

WATER'S ROLE IN A SENSE OF PLACE IN THE NU RIVER VALLEY

Draft

Water Resources Policy and Management Master's Project

Submitted by Elina Lin

To: Aaron Wolf, Major Adviser,

Bryan Tilt and Dennis White, Committee Members

September 3, 2009

Problem Statement

Water is the best of all things.

~ Pindar (C. 522-C. 438 B.C.), Olympian Odes

Water is a basic need that no living being can go without. Our natural human instincts lead us to water bodies and we are drawn to water for its calming and rejuvenating effects. For both biological and spiritual reasons, water is an important part of every culture and of every living creature on earth. Naturally, stories about lakes, springs, creeks and rivers abound.

Sense of place is the collection of meanings, values and beliefs that individuals or groups associate with a particular location. Spaces are made places with they are imbued with meaning through lived experience (Tuan 1977). Myths, legends and stories create a sense of place by giving meaning to the place and self. By knowing one's place, we know ourselves and our identities are shaped by our stories.

This research delves into myths, legends and other stories about water bodies in the Nu River Valley of Yunnan, China to show how these stories create a sense of place.

Sense of place is disrupted when people are displaced from their homes by development projects like hydropower dams. Serious negative emotional and psychological consequences have been witnessed in displaced people. This paper suggests that depression, anxiety, and other mental disorders common among resettlers is caused by a loss of sense of place and that by taking into account place attachment, negative social impacts of development may be reduced.

Research questions:

This research project was guided by two questions that aimed to elucidate water's integral role in human lives in place and how this awareness might protect emotional well-being.

- How does water create a sense of place in sites such as the Nu River Valley in China's Yunnan Province?
- How can awareness of sense of place help lead to policies with less negative social impacts of development and hydropower projects?

Introduction

To trace the history of a river is to trace the history of the soul.

~ Gretel Ehrlich

China is growing at an extremely rapid pace and more electricity is needed to sustain industrial and municipal demands. The country is looking to its rivers to generate power and provide water for its people. Premier Wen Jiabao has said that water scarcity "threatens the very survival of the Chinese nation." In 1949, China had only 40 small hydrostations and a handful of large reservoirs. By 1985, however, the country had built more than 70,000 hydrostations and 80,000 reservoirs for hydroelectricity as well as irrigation, navigation, and flood control. It is unlikely that China's claim of the Tibetan plateau, the headwaters of many large rivers, is a lucky coincidence. The struggle for water is well summarized by Wang Shucheng, China's former minister of water resources: "To fight for every drop of water or die, that is the challenge facing China."

In 2003, the Nu River Valley was identified by the Yunnan Huadian Nujiang Hydropower Development Company (hereafter, Huadian) for potential dam development. A series of 13 cascading dams has been proposed by Huadian on the Nu River, which had escaped earlier selection as a hydropower basin due to its remoteness and inaccessibility. The proposed 13 dam cascade would flood villages and communities of indigenous peoples, requiring the relocation of over 48,000 people (McDonald 2007). Brown et al. (2008) estimate that the theoretical hydropower potential of the river within China is 36,400 megawatts (MW), 21,000 MW of which are considered exploitable via the 13 proposed dams.

The Nu River region is home to 22 ethnic groups with their own languages, cultural traditions and religious practices (Brown 2008). Of the 55 minority nationalities in China, 25 are found in the Yunnan Province (Chen et al. 2003). The major ethnic groups in Nujiang Canyon are the Lisu, Nu, Dulong, Bai and Tibetan (ibid). The area that the Nu River flows through is poorer, more agricultural, more dependent on government subsidies and more ethnically fragmented than other dam project locations, making this region more acutely vulnerable to negative effects of dam construction (Brown et al. 2008). No formal social surveys of the populations of the Nu River Valley have been undertaken, so it is difficult to assess the likely impact of the dam project (ibid). The Beijing-based NGO Green Home conducted interviews in the Nu River region in 2006 to gain better understanding of the dam projects and the concerns of the local residents toward the project. The results of these interviews are recounted in Brown, et al.'s paper showing generally negative attitudes toward the possible dam construction. Because of the fragility of the environment, culture and economy of the region, the authors advocate a careful and determined social and environmental impact assessment before construction be allowed to continue.

The Nu River originates in the Tibetan Plateau and flows south through Western China, Myanmar and Thailand, where it is known as the Salween River. In northwest Yunnan Province, the Nu has cut an impossibly steep gorge, known as China's Grand Canyon, creating a diversity of climates, including a subtropical zone at the river's edges and an alpine zone at the top of the adjacent peaks. There are an estimated 6000 plant and animal species that live here, representing 25-33% of all the known plant and animal species in China (Huang 2003, as cited in McDonald 2007:23). Of these, 1397 are listed protected species (ibid). Additionally, there are 48 species of fish in the Nu River, 70% of which are endemic to the river, and four of which are listed as endangered species (ibid). The area has been declared a Conservation International Biodiversity Hotspot and the United Nations Educational, Scientific and Cultural Organization (UNESCO) has said that it may be the most biologically diverse temperate region

on earth (<http://whc.unesco.org/en/list/1083>). In July 2003, it was designated a UNESCO World Heritage Site.

