is that glaciers could not disappear completely. I think we should take you up into the mountains and show you how much glaciers we do have. Every year I go to China and I know every one of the glaciers up there well, [and they] have not melted yet.

Concurring with Tenzing, 50 percent (mean = 2.74) of survey respondents on a 5-point scale “strongly disagree” or “disagree” (38.9 percent and 11.1 percent, respectively) that “The glaciers in the mountains could melt completely and not return ever,” while 13 percent did not know, and 37 percent answered “agree” or “strongly agree” (11.1 percent and 25.9 percent, respectively). Tellingly, a crosstab (Table 11) of this statement and education level reveals that a high

**Table 11. The glaciers could melt completely and never return \* Formal education**

		Formal education												Total
		0	2	3	4	5	6	7	8	10	12	15	17	
the glaciers could melt completely and never return	Strongly Disagree	16	0	1	0	3	0	0	0	1	0	0	0	21
	Disagree	5	0	0	0	0	0	0	0	0	1	0	0	6
	Neither/Nor	3	1	1	0	0	0	0	2	0	0	0	0	7
	Agree	0	0	0	1	1	1	0	0	2	0	1	0	6
	Strongly Agree	6	0	0	1	1	0	2	2	1	0	0	1	14
Total		30	1	2	2	5	1	2	4	4	1	1	1	54

preponderance of those 50 percent who “disagree” with the statement have no formal education (21 of 27 respondents, or 78 percent), 16 of whom “strongly disagree” with the statement. Three individuals with no formal education answered that they did not know, while only 11 percent with no formal education answered that they “strongly agree.” In contrast, 65 percent of respondents said it was “false” that “The snow in the high mountains could not disappear permanently.” A crosstab (Table 12) of this statement with education levels was also revealing, with 63 percent (22 respondents) of that 65 percent (35 respondents) of the total having no

**Table 12. The snow in the mountains can't disappear permanently \* Formal Education**

		Formal Education												Total
		0	2	3	4	5	6	7	8	10	12	15	17	
The snow/ice in the mountains can't disappear permanently	True	8	1	1	1	4	1	0	1	2	0	0	0	19
	False	22	0	1	1	1	0	2	3	2	1	1	1	35
Total		30	1	2	2	5	1	2	4	4	1	1	1	54

formal education. On the other hand, 8 of the 19 respondents who claimed this statement was “true” had five or more years of formal education. The contrast between these two statements is especially interesting because it suggests the distinction informants make between the physical changes possible of snow and of glacial ice, which are framed very differently through the Dolpo model.

More compelling, however, is what further cross tabulation reveals of these frequencies (Table 13). For instance, for the survey statement on the effects of the amount of snow and ice in the mountains on Rigmo’s water supply and the statement on snow in the mountains completely disappearing, a crosstab indicates that 25 respondents both “strongly agree” with the former statement and believe that the snow in the Mountains can disappear permanently. Only 17 of the

**Table 13. The snow in mountains can't disappear permanently \* The amount of snow and ice in mountains directly affects amount of water available in Rigmo**

		The amount of snow/ice in the mountains directly affects the amount of water available in village					Total
		Strongly Disagree	Disagree	Neither/Nor	Agree	Strongly Agree	
The snow/ice in the mountains can't disappear permanently	True	0	0	0	2	17	19
	False	3	1	3	3	25	35
Total		3	1	3	5	42	54

total number of respondents “strongly agree” with the former statement and do not believe the latter. No more than three respondents answered in any other way, suggesting an interesting extreme in opinions in Rigmo that further study may reveal epistemologically reflects the social changes so swiftly occurring now in Dolpo. In contrast, when the second statement in the crosstab is replaced by the statement about the glaciers melting away and never returning, again 17 respondents “strongly agree” with the former statement but those 17 respondents also “strongly disagree” that the glaciers could not melt completely (Table 14). Indeed, for both crosstabs 42 respondents “strongly agree” that the snow and ice in the mountains directly affect

Table 14. The glaciers could melt completely and never return * The amount of snow and ice in the mountains directly affects the amount of water available in Rigmo							
		The amount of snow and ice in mountains directly affects amount of water available in village					Total
		Strongly Disagree	Disagree	Neither/Nor	Agree	Strongly Agree	
The glaciers could melt completely and never return	Strongly Disagree	0	0	1	3	17	21
	Disagree	1	1	0	0	4	6
	Neither/ Nor	1	0	1	0	5	7
	Agree	0	0	0	2	4	6
	Strongly Agree	1	0	1	0	12	14
Total		3	1	3	5	42	54

the village water supply but only 14 “strongly agree” that the glaciers could melt away completely, of which 12 are a part of the former group of respondents. Spread otherwise evenly with five answering that they did not know, 13 other respondents who answered that they “strongly agree” about the village water supply answered with middle values to the statement on the glaciers melting. In this crosstab, only one other value had three respondents who answered that they “agree” that the snow and ice in the mountains affect the village water supply but “strongly disagree” the glaciers could melt completely.

Further supporting this interpretation of how the Dolpo-pa operationalize their model of entanglement is the response to one further survey statement that is very revealing. To a query, “If the spring from which we get our water stops flowing, we can *always* get water from the river,” which intimates the conceptual causality of the previous several statements but at the immediate scale of material experience, 81.5 percent of respondents answered “true.” A crosstab comparing snow and ice in the mountains’ effect on the water supply in Rigmo with the last statement about the river *always* being available for water even if the spring stops flowing is telling (Table 15): Of the 44 respondents who said the latter is true, 88.6 percent also “strongly agree” or “agree” (36 and 3 respondents, respectively) with the former. As the representative response of the 30-year-old trader in



<b>Table 15. The amount of snow and ice in mountains directly affects amount of water available in Rigmo * If there is no spring, we can always get water from the river</b>				
		No spring, we have the river		Total
		True	False	
The amount of snow and ice in mountains directly affects amount of water available in village	Strongly Disagree	3	0	3
	Disagree	0	1	1
	Neither/Nor	2	1	3
	Agree	3	2	5
	Strongly Disagree	36	6	42
Total		44	10	54

Rigmo intimates:

Whether the glaciers melt completely or not does not matter. The river will always remain the same with no change.

Such preponderance is striking exactly because of its intimation of the tradeoffs inherent to the human-animal's evolutionarily emergent conceptual proficiency in modeling material experience. In framing such experience, what is known to the framer excludes by definition both what has been reckoned negligible of that experience and, importantly, what is unknown of the physical domain (at any scale) with which that experience is entangled inextricably. Known uncertainty as induced through synergistic awareness, that is, becomes the focus of a further looping of synergistic awareness, naturalization of such arbitrarily emergent synergistic awareness providing the phenotypic advantage that assures genetic propagation in optimizing metabolism within that entangled domain. The human-animal framer, however, to remain apace with the entangled domain as a surface conditionally structured against the physical forces and magnitudes arrayed against it at the scale of ecological processes must continually operationalize those schematic constellations that enable coherent action within the physical reality of the asymmetries of the object-world. The Dolpo-pa do this, and the logic of their cultural model is reflected in their proficiency after such extended engagement in dwelling so synergistically as a distinct and unique phenotype within that high mountain domain of entanglement<sup>xxxviii</sup>.

Exhibiting this contrast rather compellingly is the frame through which Magli Budha, the twenty-one year old from Rigmo who, having been away from Dolpo for four years and only having recently returned to visit her family after graduating from nursing school in Kathmandu, can conceptualize both that the snows and glaciers could melt completely if warming in the mountains continues to increase and that the river would eventually dry up if those water sources never returned. In our English interview, however, despite these quite ‘rational’ causal schemas, Magli Budha, though trained in scientific practice grounded in methodologies derived directly from that distorting Enlightenment circularity so often framed as reason, continues to model the world by her material experience as culturally Dolpo-pa, intimating as she did that the water from the rivers that feed into and out of sacred Phoksumdo Lake is not the same as those sacred waters that constitute the lake itself:

- G: So, the water that’s in the lake, the water in the lake, where does it come from?  
 MB: Water? Water is, uh, mixed . . . [*Nepali to translator for clarification*]. You mean about this big river or lake?  
 G: That lake, where does the water in the lake come from? What’s the source of the water in the lake?  
 MB: Regarding . . . I have, I heard about one history. Um [*Nepali to self*], Guru Rinpoche, he came here, and he destroyed one, uh, um . . .  
 G: Demoness.  
 MB: Yeah, one woman demoness [G: uh-huh], and I have heard, like, um before we don’t have this place [. . .] houses in place where lake is right now.  
 G: Yeah.  
 MB: So, he, he destroy one demoness, and he make the lake. He, uh, he, uh, he made the lake. I have heard these things, but . . .  
 G: That’s . . . OK, I’ve heard the story, too, but I’m wondering . . . we are staying at the office right at the mouth of the river, and when we cross the bridge, the water from the lake is flowing into the river, all right, and it flows down the river [MB: . . .], yeah, so, does the lake ever go down? Does new water ever come into the lake?  
 MB: The, the, the big river, you know, the one river, small river, is coming from this side [*points to far side of the lake*], and one’s coming from this side [*points to near side of the lake*], so it didn’t makes . . . and, um, th-, that water is running here.  
 G: Ah, OK.  
 MB: That’s, uh . . . this river is . . . I don’t think this river is the water of lake.

In Magli Boudha’s operationalization of the constellated schemas of the Dolpo-pa, Phoksumdo Lake is described as not being constituted of those waters of the rivers that are fed by the glaciers and snows in the high mountains and that are used for everyday practice such as drinking,

cooking, laundry, and making *chang* (barely beer). Instead, the lake is constituted of the practical-sacred waters of the lake's mythical formation. As such, its waters are schematized as extending well beyond the uncertainties of the existential present and into the karmic and cosmological realms that provide such solace in the face of such uncertainty. As such, regardless of what future threatens the glaciers and the rivers and the springs (and those softer biometabolically-scaled surfaces that depend on those shifting, cleaving surface asymmetries) face, Phoksumdo Lake is modeled culturally as always remaining unaffected by the uncertainties of change; it is, that is, schematized according to a material logic that has never experienced nor conceptualized the lake's not being there in its unbearable and lifeless turquoise hue and so frames its not being there as an impossibility within the known metabolisms of ongoing ecological processes.

#### **INVERSE PROPORTIONS: CULTURAL DISENTANGLEMENT & EXISTENTIAL DISSONANCE**

The key point here is that even though a sizeable percentage of informants in Dolpo do schematize causal connections between the glaciers and snows in the mountains and the water supply in Rigmo, nearly 10 percent of them do not see such connections. Even many of those that do see the connection do not schematize any possible repercussions of those observations of shrinking glaciers or less snows on their lives and livelihoods because the emergent synergy of their extended material experience and conceptual proficiency are not and never have been operationalized in such a way as to adduce any repercussions of such causality within the domain of their entangled experience. The snow and ice in the mountains have supplied without interruption the river with water for as long as anyone (who has noticed the connection) can remember and even longer. Change of this sort is therefore framed as an impossibility, which is

through that experiential model as logical an inference as the no less constructed logic through another, increasingly hegemonic frame of conceptual distortion that infers one distinct and rather soft surface as separate from all the others at the biometabolic scale of ecological processes of some reification labeled *the environment*.