When plans to build dams on the Nu River were announced, they caused an international outcry that led Premier Wen Jiabao to suspend operations for the projects in 2004. Warnings from UNESCO that the dams would endanger the Three Parallel Rivers World Heritage Site and fierce opposition from downstream nations led to downscaling of the hydropower plan from 13 dams to just four. Despite the official suspension status, I witnessed site preparation and construction at multiple locations during my visits in August and December, 2008. In May of 2009, Beijing made the decision to halt construction on the Liuku hydropower station on the Nu River, calling for further environmental and social reviews before construction is allowed to proceed.

Study site

The Dimaluo River flows into the Nu River in Gongshan County. Straddling the Dimaluo River is a village of about 2,000 people that has been there for several hundred years. The village is named for the river and is made up of 13 natural villages, smaller villages comprised mostly of close kin (see Figure 1 below for village location). There is a dirt road leading to the main village from the highway that parallels the Nu River, and the village can be reached by a 45 minute truck ride or 2 hour hike along this road. The residents of Dimaluo are an interesting cultural and ethnic meshing of Tibtetan, Nu, Lisu and Han ethnic groups. Many people are of mixed blood and speak several languages. Regardless of ethnic background, most people claim to be Tibetan, but they are also predominantly Catholic since missionaries came to the Nu River Valley approximately 150 years ago. The people of Dimaluo are subsistence farmers who have been living off the land for generations. Most have some elementary school education and few go

on to college. In the recent ten years, the village has seen large changes and improved quality of life with the introduction of electricity, piped water and satellite television. Along with these technological improvements have come problems like alcoholism and disease.

The people of Dimaluo lived a hard-working but comfortable life from what I observed. Children attended elementary school in the main village and would return to their homes in upper villages on the weekend. Junior high school students traveled further to Wuqu, about 45 minutes by truck, and high schoolers had to go all the way to the county seat, Gongshan. Though I observed illness and disease in the village during the four weeks I was there, overall, people seemed strong and healthy. There were at least two medicine shops in the main village where one could speak with a knowledgeable pharmacist and obtain quality western medicines. Each natural village had water piped from springs to a cistern, from which some households ran a second line directly to their home. This water was clean and safe to drink (I drank the tap water my entire stay), though Chinese people are not in the habit of drinking cold water. The house that I stayed in was certainly one of the better off households, as we had two refrigerators, a clothes washer, satellite television and a propane stove, and meat was part of at least one meal a day.

A dam is under construction and nearly completed downstream of the village on the Dimaluo River. It has been under way for several years now and site workers could not tell me the reason for the delay. Several households had already been displaced to Wuqu, the nearest city on the highway that runs parallel to the Nu River, and the reservoir was projected to reach just below the main village. Much valuable agricultural land will be lost and additional households will be displaced once the reservoir is filled. I returned to Dimaluo in December 2008, three months after I had last been there, and saw the progress on the reservoir preparations which was heart-wrenching. The river valley had been dug out into a U-shape, all trees and plants had been eliminated and bulldozers continued to push around gravel

and soil. My host, Aluo, said that he had not walked down in the direction of the dam for many weeks because it was too hard to see the natural landscape being devastated. Residents have not been informed of how the dam is going to affect them, and those that have been displaced to the nearby city are already running out of money.

Another major development project impacting Dimaluo, is a new highway that will connect the Nu River Valley to the neighboring valley, the Lancang, as the Mekong is known in China. On the other side of the mountains, Shangri-la offers paradise in the foothills of the Himalayas and attracts so many visitors that residents have begun complaining of the congestion and overcrowding. In 2007, over three million tourists visited the fabled Shangri-la region of Yunnan (Lim 2007). Currently, the only way to reach Shangri-la from the northern end of Nu River Valley is to trek by foot, a 2-4 day adventure under hospitable conditions. In order to increase tourism and facilitate movement between river valleys, a new highway is being built. Once completed, visitors will be able to make a loop traveling up the Nu River Gorge, crossing over the mountains to Shangri-la and return to main transportation hubs like Dali and Lijiang. The two valleys will be connected and it is hoped that visitors to Shangri-la will branch out to the Nu River Valley, giving the economy a boost and providing a reason to develop infrastructure to villages and small towns. The highway will cut through the eastern side of the Dimaluo valley, displacing households, destroying valuable farmlands and causing further erosion of precious soil.



Figure 1. Location map of Yunnan and Dimaluo

Literature Review

Water myths and legends in other places

This spring, I visited Crater Lake for the first time and learned the Klamath Indian legend that tells the origin of Wizard Island, the small landmass in the sacred lake. The places and characters in the legend are immortalized in features, Llao rock, the massive gray lava flow on the north rim of the lake, and Skell Head, a headland on the east side. This legend describes the war between Llao, chief spirit of Crater Lake, and Skell, a mighty spirit of the Klamath Marsh country to the south. I share this story here and now as an example of how a water body creates a sense of place, permeating the values, beliefs and identity of the people who live near there.

Long, long ago two powerful spirits lived in the Crater Lake country, Llao and Skell. The spirit followers of Llao and Skell took the form of animals such as Deer, Fox, and Dove who often played together on the top of Llao Rock. But eventually, the groups began to quarrel, and war broke out.

The forces of Llao and Skell fought many battles. Skell was killed near the base of the mountain, and Llao's followers carried his heart up to Llao Rock for a celebration. However, Skell's clever followers stole the heart and restored it to the body, bringing Skell back to life.

During the last great battle, Llao was killed. Skell ordered that the body be cut up and thrown into the lake to be devoured by Crawfish and other monsters. The water creatures were loyal to Llao, but Skell tricked them by shouting, "Here are Skell's arms," as he tossed Llao's arms into the water. Immediately the creatures gobbled them up. In the same manner Llao's legs were devoured. But when Skell flung Llao's head into the lake, the water creatures recognized their master's face and would not touch it.

You can still see Llao's head, known today as "Wizard Island". And his spirit still lives within Llao Rock. Sometimes when all seems quiet, Llao's restless spirit enters the lake and stirs up an angry gale. (www.untraveledroad.com)

Alan Dundes, beloved professor of folklore, explains the important connection between folklore, like legends and myths, and identity of an individual and a group. He argues that folklore is perhaps the most important vehicle for the communication of a group's relationship with cultural elements (Dundes 1999:8). Sense of place is based on symbolic meanings attributed to the setting (Hummon 1992; Greider and Garkovich 1994; Williams and Stewart 1998). A straightforward approach to defining sense of place is to think of it as the collection of meanings, beliefs, symbols, values, and feelings that individuals or groups associate with a particular locality (Williams and Stewart 1998). Tuan (1977) defines a place as a "center of meaning or field of care." Myths, legends and stories connote meaning and value to spaces, thereby making them places.

In Tibet, according to the indigenous Bon tradition, people believe that mountains, lakes, ponds, springs and rivers are the dwelling places of the protector gods and have named these places after the deity inhabiting it (Choezin 2003). All mountains and lakes have at least one legend surrounding it. The sky-touching mountains are believed to be stairways to heaven and the crystal clear lakes gateways to the underworld realm (ibid). Lakes are widely revered as the abodes of female deities and some lakes are believed to reveal prophetic visions and have helped to identify the next incarnation of Lamas including the current Dalai Lama (ibid). According to pre-Buddhist Tibetan beliefs, lakes are often considered the dwelling place of *bla* (roughly translated as soul or life-force) upon which the health and life of a person, community or even entire nation depends (Tsering 2005). Thus, the protection of sacred lakes from pollution and harm is considered crucial for the well-being and survival of the land and the people (ibid). These beliefs show how lakes, ponds, springs and rivers are vital components of both place and self.

Speaking through Badger in his story *Crow and Weasel* (1990), Barry Lopez tells us that "the stories people tell have a way of taking care of them. If stories come to you, care for them. And learn to give them away where they are needed. Sometimes a person needs a story more than they need food to stay

alive. That is why we put these stories in each other's memory. This is how people care for themselves." Stories about places remind us to protect and take care of them just as we would ourselves. "To feel the sense of place, of a bounded and definite space, involves a sense of *relationship* with that place, of a very specific *responsibility* toward that place, as a unified whole—people and place together" (Cordova 2007:192, emphasis in original)

In *The Places of Stories* (1995), Robert Archibald celebrates the fact that "we are born with the capacity for speaking with words, for telling stories, for describing who we are, and for remembering." Archibald states plainly that place and story are inseparable. By giving places a name and a story we call them into existence. He continues:

We create ourselves from stories that conjoin us to places; bind us to each other; blend individual and communal identities; and provide definition, context and continuity, perspective, and personality. These stories of ourselves are works in progress until death.

In a historical account of the Columbia River, William D. Layman (2002), reminds us of the river's role in our lives and how it connects us with our personal and collective histories. Layman says, "By learning the river's story, we understand our own." Personal attachment to geographically locatable places gives a person a sense of belonging and purpose which give meaning to his or her life (Proshansky 1983). It is only when one's sense of place is threatened or lost that he or she becomes aware of it (ibid).

Water is connected to self and identity

Keith Basso spent years living, working and cowboying with the Western Apache and participated in a project that aimed to locate every place that bears an Apache name and represent them in a map for Cibecue residents in their own language. He shares the story of his experience in *Wisdom Sits in Places*

(1996). He learns the names of places, that commemorate the events that took place there and convey morals and lessons, like Snakes' Water, a dry spring circled with rocks; Green Rocks Side By Side Jut Down Into Water, a group of mossy boulders on the bank of a stream; and Gray Willows Curve Around A Bend, a point on a stream. Basso explains that for the Western Apache, features of the earth, like water bodies, contain the past and reach into their lives and shape the ways they think and so "knowledge of places is therefore closely linked to knowledge of the self, to grasping one's position in the larger scheme of things, including one's own community, and to securing a confident sense of who one is as a person" (Basso 1996: 34). According to Basso, for the Apache, "the people's sense of place, their sense of their tribal past, and their vibrant sense of themselves are inseparably intertwined" (1996:35). I would argue that this is true not only for the Western Apache, but for all people, especially those who live in close relationship with the land.

Viola Cordova tells us that it is not only Native Americans that have a strong sense of place but most indigenous peoples, have a concept of place that is the foundation of cultural mooring and values. She states "it is not simply 'the environment' that they accidentally 'occupy'—they are the children of that place. There is no such artificial distinction between themselves and some alien 'other' that is termed 'nature'" (Cordova 2007: 197). Basso states that "what people make of their places is closely connected to what they make of themselves as members of society and inhabitants of the earth" (1996:7).