The intersection of these two frames in Dolpo, as in other domains peripheral to the core areas from which such hegemonic frames first emerged in their present form and have since spread as a basis of social organization (Ross *et al.* 2010:70; Hornborg 2007:9), is, however, increasingly contesting the logic of the biometabolic frame of the Dolpo-pa even as it further empowers as ‘truth’ the illusions of the technometabolic frame of growth and industry. At the same time, very real and technometabolically-scaled phenological change, a direct outcome of those latter ideas' cognitive distortion of the physical root of all such frames, is becoming more readily observable with the “*social transfer of entropy*” that is the first-order physical root of what is actually distorted by such second-order circular framing as economic “growth” and international “development” (Hornborg 2001:11). The resulting spaces of uncertainty are unlike any known in Dolpo since at least the first human-animals migrated into the area at least a thousand years ago and began to experience and model the physical forces and magnitudes from which and of which the Dolpo-pa’s variant of Tibetan culture has emerged and thriven from that time. A discussion of the present parameters and likely intensification of this uncertainty based on acquiescence to change adduced in the previous chapter informs the second part of this chapter, to which this discussion now turns.

## **PART II – WINTER LIGHT: PHENOLOGICAL UNCERTAINTY & CHANGE**

### **INTRODUCTION: INDICATORS OF AVERAGE WEATHER (I.E. CLIMATE) CHANGE**

All of my informants have noticed some changes in weather patterns in Dolpo over the past many years, and most have noticed significant change. Gotza, the former schoolmaster and community leader in Namdo in Upper Dolpo, for example, said that he knows a little about climate change with “the kind of knowledge that is with scientists” that he said the people of Dolpo don’t know much about, but that he also has the synergistic awareness of his own material experience and conceptual proficiency. Indeed, he stressed that he has both kinds of knowledge, saying:

Ten years ago not much heat was here but now there is much heat . . . what’s this? This is change. Snowy mountains are vanishing, this is change. This change is called climate change. I haven’t learned that by any medium. Once the [Shey Phoksumdo] national park [officials] had a one day class, and I’ve learnt in that program but also in seeing the changing environment in my experience from childhood until now. Crossing this river you can see Norbu Himal [mountain]. It had always been covered with snows; we couldn’t see any rocks or soil at all. But now all the snow has gone, and it is only bare rocks and soil. Twelve years ago, I think, from Karmal Lake the Himal was seen but now four years ago when I went, there was almost no [snow in the] Himal. Here, in July it would always rain or snow would fall. But nowadays there is little rain sometimes, and sometimes no rain at all. This place used to be cold but now it’s hot. All of these changes are called climate change in my experience.

As noted above, because individuals experience temperature differently, therefore, some divergence in informant responses to queries about temperature is expected, especially to a question about material experience vaguely framed about the past, as with the 70-year-old man from Rigmo who responded to a question about temperature change:

No, no, it’s quite similar with the temperature of the past.

The 30-year-old trader who claimed that the river will always be there regardless of melting snows or glaciers concurred, claiming:

Warmer? No, no, it’s quite similar.

Survey data belie such responses, however. To the statement, “In general, it is warmer here now than it used to be,” for instance, 85.2 percent of respondents answered “true,” while the same

percentage agreed on a 5-point scale to a similar statement further on in the survey: “It is generally warmer here now than it used to be” (72.2 percent “strongly agreed” and 13 percent “agreed”; mean = 4.35). To this statement, 3.7 percent did not know and only 11.1 percent answered “strongly disagree.”

Compellingly, informant observations of both phenological and sociological indicators of temperature change such as those referred to by Gotza, which suggest the material orientation to first-order physical reality of the Dolpo model of entanglement, especially among those respondents who denied any change to temperature in interviews, further belie this divergence. For example, both the 70-year-old and the 30-year-old who claimed above that there is no temperature difference from the past agreed that there is regularly less snow in the mountains than there used to be. As the 30-year-old trader stated:

This is true. These days we get less snow and there is no more snow in the mountains. Snow seldom falls and it melts easily.

The 63-year-old grandfather in Rigmo spoke similarly of this pattern:

In the past when snow falls, we used to stay in the home for 7-8 days as we were not able to get out in the snow. But now the snow melts so quickly, within 2-3 days. And there are no more snows in the mountains.

The 56-year-old woman in Rigmo spoke similarly, connecting material experience with conceptual framing in saying:

Before we used to have heavy snowfalls that remain on the mountains almost all year, and we used to consider it a good omen, but now there are no longer snows in the mountains.

Survey data supports these responses, which were echoed by numerous informants: 88.9 percent said, for instance, that it is “true” that “The mountains no longer have as much snow as they once did,” while to the statement, “There is less snow in the high mountains than there was in years past,” 85.2 percent (mean = 4.69) of respondents answered “strongly agree” and 9.3 percent of respondents answered “agree” on a 5-point scale. Only three respondents (5.6 percent) answered “strongly disagree” and no one answered “disagree.”

## KNOWN UNCERTAINTY AND THE SHIFTING, CLEAVING SURFACES OF CHANGE

Changes in expected snow frequency and intensity as well as in snowpack are having especially significant impacts on known uncertainties such as avalanches in Dolpo. The 63-year-old lama at Shey Gompa in Upper Dolpo who has caravanned with yak since he was a boy had a ruinous experience with such changes the year previous to this study, for example, stating in our interview:

When I was young, huge snowfalls occurred all the time, but for the last 10-12 years not much snowfall has occurred. I thought huge snowfalls would not occur again, but it happened . . . a bigger snowfall occurred in the past year. It was not abnormal in my experience, it was normal but I used to anticipate the avalanches and used to save my yaks. But this time unfortunately I didn't do that . . . I had 12 yaks but lost 11 in an avalanche last year. I tried to save them, but I didn't anticipate . . . I had to save myself.

The 70-year-old man from Rigmo who claimed that there has been no temperature change has definitely noticed a change in the pattern of avalanche occurrence, stating:

In the past, we used to get avalanches only after heavy snowfalls, but now the number of avalanches has increased with slight snowfalls.

The 63-year-old woman from Rigmo also commented on a change to avalanche patterns, stating:

I think, yes, avalanches have become more common in the past few years. Now we get avalanches after slight snowfalls.

The 38-year-old Geshe at the gompa on the shores of Phoksumdo Lake made the same claim:

Avalanches have not become more but more frequent with less snowfall. In the past, we used to get avalanches after heavy snowfalls and now when we get little snow we get avalanches.

Frequencies from structured interviews support this altered schematic constellation that avalanches are becoming both more common and more difficult to predict. For the statement, "Avalanches have become more common in the last few years than they were in the past," for example, 74.1 percent of respondents answered "true," while for the statement, "It is becoming more difficult to predict when avalanches will occur," 77.8 percent (mean = 4.57) and 9.3 percent of respondents answered "strongly agree" and "agree," respectively, on a 5-point scale.

Only one respondent answered “strongly disagree” and two respondents answered “disagree.” To this statement, 7.4 percent of respondents answered that they did not know or were not sure.

Possibly the most significant problem with such alterations in the nature of such hazards is that not everyone models them the same way or even agrees that they have occurred, which certainly impinges on the synergy between material experience and the acquisition and transmission of conceptual proficiency within such an entangled domain. Such impingement significantly increases uncertainty, both experientially and culturally. For example, the 30-year-old trader from Rigmo who denied any change in temperature despite the currency of this opinion and the phenological indicators that belie his own belief also claimed:

No, no, this is not true. Avalanches occur after heavy snowfalls now as in the past.

Notably, the trader’s response does not constellate the most current schemas of avalanches and slight snowfalls that other Dolpo-pa have begun to model, a knowledge inconsistency that demonstrates how an alteration of material experience can significantly increase not only overall psycho-physiological patterns of cognitive stress (Dressler and Bindon 2000) but can also effect immediate existential uncertainties for an individual who is not consonant with the current schematic constellations of change within an ecosystem. The increased material threat to life and livelihood resulting from this altered physical pattern is obvious: If this model of avalanche threat is not operationalized in conformance to this newly arisen physical trend that some like the 30-year-old trader have no experience or proficiency with, the possibility of substantial and immediate existential consequences increases significantly.

Individuals like the trader, that is, cannot forefend against hazards that have not been schematized within their most current iterations of the model. To such individuals, events like an avalanche after a light snowfall are outside the bounds of logical possibility as possibility is currently framed regardless of the changed physical pattern. In this way, basing decisions on



prior experience and outdated models leaves them increasingly blind to the physical realities of the existential present. Decreased consonance with such a changed model in such a place as Dolpo not only leads to increased psycho-physiological stress, as Dressler and Bindon have rightly argued, however, but it also leads to a progressively more invidious existential threat to the material substructure that is the first-order root of that cognitive stress and physical response. This existential threat is far more precarious, as even considerable cognitive stress is of little consequence to a conditionally-structured surface that is no longer conditional but has made the existential leap into the dissipative and always outstretched arms of entropy. All life dies, that is, and humans die more readily when their evolutionarily emergent selective advantage is usurped by such an *existential dissonance*, a concept to be explained in more detail in the conclusion.

Similarly, precipitation in the form of rain, as Gotza intimated above, no longer conforms to schematized expectations of the majority of informants in Dolpo, also increasing the existential threat. Although the Tarap Valley has a traditional system of river-fed irrigation, for example, most of Dolpo's fields are rain-irrigated, which means that they are highly susceptible to weather variability, which is especially consequential because cultivation in Dolpo can typically provide only enough food for three months of subsistence every year (Field Notes; Bauer 2004:24). Gotza commented specifically on fluctuations in rainfall, stating:

There used to be more or less rain, and it was regular in summer but these days, either there is no rain or there is unusual rain.

Interestingly, the Geshe, who claimed earlier in our discussion that great lamas can control local weather events like rain, was unsure in his response to the same question about expectations of rain, saying:

Prediction is obviously hard and rain patterns fluctuate very much. Sometimes there is more rain, sometimes no more.

Tenzing made the most telling comment, however, echoing problems several individuals spoke of during informal conversations throughout Upper Dolpo:

It is true that rain has become less predictable. We had experience with this last year when there was much too little rain in the growing season, which directly harmed the crops and people's lives. But this year we had heavy rainfall which also did affect our houses. We had leaking problems, difficulty in collecting timber, and our crops did not ripen properly.

Survey data supports this emerging model of rain unpredictability, especially in terms of cultivation. For example, 92.6 percent of respondents responded affirmatively (85.2 percent “strongly agree” and 7.4 percent “agree”; mean = 4.74) to the statement, “It is more difficult to predict how much rain there will be in the growing season than it used to be.” Only three respondents answered “disagree” and only one answered “strongly disagree.” Indeed, cultivation patterns are themselves commonly referenced phenological indicators of climate change. For example, changes in the dates of sowing and harvesting are often used to signify and track changes in statistical climates. In Rigmo, structured interviewing indicates that a slim majority of respondents agree with the statement, “Crops ripen earlier now than they used to,” with 48.1 percent answering “strongly agree” (mean = 3.33) and 7.4 percent answering “agree” on a 5-point scale. To this statement, 33.3 percent of respondents answered “strongly disagree” and 3.7 percent answered “disagree,” with the same percentage as the latter saying they did not know.