Momaday (1994:1) echoes the link between place and identity: "From the time the Indian first set foot upon this continent, he centered his life in the natural world. He is deeply invested in the earth, committed to it both in his consciousness and in his instinct. The sense of place is paramount. Only in reference to the earth can he persist in his identity."

Not only indigenous people have a strong sense of place created by lakes, creeks, springs and rivers. *Writing our Watershed* (ed. Gail Oberst 2008) is a book of stories by people who live in and love the

watersheds of Ash Creek and the Luckiamute River, Oregon. Farmers, scientists and professionals share their stories of how the creeks and rivers in their lives have made them who they are today and what these waters mean to them. Ron Nestlerode speaks of the Fuller Creek watershed that he has known intimately all his life. “The watershed is my connection to the universe...I am connected to my watershed physically, mentally and spiritually” (Oberst 2008:13-14). The centrality of a particular body of water to one’s sense of self can be forgotten until it is no longer there. Meg Artman, a recent transplant to Oregon from Milwaukee talks about leaving Lake Michigan and having to say goodbye to her lake. Now in Oregon, she has not found her water and explains “I yearn for water; I yearn for my lake. I briefly see the Willamette on my way to work, but it’s not the same. I go running in Wallace Marine Park, and stop to stretch by the river, but it’s not the same. I don’t feel peace. Instead, I feel loneliness and an aching I can’t place; I don’t feel at home” (Oberst 2008:59).

Consequences when sense of place is lost

Artman voices the emotional ramifications of a loss or disruption in sense of place. A study of displaced residents in an urban area of Boston showed clear evidence of powerful and widespread grief and mourning, which can be devastating and lead to depressive and dissociative phenomena (Fried 2000). When we are deprived of our place attachments and find ourselves literally dislocated in unfamiliar surroundings, only then does sense of place come surging into awareness. “It is then we come to see that attachments to places may be nothing less than profound, and that when these attachments are threatened we may feel threatened as well. Places, we realize, are as much a part of us as we are part of them, and senses of place – yours, mine, and everyone else’s – partake complexly of both.” (Basso 1996: xiii-xiv)

In a study of the disorders that follow the rupture of person-place relationships, Fullilove (1996) proposes that the sense of belonging, which is necessary for psychological well-being, depends on strong, well-developed relationships with nurturing places and that a disturbance in these essential place relationships leads to psychological disorder. Sense of place and belonging, Fullilove explains, arise from familiarity, attachment and identity, and when these are ruptured by displacement, disorientation, nostalgia and alienation ensue. Sense of place is disturbed both by displacement of people from their home and by change in or development of the physical landscape. Urry (1995) notes that place myths are not eternal as the conditions of the physical setting may change and no longer support the myths. Sense of place is maintained only as long as the conditions make it plausible (Relph 1976). Fitchen (1991) states that holding onto place meanings may become increasingly more difficult if the gap widens between the meaning and the physical characteristics of the setting. Myths, legends and other stories about local water bodies create a sense of place and identity. When displacement occurs, this sense of belonging is lost and causes psychological disorders like disorientation, grief, depression and anxiety.

Methods

Data Collection

In the summer of 2008, I spent one month living in the main village of Dimaluo. During this time I spoke casually with people about their relationship with water, observed their daily use and interactions with water and also conducted semi-structured interviews with 18 people. I was assisted by an interpreter, the nephew of my host, who spoke excellent Mandarin since he had lived in Beijing and Nanjing.

Interviews were conducted in a combination of Mandarin, Tibetan, Nu and Lisu languages, depending on the preference of the interviewee. Most people were interviewed individually, but there were a couple instances where a husband and wife were interviewed together. When necessary, my interpreter translated their words into Mandarin and I took notes in English. Thus, all results have undergone one to two translations and have inevitably lost some of the original meaning.

Because my goals were similar to his, I used Aaron Wolf's research about the Berbers and the Bedouin (Wolf 2000) as a model for my own, borrowing his methods to tap into the knowledge of indigenous cultures. His methods were simple – he traveled within each community and asked two sets of questions as widely as possible (ibid). I began interviews with a set of questions intended to gain insight into his or her relationship with water:

- Where are there water sources? Which ones do you use?
- What stories, superstitions, or beliefs do you know about water?

Because the majority of people in Dimaluo are Catholic, most superstitions, beliefs and rituals surrounding water have been lost and these questions were difficult for them to answer. When there was no response to this set of questions, I would ask:

- What personal experiences do you have with the river?
- How would things be different if the river were not here?

In general, my interview strategy was not successful. The word I had been using for story was confusing for people, including my interpreter. I did not think to be more specific by using the terms legend, myth, or folktale and was also limited by my vocabulary. It was only after church one day when a man told me about many water bodies that had myths about them that my interpreter understood what I was looking to learn: myths, legends and beliefs about water. Once this was understood, my interpreter selected people that he believed would know these myths and legends for me to interview and things went much more smoothly.