An even more incontestable indicator of significant change in Dolpo than the altering schema of crop ripening, however, is that new crops have only over the past several years become cultivable in Dolpo. Numerous respondents claimed that various vegetables are now commonly grown, including cauliflower, lettuces, green onions, carrots and radishes. Gotza from Namdo said that they had been growing such vegetables for 10-12 years, emphasizing that the heartier ones like carrots could be grown first followed by the leafier greens and scallions a few years later, a pattern certainly indicative of ongoing physical change in Dolpo. Similarly, Kedar,

the founder and principle of the Crystal Mountain School in Tarap who many years ago introduced the simple greenhouses that now dot the valley, affirmed that he had tried to cultivate lettuces and carrots outside the greenhouse several times a decade or so earlier but because of the harshness of the climate that they would not grow. Now, however, they regularly grow lettuce at over 4,200 meters<sup>xxxix</sup>, which if not so portentously disturbing would be astounding. As the Geshe near Phoksumdo Lake claimed:

Yes, yes, the temperature now is a bit warmer than in the past. Now, we can see various kinds of green vegetables available everywhere. This is because it is getting warmer here than it used to be. Yes, it's generally warmer

A 49-year-old trader in Rigmo made a similar deduction:

It is warmer here than before, that's why we are getting various kinds of vegetables.

Structured interview data confirm these semi-structured interview (and observational) results. To the statement, “New kinds of vegetables can be grown here now because it is warmer,” for example, the only responses on a 5-point scale were “strongly agree” (96.3 percent) and “agree” (3.7 percent), a noteworthy consensus based on experience. Also noteworthy, however, despite the benefits of this new availability of produce, is the response to a more conceptual statement—“My expectations of the weather in each season have become less reliable over the last several years”—that garnered a similar majority, with 94.4 percent of respondents answering that this was a “true” statement in their experience. A crosstab of these two statements indicates the true extent of the preponderance, with 49 (92.5 percent) of those respondents who “strongly agree” that new vegetables can be grown because it is warmer also claiming that it is “true” that their expectations of the weather in each season are less reliable than they were in the past. Needless to say, the short-term benefit intimated by the former statement in conjunction with the long-term hardship and anguish adumbrated by the latter is foreboding.

## THE PLEASANT SHOCKS OF SHORT-TERM CHANGE . . . OR WINTER LIGHT IS LOVELY

Many of those who have observed such phenological changes also expressed shock at how such changes are impacting their daily lives. For instance, many people are both pleased and surprised by the clothing they now wear in the colder months compared to what they used to wear, even as their traditional home construction and heating systems are unchanged. Tserap at Samling Gompa (4,120 meters), for instance, provided a demonstration during our interview, putting on his traditional thick yak wool and hide *lokpa* (overcoat) and taking out his *sumpa* (woolen boots), saying that he only ever sleeps in the former and never wears the latter anymore. Instead, he now only wears knockoff brand name hiking boots and jackets made in India or Kathmandu and sold now in Dolpo and that are suitable for the warmer conditions even in the winter. The fact is that life in the frozen valleys of Upper Dolpo would have been inconceivable just a few years ago without the warmth provided by material artifacts like *lokpa* and *sumpa*.

Even though cheap, factory-made clothes are now sufficient for warmth in Dolpo, a material alteration that loops back cognitively to reinforce alterations to how expectations of winter temperature and weather are currently being schematized, such newly constellated expectations are consistently accompanied by increased ecological uncertainty as a part of those altered schemas. This alteration was illustrated above with the experience of the older lama at Shey Gompa who, in a season when snow and subsequent avalanche activity was once the primary expectation, lost over 90 percent of his herd to what had become an unexpected snow event. At the community-run campsite in Saldang, which had been destroyed by what was referred to as almost inconceivable flooding only two weeks prior to our overnight there, the attendee also put on the *lokpa* that he no longer wears to show materially what a representation

in words simply could not tell of what life in Saldang in late September once looked like only a few years ago.

Such experiences with the altogether positively framed but no less shocking effects of increased warming are also common in Rigmo, which lies at the frontier of Upper Dolpo. The incredulous 70-year-old man, for example, concurred with the experiences of the others above, saying in our interview:

That is true. I used to wear heavy woolen clothes and woolen boots, which were very warm, but now new clothes like nylon trousers are fine.

Similarly, the Geshe near Phoksumdo Lake claimed:

Maybe the temperature in winter is warmer now than in the past because people wear less clothing now. I also use less fuel for fire now but . . . however, the reason is, I think, due to the fact that it is generally warmer now.

The 63-year-old woman in Rigmo commented similarly:

We don't use as much fuel as we did before.

Interestingly, the 30-year-old trader who does not think it is warmer also says that people wear more clothes in the colder months now than in the past, but he importantly distinguished between the types of clothes that are worn:

No, no, we wear more clothes than we used to in the past. It is true that new clothing is not like woolen clothes, but as compared to the past, we wear more clothes . . . now.

Structured interview data from Rigmo also reflects these changes in experience in terms of clothing and fuel in colder months; of course, each person is different in their susceptibility to cold, so variance, as expected, is observed in the results. For example, to the statement, "I have to wear less clothing in the colder months than I used to," 61.1 percent (mean = 3.89) of respondents answered "strongly agree" and 11.1 percent answered "agree" on a 5-point scale, with 20.4 percent and 3.7 percent answering "strongly disagree" and "disagree," respectively. The same percentage as the latter response answered that they did not know. Similar results were

recorded to the statement, “I have to wear less clothing in the colder months than I used to,” with 68.8 percent (mean = 4.04) of respondents answering “strongly agree” and 7.4 percent answering “agree” on the same scale. To this statement, 18.5 percent and 3.7 percent answered “strongly disagree” and “disagree,” respectively.

### **PART III – THE SILENCE, SCALED TECHNO-DIABOLICALLY**

#### **TEARING THE TOPS OFF MOUNTAINS: THE BALLAD OF TENZING’S PLOW**

Such a preponderance on indicators of change as framed in terms of the synergy between material experience and conceptual proficiency is also quite worrying, however. For a significant alteration to a model to become current within a population, each individual within that population must either have experience of those physical patterns that lead to such change or must have proficiency in schematizing and sharing and transmitting those schemas of that modeled change, both of which require an extended engagement within and practical experience of an entangled domain. Kempton (2001:56) supports this proposition in arguing from the evidence of ethnomedical knowledge that entangled cultures like the Dolpo-pa, who “have passed centuries interacting in similar ways with the same environment” and whose members widely share and transmit specific sets of knowledge, more likely acquire such knowledge through incremental discoveries of trial and error over long periods and mimetic transmission through generations in holistic simultaneity than through “occasional great discoverer[s]” who come along every couple of hundred years in linear sequentiality, standing, as it were, on the shoulders of their epistemological predecessors. Such phenological changes as are being experienced by the Dolpo-pa are, however, though exhibiting effects at the scale of ecological processes, not emanating from that scale but from the technometabolic scale of industrial

processes, which produces physical forces and magnitudes that the Dolpo-pa have neither experience with nor proficiency or understanding of, a configurative divergence from that calculus of model alteration that is of tremendous and heretofore inadequately appreciated consequence, especially because of the rapidity of the change.

This point is most markedly supported by Tenzing's actions and responses while we talked on a fine, abnormally warm—though, according to several respondents, increasingly normal—day in mid-October in Rigmo. His legs were crossed on a thin, dusty cushion in the hoof-packed dirt beside his house, a few tools scattered orderly nearby, a smooth-surfaced stone for working wood surrounded by shavings on the ground in front of him. The unfinished plow handle he was hand-planing lay across his bent knee. Still pointing in illustration to the rather inconsequential crest reaching an elevation of nearly 4,000 meters just west of the village, the towering tops of the snow-dusted southern peaks of the Kanjiroba Range reaching 5,500 meters and more in the distance behind, I had only a moment before informed him that there are machines in the world powerful enough to tear the tops off mountains. He looked up from his work, smiled and traced the extension of my hand with his dark, narrow eyes, settling his gaze somewhere out there for a moment. Then, looking up into the aching blue of the high Himalayan sky, he shook his head, incredulous. At sixty-three years of age, Tenzing had bested the life expectancy in Dolpo by thirteen years (Bauer 2004:3), and his eyes were alive, intelligent, a lifetime of devotion to the ancient Bon faith and attention to the patterns of subsistence through the continuity of the seasons in these mountains entangling with the sly smile spread over the creases of his smooth face in the moments before he responded, “it's not possible.”

I continued querying him about his understanding of the force and magnitude of the technometabolic scale, asking if he had ever heard of a factory or knew what types of things

factories produce. He responded: “Yes, I have heard of factories, but I have no idea what they produce.” I then explained that there are factories in the world that are bigger than the entire village of Rigmo and that quite realistically burn more fuel in a day than the entire village combined burns in a year. He remained incredulous, however, hesitant to call me out as a liar but supposing no less that I was telling some form of tall tale. Focusing in on the plow handle overlying his knee, I then asked how many plows he thought he could produce in a day. He looked around at his work area for a moment, then looked back at me and responded, “Maybe two or three.” I followed up without hesitation, asking “How many plows do you think a factory might be able to produce in a day?” His expression immediately changed, growing uncertain as he shook his head to indicate that he did not know. I responded not in triumph, by any means, but with the earnestness of a bearer of bad news, saying that although I did not know an exact figure, I knew that the answer would be somewhere between one hundred and one thousand times that amount. Listening to the translation of my response, he continued shaking his head, his expression remaining saturated in that same incredulous uncertainty.

Portentously, his never having seen or really well-understood the forces and magnitudes possible at that scale of production, Tenzing’s incredulity upon learning of the power of industry with which he has no experience carries over to his attitude about those phenological changes that he as most informants in Dolpo (expatiated above in Part II of this chapter) sees now throughout Dolpo. In truth, only a small number of Dolpo-pa, even among those few who have lived in Kathmandu or even traveled abroad, have experience with such power and even among those individuals who do overall understanding of it is quite limited<sup>x1</sup>. What this means, of course, is that the Dolpo-pa in general have not endured the extended engagement with industrial power necessary to provide them with the awareness to frame the causal link between the



changes they see and such power at that dark, diabolic scale with which they have so little experience. As such, the majority of Dolpo-pa informants are now saddled with an abiding sense of befuddlement similar to that expressed by the 49-year-old trader and harvester of *yartse gumbu* in Rigmo who stated:

It's true that the temperature now is much warmer than before. We hardly see snow in the mountains, but we just don't know why.

Further evidence of this sense derives from the intriguing symmetry of response to an illustrative survey statement: "Industries in India, China and the USA can affect the water supply in Rigmo." Response on a 5-point scale to this statement was split precisely in thirds, with 18 individuals answering that they do not know, 18 individuals answering "strongly agree" or "agree," and 18 individuals answering "strongly disagree" or "disagree." The only variance was that one more individual answered "strongly disagree" (15) than answered "strongly agree" (14).

Even in (or because of) their befuddlement, however, most informants also remain incredulous to the possibility that such a causal link could exist between the changes they see in local weather patterns, the increased phenological uncertainties within Dolpo, and that technometabolic scale beyond the entanglement of which they know so little. Indeed, reflective of the responses from the first part of this chapter in which numerous Dolpo-pa informants indicated a schema of the limits of human agency at a global scale, such a linked interconnection is contrary to one of the most basic components of the Dolpo-pa's cultural model of entanglement as identified in Chapter 4 of this thesis: Within the first-order physical reality of material experience, humans are arrayed asymmetrically relative to the forces and magnitudes possible of such surface hazards at the biometabolic scale of ecological processes against which they contend daily in dwelling through the uncertainties of the existential present of that Dolpo domain of entanglement. As such, a causal link between recent experiences of observed weather

uncertainty, palpable phenological change within the entanglement and physical emissions from the technometabolic scale of industrial production at which a preponderance have no experience and which is far removed in terms of both space and power from their proficiencies is framed by most Dolpo-pa as being beyond the bounds of reasonable possibility in the contemporary operationalization of that emergent Dolpo-pa model of entanglement.

Just after making the statement above, for instance, the 49-year-old trader in Rigmo responded to a question about whether industries in India, China, or the US could be responsible for warming in the area:

I have never seen industries harming nature, and I don't believe this could be true for the fact that those industries are very far from us, so they can't warm up this place. For example, we make fire in our homes to get warm and cook food, but if industries do harm here too then we could make fire in one home to warm up the whole village, but this is not possible.

The trader's response is remarkable not only in its logic, which is incontestable as reasoned through the schematic constellation of the Dolpo-pa's model of entanglement, but also in how material experience of a home fire is conceptually schematized in contesting the possibility framed by the Western methodologies operationalized through the 'logic' of the question. Other respondents answered similarly, such as the 70-year-old in Rigmo whose response to a question about the possible role of human activity in the warming trend that he has noted over the last several years suggests this abiding contemporary sense of befuddled incredulity:

No, human activities can't be the reason for warmer temperatures here. I don't have much idea about this, but if I see the whole process then maybe I would believe it.

The Geshe at the gompa on Phoksumdo Lake near Rigmo also spoke with such an abiding sense, intriguingly identifying that a schema of human-caused warming might be no more than a way of framing one possible understanding of the world:

Now, I . . . usually it's hard to say things like this are because of industries. I think that's your ideology.

## THE INVISIBLE CLOTHES OF VISIBLE MEN SOWING SEEDS OF PACKAGED FIELDS

Despite this rather generalized sense of befuddled incredulity, a few individuals in Dolpo do frame at least the possibility of a link between their recent experiences with uncertainty and an unknown, extra-entanglement cause, though, significantly, such possibility is schematized only through their experiences within the entanglements of their domain<sup>xli</sup>. In this way, effects that are produced by the unknown power of the technometabolic scale of industrial processes can be proficiently conceptualized today by the Dolpo-pa only as they are downscaled to experience at the scale of their experiences. As such, only those short-term effects that are visible to the Dolpo-pa in their experience can be schematized conceptually even though such effects as schematized at that local scale can ever be no more than adumbrations of the long-term destabilizations of technometabolically-scaled changes that are in fact occurring rapidly in Dolpo (and that are indicated by those phenological changes) but that are invisible to the Dolpo-pa through their framing of causality based on limited experiences with the diabolic power of industrial reality.

For example, although a 50-year-old woman from Rigmo said that she knows factories produce smoke, her only basis for conceptualizing that technometabolically-scaled production of smoke is through that same biometabolically-scaled experience of home-fire smoke that the trader above referred to in contesting the ‘logical’ question about warming being caused from processes far afield from Dolpo:

I don’t know whether the smoke that comes from factories is harmful to people around here [far removed from where those factories are].

In this way, smoke is like snow to the Dolpo-pa in that it is a physical phenomenon with which they have palpable experiences from which their conceptual frame of the schematic category of ‘smoke’ is culturally modeled. As such, several informants framed smoke as being dangerous to

people's health, but each supported this frame only through specific reference to their local experiences with fire, subsequently basing their conceptual understandings of industrial emissions on these local experiences.

The point is that such understandings do not proficiently frame the not merely more voluminous but also most always more toxic and chemically-complex emissions of industry that can be very damaging at longer distances and for longer spans of time than such local experiences can proficiently model. In essence, the realities of industrial emissions are currently invisible to the emergent proficiencies of the Dolpo-pa based on their current awareness, which means, ironically, that the distortions of the Enlightenment framing of reality by the cognitive trick only makes such conceptual framing appear to be progressive through the distortions of the industrial power that such circular framing has generated but that is, by the first-order physical realities mystified no less by that trick (Hornborg, 2001; see also Georgescu-Roegen 1999), as impossible to sustain in the long term as it is impossible for biometabolically-oriented peoples like the Dolpo-pa to see based on their current understandings.

An interesting example of how this works comes from the same 50-year-old woman above, who said that home-fire smoke is

Not good for health, especially producing sore throats, chest pain, etc, but only if it stays in the home. If the smoke goes out of the home to the sky, then it has no harm anymore.

Notably, numerous Dolpo-pa informants frame the sky as being an empty space between the earth and the stars, so one schema through which they reason is that as long as smoke from emissions are not trapped in a physical space like a house, which is of course made of conditionally-structured surfaces with which they have material experience, then no harm can come of it. As long as it is not so thick as to remain on the ground or is not trapped in a physical structure, that is, then smoke from a fire just disappears into the emptiness of the sky; once it has

become invisible materially/perceptually, that is, it is framed as having vanished (and is therefore harmless) into empty air.

In this way, responses to several survey statements indicate that the connection between the industrial entropy that is increasing ecological and existential uncertainty within their entangled domain and the influx into that domain of machine-made clothes and packaged foods that have become increasingly available with money acquired through the sale of *yartsa gumbu* remains invisible to the Dolpo-pa. The few negative effects individuals in Dolpo have associated with these new products of far-off industry are downscaled similarly to smoke, becoming visible only through their own experiences at the local scale. To the survey statement, for example, “Compared to my old woolen clothing, the clothes I wear today are impacting snows in the mountains,” only 22.2 percent of respondents answered “agree” on a 3-point scale. To that same statement, however, 35.2 percent of respondents answered “disagree,” while 42.6 percent of respondents answered that they did not know. In contrast, to the statement, “Packaged foods are impacting snows in the mountains,” the highest response (40.7 percent) on the same scale answered “agree,” while 33.3 percent answered that they did not know, and only 25.9 percent of respondents answered “disagree.” What this means, of course, is that these experiences are schematized as short-term problems (if as problems at all, uncertainty about what is happening ecologically remaining rife as implied by the frequency of mid-value responses) that do not, as such, conflict with the limits of human agency as constellated in primary schemas of the Dolpo model of entanglement.

The differences intimated by the variations in response for the two previous statements are in themselves intriguing, but they become even more so in terms of informant responses to a third survey statement: “Packaged foods are littering the local environment.” To this statement,

92.6 percent of respondents answered “agree” on a 3-point scale, while only three respondents answered “disagree” and only one respondent answered that she did not know. The preponderance of response to this third statement is significant because it reflects the experience the Dolpo-pa have had in recent years with a growing litter problem that consists mainly of food wrappers and beer cans along the trails throughout Dolpo. Knowledge of this litter problem as derived from semi-structured interviews clarifies the much higher affirmative response to the statement about packaged foods than about machine-made clothes impacting snows in the mountains. All informants, even those who schematize such products as being both materially/perceptually and conceptually beneficial on the whole, are averse to this experience of this new kind of waste that is increasingly being tossed about the caravanning routes throughout the domain of Dolpo.

In truth, as a transhumant population with centuries-long experience of trade through the high mountains as a primary subsistence strategy, the Dolpo-pa have more extended engagement with and therefore possibly better understand than many other populations might the dissimilarity between the materials from those disparate scales of the technometabolic and the biometabolic that are used to package products in preparation for trade. Numerous informants commented on this difference, which is quite visible to them, especially in the form of these new experiences of industrial litter. An excerpt from my conversation with Gotza from Namdo just after I had asked him about what changes he has seen in the types of goods traded by the Dolpo-pa in this contemporary period provides an interesting insight into just what people see, in terms not only of these changes but also in how these changes are being framed:

G: In previous years when you brought the salt [from Tibet], how was it packaged?

Go: Yaks. Skin of yaks, hair. We would sew and make [woolen] sacks.

G: And what do you bring it in now?

Go: In plastic sacks and woolen sacks. Both.

G: Ok, if beers comes in cans and biscuits come in plastic, what's the difference environmentally

between the woolen sack and plastic bags/tin cans?

Go: Yes, there are differences in effect on environment between woolen sacks and tin cans and plastic sacks because plastic bags and tin cans never decompose and woolen sacks can be reused a certain number of times and they decompose.

G: And when you were younger, the woolen sacks, where were they made?

Go: Here in the home.

G: And tin cans, plastic bags, the things that come in them are . . . where are they made?

Go: In China . . . in factories.

Luhuk, the 31-year-old single woman who runs the seasonal tea tent and weaves blankets near Phoksumdo Lake, commented similarly in our conversation about the drawbacks of these new products in the form of industrial litter and the problems it causes:

G: When we arrived to Upper Dolpa we saw new kinds of packaging like sacks, plastic, biscuits, glass along the whole trail. Is anything negative about such things?

L: Its makes the place dirty.

G: So, what happens if the place becomes dirty?

L: If it becomes dirty, diseases are caused.

G: Do you know how people get sick?

L: I don't know. Hahhaaa.. (Speaking in Tibetan)

G: Are there any other problems with these plastics and cans we see everywhere?

L: If people walk with naked feet they get injured . . . If children use old cans to drink water, they become sick. If dzoa eat plastic they die. After that plastics and needles are found in their intestines.

The 62-year-old woman interviewed in her kitchen garden commented similarly, explicitly bounding the limits of such new waste in conformance to the model of entanglement:

I don't think there is any harm to the environment [of such packaging], but, yes, it harms our animals. Dzoa and yaks eat plastic which makes them die by chocking and distention.

Finally, the 46-year-old trader also commented on this problem, intimating not only its visibility by his concern but also his limited understanding of an effective solution in his taking action to address the growing problem:

Stuff like glass, plastic, nylon clothes, etc. doesn't decompose easily even after 5-6 years, so I personally dig in some place far from water resources and homes and cover these wastes with earth deep enough not to expose them to the outside again. But all villagers, they don't do this.

Significantly, however, the most severe and long-term impacts of industrial production of such products as clothes and packaged goods (among a slew of other products) that have made or will soon make their way into and be framed in the short-term, both positively and negatively,

remain all but invisible to the Dolpo-pa. This is especially true as they disentangle more and more from the domain of Dolpo with the pull of progress in the development narrative and the push of an easier life with acquiescence to the short-term benefits of those new products from the technometabolic scale of industry. Informant responses to a statement from the structured survey, “Litter is the only drawback of economic success and development,” indicates this point, with 79.6 percent of respondents on a 3-point scale answering “agree” and only 13 percent answering “disagree” (7.4 percent answered that they did not know).

Especially corroborative is how this point increasingly contrasts with how the phenological changes that have been witnessed within Dolpo (see Part II above) are now commonly schematized positively. For example, when I asked him near the end of our conversation if he was worried at all about what he readily admitted was unexplainable warmth over the previous several years, Tenzing responded:

I think it is good to be warmer than colder. There is no need of fire, no need of more clothes, less harm to animals, and so forth.

Others concurred with his positive schematization of these uncertain changes. The 25-year-old new mother who runs the tea tent near Phoksumdo Lake in Rigmo, for instance, agreed with Tenzing, claiming that with warmer temperatures people in the village have had better health and better harvests, not to mention the variety of food they now have. Kedar in the Tarap Valley, even though he does worry about such changes, also emphasized the positive aspects of these changes, especially how people in the valley are cleaner now that they have better access to warm water and no longer spend the long winter months huddled together in dark rooms by perpetual, sooty fires. Indeed, many respondents commented similarly during participant-observations of cultivation and harvest in Upper Dolpo, Tarap, and Rigmo that the variety of



foods and fresh vegetables now available is only beneficial and without real drawback or consequence.