Data Analysis

Interview notes were coded into the following categories:

- ❖ myths,
- ❖ legends,
- ❖ knowledge of specific water bodies (no story attached),
- ❖ personal experience stories,
- ❖ people's comments, feelings and knowledge about water

Stories were coded into folktales, myths and legends based on William Bascom's definitions in "The Forms of Folklore: Prose Narratives," (1965, see Table 1 below). A folktale is a prose narrative that is regarded as fiction. A myth is a prose narrative that, in the society in which it is told, is considered to be a true account of what happened in the remote past. A legend is a prose narrative which is regarded to be true by the narrator and his audience, but it is set in a period considerably less remote, when the world was much as it is today. I believe that the stories that were told to me by the people in Dimaluo

were regarded as true and therefore sacred. Thus, I have not deemed any of their stories to be folktales, which are fictional by definition, and have categorized the stories as *myths* and *legends*, according to Bascom's definitions. There were a few instances where villagers told me about specific water bodies but there was no story attached. For example, a man told me about a creek that always runs muddy, but he did not tell me anything else about it. There was no moral or fable connected to the existence of the creek. Such instances were coded as *knowledge of specific water bodies*. Many people told me stories about a *personal experience with water*, like a near drowning and landslides caused by heavy rain. People's comments, feelings and knowledge about water were coded into a separate category.

FORM	BELIEF	TIME	PLACE	ATTITUDE	PRINCIPAL CHARACTERS
Myth	Fact	Remote Past	Different world: other or earlier	Sacred	Non-human (often gods)
Legend	Fact	Recent Past	World of today	Secular or sacred	Human (heroes)
Folktale	Fiction	Any Time	Any Place	Secular (non-sacred)	Human or non-human

Table 1. Definition of myth, legend and folktale (adapted from Bascom 1965)

Results

While all the categories of stories mentioned above contribute to a sense of place in Dimaluo, I would like to focus on myths and legends since they communicate values and morals that have been passed on through generations by oral history. Personal experience stories are also included because these lived experiences are what make spaces into “places” as they become imbued with meaning (Tuan 1977). The myths, legends and stories below demonstrate how water creates a sense of place in Dimaluo by giving meaning and value to the place and people.

Myths

An elderly couple in Caidang, one of the natural villages in Dimaluo, told me a legend about the origin of water when I visited their home. The legend recounts an epic battle between two witches, one from Congni, a natural village in Dimaluo, and the other from Cizhong, a village on the other side of the mountains. I will retell the story to the best of my ability, bear in mind that this has undergone two translations and crossed cultures:

There was a man from Congni that could perform miracles. One day he took a flower’s child princess from her home in the hill above Baihanluo over the mountains to Cizhong to sell her. In Cizhong, the man met another sorcerer who bought the princess. When the man returned home, he found that the princess was also back home. The sorcerer from Cizhong came to find the man because the princess had disappeared. The two sorcerers fought an epic battle. The man from Congni took a rope used for carrying baskets, whipped a log and turned it into a snake. His opponent wrote scripture on a piece of paper which floated into the air. The snake ate the paper, showing superior magical strength, which caused the Cizhong man to surrender. But, before he was defeated, the Cizhong sorcerer buried a sacred book at a flat spot in the earth and cursed it causing a massive landslide that buried the village of Congni. This is the reason there is water there now.

The same elderly couple told me a story about a muscle man who threw a huge rock, bigger than a house, to claim the spot for his own and created a meadow. This meadow is above the natural village of Baihanluo, the same place there the flower princess lives.

I heard two versions of a story about the TuDiGong, spirit of the earth, changing the course of the river using a whip. In one version, the Nu River was going to flow through Dimaluo, but the TuDiGong said “I don’t want to eat fish” and then whipped the river to BingZhongLuo, the nearest city to Dimaluo, that is indeed on the Nu River. In another version, the TuDiGong, whips the Jinsha River where it flowed close to Dimaluo and changes the course of the river to where it is now on the other side of the mountains. This is evident in the current flow of the Jinsha river; it flows south towards Meili Snow Mountain but then takes a hard right turn to the east.

I heard a superstition that fish that are caught by people from Pengda cannot be given to Dimaluo people. If this happens, then Pengda people will no longer be able to catch fish. My interpreter explained that this superstition may be related to the myth of the TuDiGong whipping the river. These are myths about places within and close to Dimaluo that explain why the land and water are as they are and create a sense of place by giving meaning and significance to the landscape.

Legends

The legends told to me by the villagers of Dimaluo are set in a period considerably less remote than that of myths. Purity is theme common to legends about lakes and springs in Dimaluo. These legends speak to the purity of water and the importance of showing reverence to water.

A 53 year old man who lives in Congni told me stories about many water bodies by the basketball court after church one Sunday. He was the first to share legends with me and once my interpreter heard these he understood what I was looking to learn. I am so grateful to this man who was the first to share stories with me. Below are some of the stories that he shared with me:

There is a lake a day and a half's walk from Dimaluo that is very pure. It is called Nalashika in the Nu language. This lake is so large that it takes half a day to walk around it. If a person speaks loudly when near the lake, or dares to throw rocks into it, it will immediately starting pouring rain.

Dabadi Hu, which means lake in terraced land in the Lisu language, is a lake near the Dulong River. In this lake there are big fish but once a person gets near the lake, the wind and water swell so big that it's not possible to catch the fish.