In contrast, a few individuals like Gotza from Namdo, who was referenced at the beginning of this chapter in suggesting that he has a little understanding of the universalizing abstractions of Western science, has a different opinion about the uncertainties produced by these physical changes than do most Dolpo-pa; interestingly, however, his understanding is no less material/perceptual than others as it was acquired through his participation as a community leader in a climate change education program organized by WWF Nepal near the provincial capital of Dunai a few years prior to our discussion. As such, his unusual experience among the Dolpo-pa has in fact altered the model by which he conceptualizes such physical changes, which is reflected in his response to a question in our semi-structured interview that implicitly inquired about whether he and others model such physical changes that they perceive as something to be worried about:

Yes, it worries us. Last year there was very little rainfall, and if there is no rain, how can humans survive? For agriculture, irrigation, for animals we need water. Last year, I was in Kathmandu and in phone conversation with villagers they said that there was little rain and snowfall and this river Namdo was also dried out. If the river dries out then no survival of human is possible here.

Tserap from Samling Gompa, which is at least three days from Namdo over the formidable Nengla Bhanjyang (5368m), similarly worries about these changes, but he also attended the WWF program, an experience which had a similar affect on him.

The opinions of these leaders are, however, in the considerable minority in Dolpo. The majority of the Dolpo-pa contentedly and enthusiastically reference the various phenological and sociological indicators of change to prevailing weather patterns in Dolpo that wholly support their overall positive experiences with and subsequent hopeful modeling of what warmer temperatures and decreased snowfalls and increased varieties of foods and greater availability of

different clothing suggest despite the greater and greater unknowns with which they are increasingly contending as they fare forward into a future of uncertain entanglement.

### **IN ADUMBRATE SILENCE, FORESHADOWED ARREARS**

The crux of this discussion lies within the silence, worryingly scaled techno-diabolically. The silence in this context refers of course to that first-order physical reality that often spreads into invisibility in the second-order framing of that reality, a consequence of the evolutionarily emergent conceptual proficiency of the human-animal that typically disregards change except as synergistically conceptualized from the material experience of its most pressing physical reality at the biometaboli scale of ecological processes. Because of the tradeoffs inherent to this second-order framing, the Dolpo-pa, like individuals from any tradition, even increasingly hegemonic ones, frequently do not know what they do not know in dwelling by such synergistic awareness as is generated after extended engagement within the first-order physical reality of that scale.

This lack of awareness, which is again an ordinary constituent of being a phenotypic human-animal with an evolved cerebrum from which has emerged the selective advantage of conceptual representation, is especially worrying in times when change, in terms of force and magnitude, results from power at a scale that is different from that of the biometabolic and to which, arguably, no human-animal—even those human-animals who are the direct progeny of the cognitive trick of the distorted framing of the European Enlightenment who have the shrewdness to maintain (and even grow) that technometabolic scale but not such awareness as to see its full first-order physical reality—has material experience or conceptual proficiency enough to comprehend adequately. Even less synergistically aware of such power are those cultures still relatively well-entangled within the domains of their extended engagement at the biometabolic

scale of ecological processes. Beyond comprehension, the silence is deafening, smoothing out every distortion in its ultimate and inevitable adumbration of the existential leap at every scale into the disordering and always outstretched arms of entropy.

As Alf Hornborg (2001:12, emphasis in original) insightfully notes, “the environmental debate increasingly focuses on ways in which economics and ecology do not harmonize . . . [even though] industrial technology is a *product* of this disharmony. Its power to conduct work ‘in itself’, as it were, is a cultural illusion.” The basis of this cultural illusion is the cognitive trick of tautological distortion that accepts as reality a reification of one tradition’s cultural model of an arbitrary but since naturalized separation from human activity of a space framed as *the environment*, which is “the ‘material’ world [schematized] as natural, nonnegotiable, open to scientific revelation and manipulation, but in its fundamentals immune to contamination by human thought and society” (Hornborg 2001:12). In short-term acquiescence to the premises no less to the promises of this conceptual illusion to ameliorate the very real uncertainties increasingly befuddling their awareness, however, the Dolpo-pa are essentially positioning themselves in arrears to a foreshadowed future of penury and peripheralization in an environment, increasingly framed as *the environment*, with which they are becoming less and less entangled and within which they increasingly lack the proficiency to dwell without extreme existential peril. This peril can be expressed as an *existential dissonance*, a concept to be introduced presently in the concluding chapter of this thesis

## CHAPTER 7 – CONCLUSION: EXISTENTIAL DISSONANCE & THE FRAMING OF THE QUESTION

### WHAT YOU KNOW CAN KILL YOU

Early, when day has long since swathed the empty sky of stars in a woven spread of light though the sun will not top the jagged nubs of sheer rock rising two or three hundred meters east of camp in the deep valley at Danigar (4631m) for three more hours, Nyma flakes frost from the tent zipper and pokes his head through the narrowly opened aperture, espying the morning. He is only twenty-four, yet he has caravanned with yak and *dzoa* through this isolated area between the passes of the Numala Bhanjyang (5238m) and the Bagala Bhanjyang (5214m) in trade between Rigmo and the Tarap Valley and up through Saldang onto the Tibetan Plateau for over 15 years, having accompanied his father (as his father had accompanied his father and so on) from the time he was a boy. Having acquired over years of entanglement the synergistic awareness of material experience and conceptual proficiency that makes him Dolpo-pa, not only a person but also a part of Dolpo, he knows well the range of physical uncertainties with which he can expect to contend in caravanning through these remote mountains.

Nyma does not, however, know how old the Himalayas are. Nor does he know how old the earth is. When asked these questions after we had dashed with numb toes and steep cheers to bathe in the first, warm rays of sunlight to strike the valley floor a hundred and more meters away from our encampment, the long, exhausting trek up to the Bagala Pass and then down into the Maquwa Valley still ahead for the day, he merely flashed his sly smile, not as a defense against embarrassment for being unknowing of such “facts” but more as an implicit retort querying the expediency of such a question in such a place at such a time when the possibility of snow falling later in the day, he had commented earlier, was distinct. Not surprisingly, to a

multiple choice question on the structured interview, “How old is the world?” 85.2 percent of respondents answered that they did not know. The next most frequent response was 10,000-100,000 years at 9.3 percent, followed by two respondents claiming over 1,000,000 years and one respondent claiming 1-1000 years. Similar frequencies were recorded to the question, “How old are the mountains?” with 79.6 percent of respondents answering that they did not know, followed by 9.3 percent answering 10,000-100,000 years, 7.4 percent answering over 1,000,000 years, and 1.9 percent each answering 1-1,000 years and 100,000-1,000,000 years.

What Nyma and other agro-pastoral traders in Rigmo do not know is that according to the best science available today, as summarized by no less an authority than the US Geological Survey, the Himalayas began to form when the Indian subcontinent slammed into what is now the land mass called Asia some 40-50 million years ago (USGS 2011). The earth formed, according to that same best science from that same best source, some 4.5 billion years ago. Neither of these numbers is scaled to the biometabolic processes of ecology, however, nor is either really comprehensible to human-animals whose evolutionarily emergent conceptual capacities to truly comprehend let alone take any action on such abstractions beyond the purely representational but no less physical action of aligning letters, colons, numbers, zeros, commas, and decimals are rather limited:

Himalayas: 40,000,000.00 – 50,000,000.00 years old  
Earth: 4,500,000,000.00 years old

Too seldom reflected on, on the contrary, is that what those authorities of ‘science’ typically do not know is how to know and then surmount the uncertainties of the existential present of being so asymmetrically structured a conditional surface as a human-animal is as arrayed within the shifting, cleaving forces and magnitudes of ecological reality at the biometabolic scale of mountains and rivers and avalanches and insects and marmots and snow leopards.

For all of their usefulness in one reified reality, that is, neither models nor statistical inferences nor historical aggregations nor symbolic markers of black text on white background (like these) are, in themselves, at all useful in the existential present of the first-order physical reality of being Dolpo-pa caravanning across the isolated, wind-swept pass of the Bagala (5214m), tattered prayer flags fluttering and cairns gradually crumbling and grey snow-heavy clouds gathering and a dzoa corpse rotting without hurry at that elevation. Such scientific markers are neither edible nor insulating nor sinewy and brute nor conceptually proficient by an evolutionarily emergent selective advantage that continually loops back into experience to confirm or contest or alter the proficiency of shared schematic constellations that are transmitted over extended engagement of synergistic awareness within a domain of entanglement. No, the Dolpo-pa do not know the age of the mountains in which they dwell or the happenstance of their formation, but they do know how to remain dissipatively structured a little longer in caravanning through them.

The point, as argued in this thesis, is that the assurances framed by the distortions of the cognitive trick and confirmed through the unassailable evidence of its technometabolically-scaled productions *are* effectively ameliorating in the short term the growing uncertainty the Dolpo-pa are progressively more regularly confronting as their conceptual proficiencies less consistently and reliably frame the realities of their ongoing experience within the ecological realities of that entangled domain of Dolpo. In other words, children are increasingly being framed as better off knowing how old the mountains and the earth are than being aware of how to subsist through them. A withering irony arises, however, in that the growing uncertainty that has been ameliorated through such acquiescence in the short term has actually been brought about and continues to progressively increase by what in the long term has and will continue to

be a source of that growing uncertainty, which has begun to disentangle that very awareness that has made the Dolpo-pa unique and distinct *within* the environments of that entangled domain of Dolpo.

Such uncertainty is rapidly increasing among the Dolpo-pa as their proficiencies at being the people of Dolpo begin to less consistently and reliably frame the realities of their contemporary experiences within that domain. This diminished proficiency is directly attributable to the social order that has resulted from the force and magnitude possible in terms of production, consumption and transport of the technometabolic scale of industrial processes, the emissions of which have so altered the planet's physical atmosphere that ecological conditions have grown increasingly unstable in once thoroughly entangled domains throughout the world, especially at the poles and in what is often referred to as the third pole of the high Himalayas.

Data from this study indicate that in Dolpo such disentanglement is occurring through the increasingly pressing push-pull tensions of at least two interconnected subjugations to the power possible of the world system. First, the majority of Dolpo-pa, whose synergistic has emerged in holistic similitude with the existential present at the biometabolic scale of ecological processes, have neither experience of nor proficiency with the forces and magnitudes possible at the technometabolic scale of industry; indeed, intimation of such power as possible at that scale in discussion with most informants in Dolpo is met with incredulity. Despite such incredulity, however, the Dolpo-pa are increasingly framing altogether positively their limited experiences with those goods—mainly machine-made clothing and packaged foods—produced at that scale that have only within the five years or so since 2005 become regularly available to them. Such positive schematization reflects how inexperience and lack of proficiency with the forces and magnitudes possible in production at that technometabolic scale distorts those short-term

benefits. This is true even as growing uncertainty of the effects of the production of those benefits, readily observable in phenological changes to the physical environments of which the Dolpo-pa remain a part, ever more rapidly belies as illusory the assurances of material certainty that are thus adumbrated in such schematization of those industrial products as they are increasingly integrated as short-term benefits into the less and less reliable patterns of the Dolpo-pa's emergent synergistic awareness.

Second, such positive schematization of the short-term benefits of the now known products of otherwise unknown industrial production is being more and more invidiously (insidiously, more honestly) reinforced by one contemporary formulation of that cognitive trick of circular distortion, the discourse and graft of the increasingly hegemonic narrative of the International Development 'industry'. This narrative is confirmed by the short-term benefits of those known industrial products that have recently materialized from the reified (and ever more emissions-laden) air of the unknown scale of industrial power somewhere physically outside of the Dolpo entanglement and therefore of the schematic constellations of the Dolpo-pa's proficiencies. Through the machinations of this 'industry', however, the Dolpo-pa are increasingly being cognitively conditioned to re-frame—no less through the insidiousness of this graft—the awareness from which and of which they have emerged and thrived culturally for so many centuries as the backwardness, ignorance and irrationality of humans who are not as culturally evolved as they could and should be.

Thus re-made techno-diabolical as industrially human, the Dolpo-pa have also now begun to teleologically frame themselves as underdeveloped by their conceptual subjugation to a newly accepted and insidious and increasingly hegemonic cultural model grounded in the linear sequentiality of one tradition's conceptual circularity<sup>xlii</sup>. Only through such a frame could a



deputy director from the Nepali government's Department of Livestock Services (DLS) comment in a report from the mid-1990s that cattle rearing in Dolpo "is still in the primitive and traditional and has not entered into the modern age" (Kumar, 1996:1); indeed, only through such a frame could so many Dolpo-pa concur in so many ways with the logic intimated by this comment, even when an appreciably increased existential threat to their continued resilience is the outcome of such a distorted re-framing.

The push-pull tensions of this subjugation are beginning to sunder the conceptual from the existential, creating a situation in which the Dolpo-pa are becoming gradually more consonant with the linear sequentiality of the distorted conceptual model of international development even as they are becoming more and more existentially dissonant from the emergent synergistic awareness of their experience and proficiency after extended engagement within the domain of Dolpo. This *existential dissonance* is especially disconcerting because of how phenological changes to the characteristics of that domain that have resulted from the transition (in core areas, note, far removed from the periphery of Dolpo, thus instantiating a new form of colonial oppression) from a biotmetabolic to a technometabolic scale of force and magnitude will only increase this dissonance by altering, through the physical effects underlying the conceptual discourse of atmospheric 'climate change', the very entanglement to which the Dolpo-pa have been for so long so existentially and culturally consonant.

In this way, cognitive anthropological frameworks like Dressler's cognitive dissonance theory, even as they are effective in identifying and assessing the effects of such conceptual changes as are currently taking place in Dolpo, remain blind to the existential effects of such physical alterations to the experiences of people on the ground who are becoming less and less engaged with their entanglements and therefore increasingly likely to perish as a result. Such

blindness is the result of the tendency in cognitive anthropology (among so many other disciplines) to de-emphasize the experience of ecological reality in uncritical accedence to the those very distortions of the Enlightenment frame, especially in perfunctory and uncontested acceptance as indelible ‘truth’ of such cognitive-cultural constructs as *the environment* that are only the models of very specific places at very specific times in the history of the human-surface cum -animal.

**FRAMING THE QUESTION, OR ADUMBRATIONS OF A SAD, SUPERFICIAL SALVATION (AN END IN SIGHT, PROGRESSIVELY OUTPACED AND OUT OF REACH)**

As Hornborg (2001:146) states: “The special way in which machines conceal significant aspects of social reality, while at the same time constituting that reality, certainly deserves to be made more ‘transparent’.” Although referring specifically to machines, I take this reference more metonymically as representative of the entire technometabolic scale of production and consumption and unequal exchange within which the schema of progress is centrally constellated especially as the foundation of that most Huxleian of industries, International Development. Indeed, transparency and contexts and defamiliarization are indispensable if full comprehension of contemporary representations of ecological reality as it is constituted and framed by cultural conceptualizations are to be approached and comprehended. Arguably, for example, the keen popular interest in Point Four of Harry S. Truman’s Inaugural Address in 1949, which promised “a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas [where] more than half the people of the world are living in conditions approaching misery” (quoted in Rist 2008:71), was a reflection of how the models of the technometabolic scale of industry had become hegemonic to the progeny of the distorted framing of the Enlightenment even before the end of WWII.

Only through such a cognitive trick could a circularly distorted frame that reifies second-order conceptualizations and takes them as first-order physical reality, as with one of Truman's central conclusions, that more than half the world has an "economic life [that] is primitive and stagnant . . . [and that] their poverty is a handicap and a threat both to them and to more prosperous areas" (quoted in Rist 2008:71), make any sense. Indeed, the trick of this distorted frame *is* the central thesis of the development narrative that emerged from Truman's address, confirming the reality of the reification of a world as framed contemporarily no less for those who perpetuate it in the core than for those who buy into it in those areas of the periphery that have been thus deluded, as with the framing of the Nepali DLS deputy director (above) who situated himself so compellingly within that frame in his perfunctory statement about the primitive and traditional state of livestock production in Dolpo nearly fifty years and fifteen thousand feet in elevation later.

To be sure, the Dolpo-pa have begun to similarly schematize themselves as economically deficient because of their continued orientation to the biometabolic scale<sup>xliii</sup>, especially in not more efficiently commodifying and exploiting *the(ir) environment* as a resource through which they might develop (as others have, obviously, since they can make such astounding industrial products) into some future point of production and consumption capacity (a re-scaling to the technometabolic) when their present will coincide with the ever-present present—the benchmark present, that is—of the modern age of progress as framed by Truman (and many before him<sup>xliiv</sup>) that, according to the evaluation made by that DLS deputy director's report, they at present lag so far behind. In truth, such framing of these scalar disparities coupled with the ironic interconnections in Dolpo of growing ecological uncertainty and the ameliorating/denigrating assurances of graft through the international development 'industry' are even now drawing the

Dolpo-pa closer to that conceptual tipping point when they will fully embrace the odious schematic brand of the scarlet **U** of underdevelopment, framing themselves as existing in a state of subsistence, penurious and pitiable in a domain of disentanglement.

Once past that point, they will have wholly acceded to a technometabolically-scaled system within which they might somehow continue to subsist meagerly but only with development aid or outmigration or resource commodification or some combination of these “choices” but which altogether will always remain, because how they culturally model possibility within the environment is so different at a root scale than those industrial distortions of *the environment*, all but impossible for those who remain truly Dolpo-pa, people *of* Dolpo, and not merely people *from* Dolpo to truly comprehend. Such an ominous and imminent future for such synergistically aware people after such extended engagement within such a domain of entanglement should give pause to those eager humanitarian liberalists who belie the underlying superficiality of their linear certainty in the passionate but no less imprudent insistence on always asking those who would not ‘salvage’ culture but who would reframe the assurances promised by a distortion of ecological reality that only will and ever only has disentangled holistic similitude, “Who are we to tell them what they should have or be?” The answer, of course, lies within the very framing of the question.

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## ENDNOTES

<sup>i</sup> Until it is not, of course, which, in terms of the Enlightenment framing and subsequent progress of the industrial human-animal as adduced by the Drake Equation, is becoming more and more likely sooner and sooner.

<sup>ii</sup> For example, at [www.uniquetreks.com](http://www.uniquetreks.com), Dolpo is described as “a truly isolated corner of Nepal [where] time has stood still . . . for centuries as inhabitants of Tibetan stock continue to live, cultivate and trade the way they have done since time immemorial” (accessed 21.08.11). Such a description is common, as demonstrated by the results of a simple Google search for “trek in Dolpo.”

<sup>iii</sup> In two weeks of trekking from the literal end of the road nary a Twin Otter made the forty-five minute flight from Nepalganj on the Terai to Juphal . . . and better to be soaked than to be going nowhere for two weeks!

<sup>iv</sup> I enlisted the Dolpo-pa *dzoa* wrangler and guide I hired for the circuit of upper Dolpo for Tibetan to Nepali translation on the circuit. The translator I hired from Kathmandu, the former park ranger at SPNP, only spoke Nepali, but I chose him because of his many connections in Dolpo. He and the *dzoa* wrangler were great friends from the past, so the double-translation worked well-enough for my purposes.

<sup>v</sup> I remember well the morning I approached her outside her father’s lodge and asked in a slow, drawn tone if she would be interested in helping me by translating an interview or two from Tibetan. She smiled, staring at me for a moment as if she was unsure of what I meant, then said simply, ‘sure.’ I then asked how much she would charge, and she smiled even more widely, her eyes narrowing to slits, as she looked at me under the blanket of the too blue sky, seemingly searching for words. Finally, her lips parted and, a bit haltingly, she said, “volunteer,” her voice rising as if she were asking me for her help with something or other extremely important to her. I think now that she was unsure whether or not she had the correct word, but it was the correct word to express what she meant. And so, for the next six weeks, Yungdrung the informant became Yungdrung the research assistant, significantly benefiting the success of this project.

<sup>vi</sup> Geshe is a title equivalent to doctor for a lama holding the most advanced terminal degree in Buddhist/Bon studies.

<sup>vii</sup> Reference to livelihood designations is meant only as a vague indicator since almost all Dolpo-pa pursue a variety of livelihood strategies. Listed are primary livelihood strategies as indicated by individual respondents, nearly all of whom engage in other activities to supplement these primary activities.

<sup>viii</sup> Interestingly, the village shopkeeper was originally sent to Rigmo by the government to be the village schoolteacher. In the late 1990s, however, an hour (and 400 meters down) from the village, an American woman and a Dutch charity had funded and now operate the Taprizza Boarding School. He no longer has any students, so he now operates the shop. Indeed, Rigmo was interesting partially because all school-aged children from the village attend the boarding school, so no children older than five or six actually live there during the school year.

<sup>ix</sup> Is it even a ‘legitimate’ way? Note how the tautology becomes thereby the arbiter of its own legitimacy of representations.

<sup>x</sup> This perspective is true of plant life, as well, of course, but plants are more readily conceived of as being contiguous with an environment, importantly intimating both the limits and the duplicities of perception. Because of this perceptual contiguity, plants will be left except in terms of animals out of this analysis.

<sup>xi</sup> Even more notably, descriptions of the products of such functioning are never more than linguistic representations, ‘schemas’, ‘models’, ‘cultures’ all existing only conceptually as reifications of an emergent mechanism of the evolution of the human cerebrum. Words are not actually what they mean, as the dictum states. More so, however, neither is the result of the genetic evolution of the eagle’s eye the actual vision of the eagle that enables actual creatures represented by that word to surmount evolutionary pressures through its naturally selected phenotypic adaptations.

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<sup>xii</sup> Originally, I wrote, “by filling a specific niche,” but then I realized, guided by Ingold (1992), that the notion of ‘niche’ belies an understanding of entanglement, each component of an entanglement emerging through and by its particular interaction with the entanglement in its surmounting of entropy bearing down on the entanglement.

<sup>xiii</sup> Such enskiled awareness suggests Merleau-Ponty’s ‘fields of care’, a culture reframing to which, Evernden (1985:47) argues, though trying of the patience of readers inured to thinking of the world as an assemblage of discrete objects in a neutral landscape would “fundamentally transform” our distorted understanding of ourselves as separate from *the environment*.

<sup>xiv</sup> Graft is “the practice of offering something (usually money) in order to gain an illicit advantage.” If international development, especially as framed by a neoliberal world order, is not graft, then what is?

<sup>xv</sup> Note how in nested reality, each level constellates schema that were in a previous level themselves models composed of constellated schema. Only at the root level of the object-world are surfaces before cognition unschematized, though they do ‘nest’ in materials and particles in and infra/ultra to the scale of the ecological.

<sup>xvi</sup> Kedar is an exceptional person. Though Nepali, he has dedicated his life to assisting the Dolpo-pa in the Tarap Valley, and he is very knowledgeable of and shares many of their fundamental beliefs. In found the Crystal Mountain School, he said that he wants it to be a place where children from Dolpo can continue to learn the traditional forms of practice that “make them who they are” (i.e. Dolpo-pa) but also supplement those practices with education that will enable them to cope with new situations arising in the contemporary world.

<sup>xvii</sup> Not one informant knew where the water from the spring up on the mountain comes from, although, having climbed up to it, we could with high confidence determine that it seeps through the several meter thick rock on the opposite side of which is a very large, ever present glacier that feeds Phoksumdo Lake.