There is a lake south of Gongshan, the county seat, in the mountains isolated from any human inhabitants. At night, one can see a glowing object in the middle of the lake.

Once my interpreter understood that I was looking for legends and myths about water, he took me to his home village, Caidang, to meet with people he knew would know such stories. His mother's older sister told me many stories that echo the theme of water being pure and not to be dirtied:

Namtsuo lake is the purest water. If one throws rocks or dirty things into the lake, it will immediately start raining and freeze people to death.

There are two lakes on the other side of the valley at the outlet of Namtsuo lake. They are a mother lake (*mu*) and a male lake (*qumtsu*). It is said that if a person who is unclean dares to cross the outlet, the water will rise and wash the person downstream. This inlet of this lake is very small while the outlet is quite big, yet the size of the lake remains the same.

Another version of this story takes place before the valley was inhabited by people, before there was farming and clothes. In this story, a man crossed the lake at the outlet and within seconds the water grew so big that it washed him far downstream. The blanket that he had been wearing as a shirt was washed off.

Other legends told to me by the aunt of my interpreter:

At the top of CaiDang, there used to be two lakes. A long time ago, this river valley was inhabited by Nu people, but there were very few. Then people came from Deqin and settled here. They washed clothes in the lakes and threw things into the water, dirtying the water and causing the lakes to disappear. At that moment, people saw a white bird and a red rooster fly towards India. You can still see the depressions where the lakes used to be.

There is a lake called Shelalaka Lake and in the middle of this lake there is a pear tree. The outlet where the water flows out looks like it has been carved by man. This lake was created when dinosaurs lived.

A similar story was told to me by the first man who shared stories with me:

Cuna lake, which means black lake, is a lake in a Tibetan area. The water of the lake is very dark and in the middle of the lake there is a huge snag that is the remains of a very large pear tree. Pear trees usually do not grow at such a high elevation and it is thought that this tree was alive when dinosaurs were alive and there was water everywhere. This lake is about 2 days' walk from Dimaluo.

There are also ghost stories associated with lakes in Dimaluo. People walking by the lake near Alulaka will get lost while going home. Some people have disappeared for several months, taken by ghosts. A man that I met was walking past this lake at night on his way home when he felt his finger being pulled by an invisible force that dragged him around the lake many times before finally letting go. He was too scared to go home and cross the lake again, so he ran back to Alulaka.

My interpreter's uncle, age 68, who also lives in CaiDang told me two wonderful stories. One is a legend and the other is a personal experience that I find particularly interesting. The first demonstrates fear and reverence for the river and the second speaks, again, for the purity of water.

Sometimes the Dimaluo river will be very loud, several hundred times louder than usual. This is the sound of the river god laughing. In the next few months to a year, someone will lose their life to the river.

There is a spring in CaiDang that was so clean and pure that, when I went to wash my hands, burnt me and left blisters on my hands. Now the water is dirty and no longer has the power to harm people. This spring is at the grave site of a female deity in Tibetan Buddhism.

A 67 year old man in QiMaTang, a natural village downstream from the main village of Dimaluo, shared stories with me, surrounded by pigs and roosters in the courtyard. He told me that they used to have many superstitions that led people to take good care of the forests, but now people no longer believe these superstitions and have cut down all the trees.

There are two lakes, a female and male, at the top of the hill above this village. In these lakes there are giant conches that eat grass.

All mountain lakes are very clean and are sleeping. If a person goes there and throws rocks or speaks loudly they will disturb the lake from its rest. The water will swell; there will be thunder and lightning, hail, strong winds and pouring rain.

Dimaluo used to be a dense forest, a virgin forest with huge old growth trees. People would come from far, far away to hunt because there were many different kinds of wild animals that lived here. The hot spring down the road from Qimatang attracted antelope who like to drink the warm water. Hunters knew this and would wait there for the antelope. One year while on a hunting trip to the Dimaluo valley, the Nu hunters scattered highland barley seeds. When they came back the next year they saw that the plants had matured. This place was decided to be a good place to live and so they moved here to live. Many people moved here, cut down trees to build houses and changed the land. The land was impacted so much that the hot spring is no longer hot and antelope do not come to drink its water.

A common theme that runs through many of the stories about water that I heard is that water is pure and to be revered. Many stories explain the disappearance of a lake or altered quality of a spring by pollution or carelessness of local people. The Western Apache come to a similar conclusion when they find that a once plentiful spring is now dry (Basso 1996). It is interpreted as “a punitive response, wrought by Water itself, to something the people had done. There *had* to be a reason for what was taking place, and the one most likely adduced, because it was the simplest and farthest-reaching, was the Water had been offended by acts of disrespect...Maybe...the people were greedy, taking from

springs and streams more than they needed; maybe they were wasteful, throwing water away they should have been careful to save; or maybe they ceased doing everything correctly, neglecting in haste or forgetfulness to give repeated thanks to Water for giving of itself” (Basso 1996:16-17, emphasis in original).

Personal Experiences

There are some personal experience stories that I find noteworthy because as Tuan (1977) explains spaces become “places” as they become imbued with meaning through lived experience. Most of these stories are about drownings, their own near misses or others’, and one landslide in particular that buried a natural village.

My friend, a young lady whose house was on the edge of the central plaza, told me that each year several people drown in the Dimaluo River. When she was about 10 years old, her cousin of the same age was swimming in the Nu River near Bingzhongluo and drowned. She herself has never swum and fears the river. I was surprised to hear that so many people drown each year and when I asked an elderly woman about drownings, she told me about five instances in her lifetime where people had drowned. She could tell me the exact circumstances under which each person drowned in the Dimaluo River. Three were fording the river and a fourth fell off a bridge. The fifth instance is unclear; it is possible that the person was drunk. Based on what this elderly woman told me, it seems that drownings are notable occurrences and not so common that they happen every year. My neighbor, an old lady of 68 years, told me that her grandson used to swim in the river during the summers. She would scold him for it because she was afraid that he too would be lost to the river. The couple that told me many legends about lakes and springs had a daughter who drowned in the river. They did not share this story with me, but my interpreter, who was their relative, told me.

After a month of rain in the fall one year, a huge landslide occurred and buried an entire natural village. It is said that an entire small mountain slid with such force that it hit the mountain face across the river and came back. Thirty to forty houses were lost, and 16 or 18 people were suffocated by the debris, depending on who you ask. There were two survivors, both young children. One child was thrown into a tree by the force of the slide and another was in the outhouse, protected from the mud and rock. According to one person I interviewed, one of the survivors was completely buried except for his hand, which allowed him to be found and dug out. He was fine except for losing his ear. My neighbor's mother was buried in this landslide and she said that rain and the potential for landslides scared her. This landslide occurred recently enough (in 1979 or 1982) that people still talk about it. One woman is scared every time it rains.

A very old lady from Baihanluo told me that the Dimaluo River used to be very small, only about one foot wide, until the landslide happened. She told me that they crossed the river, but then couldn't get back. When the debris from the landslide fell, the resulting lake was several hundred meters long and deep. It took about one year for the debris to wash away, and then the river was as it is now, about 40 feet wide in most places.

One man told me about the small lake in Shiyonggong, one of the natural villages of Dimaluo, that everyone used to swim in when he was a child. But people didn't respect the lake and polluted it, so it is now dry.

The places and events spoken about by the people of Dimaluo, whether factually accurate or not, are their stories. The things we talk about, the stories we tell are a part of us. Humans ascribe meaning to space on the basis of their experiences (Tuan 1977). Greider and Garkovich (1994, emphasis in original) assert "landscapes are the reflections of these cultural identities, which are about *us*, rather than the natural environment." Similarly, in the case of the Western Apache, stories about the land are "a

repository of distilled wisdom, a stern but benevolent keeper of tradition, an ever-vigilant ally in the efforts of individuals and whole communities to maintain a set of standards for social living” (Basso 1996:63). The features of the landscape, lakes, springs, ponds and creeks, are symbols and reminders of the identity and moral character of the people.

Discussion

You could not step twice into the same rivers; for other waters are ever flowing on to you.

- Heraclitus of Ephesus

In the last twenty years, some two hundred million people have been displaced or resettled as a result of development projects (Cernea 2000:11). Physical displacement due to large dam construction alone could range from 40-80 million, according to the World Commission on Dams (2000: 104). Dams in China have displaced 10.2 million people, comprising 34% of all development-related displacement, between 1950 and 1990 according to official statistics, but independent sources estimate that the actual number of dam-displaced people in China is much higher since 10 million were displaced in the Yangtze Valley alone (ibid) and the Three Gorges project involves the relocation of over 1.2 million people over a 17-year period (CWRC 1997; Jing 1997). Resettlement is all too often seen as an external cost, and not planned as a development exercise, with the result that what should be resettlement with development becomes reduced to relocation with minimal (if any) development (de Wet 2006: 10). Resettlement programs have predominantly focused on the process of physical relocation rather than the social and cultural development of displaced people, resulting in impoverishment for the majority of resettlers from dam projects across the world (Cernea 2000). Researchers have connected displacement with psychological and emotional disorders engendered by a loss in sense of place and rootedness (Fried 2000; Brun 2001). The legends, myths and stories in Dimaluo demonstrate the sense of place created by water bodies. Development projects, like large dams and highways in Dimaluo, displace people from their homes and change the landscape, thereby disrupting sense of place and causing depression, anxiety and other mental disorders.

Mental impacts of resettlement

Cernea (1990) has said that the involuntary resettlement of large numbers of people due to major water development projects is “the single most serious counterdevelopmental social consequence of water resource development” and Fried (2000) reaffirms that “forced displacements are among the most serious forms of externally-imposed psychosocial disruptions and discontinuities.” Cernea (2000) reports that while there is almost universal agreement that dislocation is stressful and leads to social pathologies, mental health issues have been virtually absent in displacement and resettlement studies. Negative health effects have been shown in both physical realms (Bodley 1982; Cernea 1988; Chambers 1969; Fahim 1981; Scudder and Colson 1982) and psychological realms (Beiser 1982; Berry and Annis 1974; Scudder 1975; Werner 1985). In a study of older resettlers forcefully displaced by a hydroelectric dam project, Kedia and van Willigen (2001) found that older people were more likely to manifest symptoms of depression and anxiety caused by nostalgia for their homes, alienation from the new economic base, disrupted social interaction due to families being physically separated, and feelings of helplessness in the new circumstances. Resettlers believed that they had left their local deities and ancestral spirits when they left their mountain homes and the wrath of these spirits compounded their mental distress. These problems were exacerbated since displacement had also separated resettlers from their traditional means of treating mental ailments: traditional healers, neighbors, friends and relatives. This is a prime example of psychological disorders being caused by a disruption to sense of place caused by displacement.