<sup>xviii</sup> The pronoun ambiguity of their welfare/them is intentional here, as, according to the model of karma, concern for welfare applies equally both ways, humans being distinct from other creatures and material forms only in terms of karmic accrual, which can be gained or lost by any creature by any act that is sinful, which means, as will explained more fully in the text, as a material/perceptual action that sunders the continuity of the entanglement.

<sup>xix</sup> Of course, this near certainty was based on indices and geo-historical indicators more than on on-the-ground realities, which were dire no less at the time but were dire in a different way than merely in aggregate as the statistical outputs of the development industry that frame such realities according to a logic foreign to local peoples trying to cope with them.

<sup>xx</sup> Of course, the majority of this excessive amount on the “world market,” of which the vast majority of the Dolpo-pa have never heard, never returns to them or to anyone, for that matter, *to* whom they sell (not *with* whom they trade, notably, the difference in preposition prodigiously suggestive of the difference) this commodity.

<sup>xxi</sup> This is especially true in the geopolitically globalized earth, wherein a remote peoples like the Dolpo-pa who are not yet intimately tied to the world system but who nonetheless have suffered significantly by its machinations, leading those within to frame them as poor and ignorant even as the Dolpo-pa continue to adapt to situations completely out of their control. For instance, trade in *yartse gumbu* became necessary because of geopolitics but the scalar disparity is leading to a situation of unequal ecological exchange and uneven development.

<sup>xxii</sup> Note the subtle shift from the adjective to the adverb as descriptor, from essential to essentially: The former case describes the absolute necessary, vital nature of the human-surface cum –animal; the latter describes the essence of but not the actual being of. It’s a similar difference between saying that a person *is* cognition as opposed to saying that a person *has* cognition—the former is not separated from its physical evolution, cognition being as much a part of the person as the nail of the big toes, while the latter is possessed only of a reification of that evolution that does not actually, as all reifications, exist as an object in the world.

<sup>xxiii</sup> Reference to Huxleian (often compared to Orwellian) totalitarianism and subjugation derives from the model framed in Aldous Huxley’s classic novel of ideas, *Brave New World*. In it, individuals are subjugated by a social

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order that is implicitly totalitarian, providing drugs, games, and sex to a Fordist culture of socially and genetically segregated social classes who are each in their own ways too superficial and pathetically entertained by the productions of industrial society to question the problems of being so superficial and pathetically entertained by the productions of industrial society. Huxleian often also references Thomas Henry Huxley, ‘Darwin’s bulldog’ and Aldous’s grandfather, to whom, though admired greatly, this thesis does not refer.

<sup>xxiv</sup> Of note and consequence is how this shift to the penury of underdevelopment circularly reifies that very idea, as if it were a scarlet U stitched to the breast of every Dolpo-pa as an identical Hester Prim, which would be ironic if it weren’t so intentional of Huxley to make each of the lower classes in *BNW* identical and simian-like in their underdevelopment, both physical and cognitive. In counterpoint, of course, is how the Dolpo-pa’s domain is never unchanging, at any scale, even as the changes perceivable on the ecological scale have driven them for several decades to modify their long-held trade practices, which they have done (not without great struggle) and continue to do in still subsisting within their domain, which is rather the point.

<sup>xxv</sup> In Tibet, interestingly, yak butter is revered and ubiquitous as an offering to be burned at monasteries and sacred sites like the Jokhang, the holiest temple in Tibet. In Dolpo, however, observations indicate that yak butter is seldom wasted, suggesting the greater physical exertion required to caravan through the high Himalayas as compared with that required in nomadism across the Plateau, which is certainly difficult but not as difficult. Furthermore, it also suggests lower carrying capacity of Dolpo, which is also at least partially a consequence of that more difficult geography.

<sup>xxvi</sup> Notably, at this altitude and area, there was no landslide danger to forefend.

<sup>xxvii</sup> Nyma did not, however, engage in this same practice most other days on our trek, and he claimed never to have been to that part of Upper Dolpo before, which illustrates the holism of his synergistic awareness of what to do where and when to such detail within that domain of human-animal culture that is Dolpo.

<sup>xxviii</sup> Magli Budha, the recently graduated nurse from Rigmo, is one exception who proves the rule, of course. Also well-educated in the Western model of pedagogy that of course includes science education is Kedar from the Tarap Valley and a few other health workers, who may also know a little of the science of electrolyte replacement, though this has not been confirmed.

<sup>xxix</sup> Alf Hornborg’s (2001:17) comment on difference between the ecological and industrial scales (what he calls “biomass” and “technomass” is telling, especially in terms of sustainability: “Both are dissipative structures, requiring inputs higher than outputs and subsisting on the difference. A crucial difference is that biomass is a sustainable process whereas technomass is not. For biomass, energy resources are virtually unlimited, and entropy—in the form of heat—is sent out into space. For technomass, resources are ultimately limited, and we are left with much of the entropy in the form of pollution. For biomass, growth is a morally neutral reward granted by nature itself, whereas for technomass it is a reward resulting from human ideologies and generating unequal, global relations of exchange.”

<sup>xxx</sup> As Gibson (1979:8) importantly notes, “The fact is worth remembering because it is often neglected that the words *animal* and *environment* make an inseparable pair. Each term implies the other. No animal could exist without an environment surrounding it. Equally, though not so obvious, an environment implies an animal (or at least an organism) to be surrounded . . . The mutuality of animal and environment is not applied by physics and the physical sciences. The basic concepts of space, time, matter, and energy do not lead naturally to the organism-environment concept or to the concept of a species and its habitat. Instead, they seem to lead to the idea of an animal as an extremely complex object of the physical world.”

<sup>xxxi</sup> Especially worrying is that many of these institutions are boarding schools, such as the Western funded Taprizza School a two hours hike down a steep 700m descent from Rigmo where all children from the village between the ages of six and fourteen live for at least six months of the year. In this way, Rigmo importantly illustrates how fragmentation upsets not only the transmission of traditional knowledge with acquiescence to the model of progress as expressed through the thimblery of development but also the interwoven fabric of everyday life in Rigmo—from

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its most sublime trials to its most ruthless moments of joy—that is an essential and often uncritically acknowledged loss through such acquiescence. Indeed, the wanting for children over the age of six in Rigmo was palpable, almost as if the people’s rejection of their conceptual awareness of themselves entangled in their domain found physical representation in their casting out from the village their children into the low world about which they do not know just how much they do not know.

<sup>xxxii</sup> Arguably, this selective advantage that enables humans among all other animals to conceptually model and thus respond to new moments through such synergistic awareness also promotes such the naturalization of such synergistic awareness, which would be, though further study would be required to confirm this hypothesis, both genetically and phenotypically advantageous.

<sup>xxxiii</sup> I am loathe to use the term *indigenous* any more as it has been appropriated by an indigenously Enlightenment system (and discourse) that even more nefariously subjugates as it continues to claim that it does not subjugate by transitioning from an Orwellian to a Huxlian totality. Furthermore, I am using the term not to claim that the Dolpopa have genetic origin there but that have phenotypic and cultural continuity long enough there to warrant the appellation.

<sup>xxxiv</sup> Many informants, as will be seen below, do see changes to glacier size and lake levels over the course of the year, which they consider normal and has been naturalized in their models. Unchanging here refers to their constancy in never disappearing, which actually supports their contentions that they cannot disappear, since they change but not so much *ever* to ever vanish completely.

<sup>xxxv</sup> Maybe I should have noted this previously, but I will state it now: I am not claiming in this thesis that the methodologies of Enlightenment framing have not benefited humanity. By so many means, it has, and it will continue to long into the future. Specifically, within such a linear methodological system, Newtonian mechanics was vaunted until Einstein, becoming thereby not merely an historical novelty but still very useful at scales at which its capacities remain effective and explanatory. The problem with such thinking is that it has become itself a paradigm, a la Kuhn, most believing it is the only legitimate way to truly frame and understand the world, when it, too, has its limits but has been framed now tautologically as if it is the only legitimate way to frame and understand the world. This is the distortion of the frame, which should at this point be quite evident, if I have done well in writing this thesis.

<sup>xxxvi</sup> Only within the last three years has Phoksumdo Lake and the river flowing from it not been the main source of water to the village. With the installation of the provincial government funded taps, most now do not regularly acquire their water from the lake, though some still do. As one survey statement to be discussed below in the text indicates, this recent change can reasonably be construed as having no impact on the validity of these responses.

<sup>xxxvii</sup> See also (Agrawal 1995; Turnbull 1997; Ingold 2000; Berkes and Jolly 2001; Vedwan and Rhoades 2001; Nadasdy 2003; Byg and Salick 2009; Turner and Clifton 2009)

<sup>xxxviii</sup> What the distortion of the cognitive trick of European Enlightenment modeling does, in contrast, is illusorily claim that the frame is the actual, accepting as truth, thereby, the de-emphasis inherent to framing and framing that truth in turn as an ultimate truth, confirmed by the linear sequentiality of progress as adduced through a frame of progress that thus disparages any other holistically produced frame as untruth, illogical and primitive.

<sup>xxxix</sup> Notably, Tarap is 400-500m in elevation higher than Namdo. Rigmo and Phoksumdo Lake, just to restate, are at ~3740m.

<sup>xl</sup> Kedar, the principle of the Crystal Mountain School in the Tarap Valley, who has traveled to Europe and understands the basic Western scientific model of Global Warming, interestingly mistook the steam that he once saw being released from nuclear power plants in France for the factory emissions he had heard were causing the problem. His material/perceptual experience in observing the steam release confirmed his limited conceptual proficiency in understanding Global Warming, which caused him to frame his observations incorrectly. Interestingly, when I explained to him that what he observed was just steam and not the factory emissions he had



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heard about, he remained incredulous for a while as I continued to fill in his experiential gaps with my higher proficiency, at which time he acquiesced and altered his constellation in conformance to the new information he learned from me.

<sup>xli</sup> In 70 days in the field, we only heard an engine once when a rescue helicopter flew over Rigmo toward Upper Dolpo to collect a French tourist who was injured. This occurred during my conversation with Tenzing, who had just expressed his incredulity about the power of machines. I asked him if he had heard of helicopters before he saw one, and he said he had but, interestingly, did not believe they were real until he saw one fly over Rigmo for himself a few years back. In other words, an direct experience was required to confirm what was otherwise to him only rumor.

<sup>xlii</sup> Hornborg (2001:12) makes an interesting point about the odd place of machines and I would add industrial facilities in our models of production. As he says, “We seem to have difficulties understanding that machines, being material structures, for their very existence depend on social relations,” which, I would add, are often taken as actual objects in the world and so are reifications. As Hornborg continues, “Machines occupy an ambiguous position in the Cartesian scheme: they are material, yet products of mind. This is probably why we have such a hard time grasping them as the social phenomena that they are.” Again, I would add that industries typically exist far from the actual dwelling places of two extremes of the social order in the world, those with power at the core and those who are at the margins of the periphery, the former as thoroughly disconnected (both physically and cognitively) from the destructions they perpetuate as the latter, even though the latter is overall materially and cognitively subjugated to the former in terms of (both social and material) ‘negentropy’. This odd and subjugating relationship between these two poles of social typology within the world system is certainly, though it is beyond the focus of this thesis, worth further future study.

<sup>xliii</sup> Such an orientation is often framed disparagingly as being ‘subsistence’, as if “The state of existing in reality; having substance” was somehow ignoble or shameful

<sup>xliv</sup> See also (Richards 1990; Wolf 1982; Clarke 1979; Burchill 1966; Carr 1961)

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## APPENDIX I

### INFORMED ORAL CONSENT SCRIPT

I am a student from Colorado State University in the United States. I am interested in understanding how you see the world around you, especially in terms of the high mountain glaciers and your livelihoods. I am also interested in learning about your way of life and how you explain and are adapting to environmental changes you see occurring in this valley that are affecting your way of living. Finally, I am interested in knowing your thoughts on the explanation some people from outside of this valley offer for the environmental changes happening here.

I think how you see the world and your adaptations to environmental change can prove important to many people beyond this valley. I hope that eventually this research will contribute to development planning that includes local understandings and adaptations and emphasizes more local or village control of resources and implementation. Such a model of development would not dismiss all forms of well-being beyond economic growth but would integrate economic well-being into a full determination of well-being that includes religious, cultural, social and personal health and welfare.

I want to emphasize that participation in this study is entirely voluntary. Such participation will involve, generally, allowing me to work with you in tending your herds and harvesting your gardens, discussing with me one-on-one or in a group sessions your views of the mountains and water resources, and how your lives are changing as the environment around your changes. In some cases, I wish to tape record our conversations. Such one-on-one conversations will take no more than 2-2.5 hours at a time, and I may ask to speak with you again to follow up on our conversations. Again, your participation is voluntary and you may stop these interviews at any time. Group sessions you may be invited to participate in are expected to be between 2-3 hours. Your time commitment will be a total of approximately 5-7 hours over 10 weeks. I will protect these recordings of our discussions and will not share them with anyone except for research purposes; they will be kept in my possession under my personal protection, as a source of knowledge about my time spent here among you that can be compared to future work here. For these more formal, recorded discussions, I hope you will honor me by accepting compensation of 20 Nepali Rupees per hour.

I have come all the way from the United States to listen to you. I think your voices are very important and your knowledge and wisdom about the environment of this valley and the changes that are occurring here is deep and valuable. There are no known risks associated with this research or to the discussions we have; however, I want to repeat that any information that could in any way harm you or your community—as for example when you might have something critical to say about the state—completely confidential. I will eventually write about this research to communicate with different people what I have learned here. In these contexts, I will do everything I can to protect your interests and to protect you against possible dangers. If you wish your names to be identified with certain local knowledge, I will do so. If you want your identity hidden, I

will do so (I will even hide the name and exact location of your village if not doing so could jeopardize your personal or community safety).

I think people in the United States, in other places in the world and in other places in Nepal have a lot to learn from your knowledge, especially how you see and interact with the environment and how you are adapting to changes in it. In many other places around the world, conversations are taking place about how to better see, interact with and adapt to environments and change. I am very grateful for your help in teaching me to better understand these issues from your important perspective.

I ask you for your oral consent to participate in this research. No written document will be kept regarding our understanding; however, I hope you will trust me fully to protect and further your well-being as individuals and as a community. Research of this kind can increase your voice in conversations with powerful outside forces like the state and foreign development organizations. Providing you with the opportunity to have a greater voice in determining for yourselves how your future will look while also protecting your well-being are my two primary motivations for conducting this research.

If you have any concerns about your participation in this research or about this project in general, please speak with me immediately. I am grateful for your help and involvement in this project. I think it is important work, both for your community and nations, for my country, and for the world.

**Do you have any questions?**

**Do you give your permission to participate in this study?**

.....

**Contact Information Sheet:**

Thank you for your participation in this study. If you have any further questions about the study, please contact:

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If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Colorado State University, Human Research Administrator at 001-970-491-1655.

## APPENDIX II

### STRUCTURED SURVEY PROTOCOL

#### I. True/False

1. My expectations of the weather in each season have become less reliable over the last several years.
2. The mountains no longer have as much snow as they once did.
3. In general, it is warmer here now than it used to be.
4. I am envious of my neighbor's increased wealth.
5. Phoksumdo Lake was formed by a demon which was killed by Guru Rinpoche.
6. A village once existed where Phoksumdo Lake is now.
7. Avalanches have become more common in the last few years than they were in the past.
8. The amount of snow that falls each year determines what the temperature will be.
9. Nature cannot exist without humans.
10. Great lamas can control local weather events.
11. The calendar controls the change in the weather each season.
12. The snow in the high mountains could not disappear permanently.
13. If the spring from which we get our water stops flowing, we can always get water from the river.
14. The primary purpose of nature is for human use.
15. It is a sin to kill wildlife.
16. Phoksumdo Lake is too old to be affected by changes in the snows in the mountains.
17. I sometimes drink bottled beer or soda to show that I can afford such things.
18. Knowledge of the Bon Dharma is more important to me than knowledge that enables me to earn more money.
19. Knowledge consists of the skills that help a person survive in the world.
20. The knowledge I learned from my parents and neighbors is less important than the knowledge children learn in school today.
21. I can earn more money now than I could 5 years ago.
22. I spend more money on food now than I did 5 years ago.
23. I spend more money on clothing now than I did 5 years ago.
24. My standard of living has increased over the past 5 years.
25. I am happier now than I was 5 years ago.
26. My life is easier now than it was 5 years ago.
27. I worry more now than I did 5 years ago.
28. I worry about different kinds of things now than I did 5 years ago.
29. Yartze Gumba is the biggest reason why I have had more money to spend over the last several years.
30. I have left some of my plots uncultivated in order to search for Yartze Gumba.
31. Knowledge is more important than wealth.

## **II. 3-Point Scale (Disagree—Neither Agree Nor Disagree—Agree)**

32. Nature is more resilient than humans.
33. Humans are a part of nature.
34. Nature is more powerful than humans.
35. I cannot do anything to prevent an avalanche from wiping out my entire herd.
36. Humans are too small and insignificant to be able to harm nature.
37. There have probably been human societies that have done so much harm to their local environment that those societies have collapsed and disappeared.
38. Nature exists in a balance that humans can alter as they please to satisfy their wants.
39. I can do little stop an earthquake from destroying my house.
40. Humans can destroy nature.
41. Cutting down one tree is a sin.
42. Human technologies can alter nature.
43. There is much I can do to stop a blizzard from forming when I am crossing a pass.
44. Nature will exist regardless of whether or not humans exist.
45. Human technologies can alter nature for short periods of time only.

## **III. 5-Point Scale (Strongly Disagree—Disagree—Neither Agree Nor Disagree—Agree—Strongly Agree)**

46. Humans and nature are mutually dependent on one another.
47. My beliefs directly affect the amount of snow that falls in the mountains.
48. Nature is too vast for humans to be able to harm it.
49. I destroy nature every time I plow my plots.
50. I am powerless to do anything to stop the river from washing away the bridge I use regularly.
51. Like an insect is to me, so am I to the forces of nature.
52. If caught in a landslide, I would be lucky to survive.
53. It is becoming more difficult to predict when avalanches will occur.
54. Humans can destroy local environments but cannot have global impacts on the natural world.
55. A swollen river is more dangerous to me than I am to it.
56. A great lama could stop the seasons from changing.
57. There is little I can do to stop hail from destroying my crops.
58. I worry that a predator like a snow leopard will kill my herds.
59. The way a person lives his or her life can cause long-term harm to nature.
60. Humans can alter nature so much that they end up destroying themselves.
61. Industries in India, China and the USA can affect the water supply in Rigmo.
62. I do not worry about natural disasters like avalanches killing my animals.

## **IV. 5-Point**

63. I have to wear less clothing in the colder months than I used to.
64. There is less snow in the high mountains than there was in years past.

65. It is more difficult to predict how much rain there will be in the growing season than it used to be.
66. I don't have to burn as much fuel now as I used to to keep warm in the colder months.
67. The temperatures on the way to Dunai are more similar to those in Rigmo than they were in years past.
68. The amount of snow and ice in the mountains directly affects how much water will be available for use in the village.
69. The glaciers (snow and ice flows) in the mountains could melt completely and not return ever.
70. Crops ripen earlier now than they used to.
71. It is generally warmer here now than it used to be.
72. New kinds of vegetables can be grown here now because it is warmer.

### **V. 3-Point**

73. My faith prohibits me from intentionally harming the environment or nature.
74. Litter is the only drawback of economic success and development.
75. If I know my actions are harming someone else, I must stop doing them.
76. Increased standard of living equals increased incomes.
77. Compared to my old woolen clothing, the clothes I wear today are:
  - a. warmer
  - b. of better quality
  - c. cheaper to buy
  - d. a sign of status and success
  - e. more durable
  - f. impacting snows in the mountains
78. Packaged foods are:
  - a. healthier than locally grown foods
  - b. easier to prepare than locally grown foods
  - c. more convenient than locally grown foods
  - d. changing how people in Dolpo are living their lives
  - e. making some people wealthy
  - f. tastier than fresh foods
  - g. more interesting than local foods
  - h. a sign of status and success
  - i. littering the local environment
  - j. impacting snows in the mountains

### **VI. 5-Point**

79. I can unintentionally harm someone I've never met by consuming packaged foods or bottled drinks.
80. I can unintentionally harm someone I've never met by wearing clothes made in China or India.
81. With increased wealth people are less interested in spiritual development and duties.

82. The standard of living of a village can increase without the individuals in that village making more money.
83. Economic development impacts the environment negatively overall.
84. People in this village are lazier now that they have increased wealth and incomes.
85. Yartze Gumba will continue to provide higher incomes to people in this village.
86. Increased standard of living means increased consumption of previously unavailable goods.
87. There is no limit to the benefit of increased wealth.

## **VII. Demographics**

88. Age (gender)?
89. Primary source of income? Has that source changed in the last 10-15 years?
90. Marital status?
91. Number of children? Grandchildren?
92. Formal education in years?
93. Have you ever lived anywhere but the Phoksumdo VDC? If so, where and for how long?
94. How long do you usually spend in KTM? For how many years have you been coming to KTM? When was the last time you were in Dolpo?

## **VIII. General**

95. How old is the world?
  - a. 1-1000 years
  - b. 1000-10,000 years
  - c. 10,000-100,000 years
  - d. 100,000-1,000,000 years
  - e. 1,000,000 + years
  - f. I don't know
96. How many times do you drink packaged drinks (e.g. Coke, Frooti, San Miguel beer, etc.) in an average month?
  - a. 0
  - b. 1-3 times
  - c. 4-10 times
  - d. 11-20 times
  - e. 20 + times
97. How many times do you eat packaged foods (e.g. biscuits, noodles, candies, etc.) in a month?
  - a. 0
  - b. 1-3 times
  - c. 4-10 times
  - d. 11-20 times
  - e. 20 + times



98. How much debt do you currently have?

- a. 0
- b. 1-1000 NRs
- c. 1000-5,000NRs
- d. 5,000-25,000NRs
- e. 25,000+NRs
- f. Prefer not to say

99. How much savings in currency do you currently have?

- a. 0
- b. 1-1000 NRs
- c. 1000-5,000NRs
- d. 5,000-25,000NRs
- e. 25,000+NRs
- f. Prefer not to say

100. How many plots of land do you own?

- a. 0
- b. 1-5
- c. 6-20
- d. 21-50
- e. 50+

101. How many pack animals do you own?

- a. 0
- b. 1-5
- c. 6-10
- d. 11-20
- e. 21 +

102. How much of your current wealth do you attribute to Yartze Gumba?

- a. < 10%
- b. 10-25%
- c. 26-50%
- d. > 50%
- e. 0

103. In a word or phrase, name one thing that would improve the quality of your life today.