The mental health of refugees, people who have been forcibly uprooted due to persecution, war or violence as opposed to development, is better studied than that of people displaced by development projects. I would argue that losing one’s home is traumatic no matter what the circumstances and that

the impacts of development induced displacement and resettlement (DIDR) are just as serious as those experienced by refugees. Drachman (1992) reported in her study of Haitian, Southeast Asian and Soviet refugees that numerous losses are accumulated by refugees before they leave their homes, during flight and first asylum, and during the resettlement process. In a study of Cambodian refugees by Bernier (1992) a similar pattern of severe loss was found, including destruction of home and community, and complete separation leading to long-lasting emotional problems. Fried (1968) has reported that individuals and families who have been displaced due to economic development programs grieve for their lost homes and mourn the destruction of emotional and social supports that are inherent in the fabric of most neighborhoods and communities. The above studies enumerate instances of loss which is associated with depression, anxiety and somatic complaints (Ahearn Jr. 2000). Croatians who lost their homes and social and cultural environment showed high levels of anxiety and depression (Kondic and Marvar 1992). This paper has shown how identity is tied to place and water specifically and argues that this loss of identity leads to depression and other mental illnesses witnessed in displaced peoples.

Problems with resettlement policy

de Wet (2006) asserts that we need to temporarily take step back from the undisputed need to restore incomes and improve outcomes and look afresh at what constitutes resettlement and what it involves in strictly sociological terms. He explains that there are two broad approaches to answering the question why forced resettlement so often leaves resettled people economically, socially, and psychologically worse off than before: the 'inadequate inputs' and the 'inherent complexities' approaches (de Wet 2006: 181-190). The first is largely associated with the initiatives and policies of the World Bank and can be summarized as arguing that resettlement goes wrong principally because of a lack of the proper inputs: national legal frameworks and policies, political will, funding, preresettlement surveys, planning,

consultation, careful implementation and monitoring. It is the lack of these inputs that gives rise to what Cernea calls the eight principal 'impoverishment risks': landlessness; joblessness; homelessness; marginalization; food insecurity; increased morbidity; loss of access to common property resources; and community disarticulation (Cernea 2000:20). This approach, de Wet explains, is basically optimistic in tenor since it argues that impoverishment risks can be controlled through a reform of policy and procedures that will ensure that all necessary resources be provided.

In contrast is what de Wet calls the 'inherent complexities' approach which argues that the interrelatedness of cultural, social, environmental, economic, institutional and political factors, all of which are taking place in the context of imposed spatial change and of local level responses and initiatives, leads to a complexity in resettlement. Thus, a more comprehensive and open-ended approach than the predominantly economic and operational perspective that is widely held is needed to examine the risks and dynamics in a resettlement project. I recognize that accommodating complexity, including sense of place, is by no means an easy task, but it is necessary if development is to be truly for the greater good and not at the expense of an unfortunate few. Resettlement must be seen as an upfront development initiative in its own right and approached in such a way as to empower those involved creating choices and options (de Wet 2006:207). We must be willing to push as hard as possible for development without resettlement and be more selective as to which resettlement projects we support or facilitate (ibid).

Is sense of place transferable?

If people must be relocated, is it possible to recreate or re-establish sense of place in a new location?

Anthropologist Devon Pena has written about the South Central Community Garden in Los Angeles, an

urban farm created by Latino immigrants and native peoples--Nahua, Seri, Yaqui, Mixtec, Tojolobal, Tzeltal, Chontal, Zapotec, and many others—that has allowed them to preserve the cultural practices of home in a new location. In his conversations with farmers, all have told him that the most important value of the garden is its ability to make the U.S. feel more like home by making an alien space into a home space, complete with familiar plants and ingredients needed for a traditional cuisine and diet. Pena spoke with one gardener at South Central, a 30 year-old Zapotec woman who explained: “I planted this garden because it is a little space like home. I grow the same plants that I had back in my garden in Oaxaca. We can eat like we ate at home and this makes us feel like ourselves. It allows us to keep a part of who we are after coming to the United States.” The garden is a place for the telling of personal stories in a strategy to maintain cultural identity and allows for a transnationalization of a sense of place (Pena 2006). Pena claims that these gardens are also iconic spiritual and political symbols of a re-territorialization of a place as home by transnational communities.

The gardeners in South Central have taken control of their identity as a people and community in place through autotopography, a term coined by Pena that he describes as the process of self-telling through place-shaping or place-making. Pena’s research shows how immigrants and native peoples have been able to re-territorialize and recreate a sense of place. How then, might people displaced by development be able to re-territorialize or recreate a sense of place in a new location? What measures might be implemented to assist people to carry with them sense of place? Pena’s research shows that it is possible to transnationalize place-making by importing the cultural landscape, vernacular architecture, biotic baggage, and cognitive mapping traditions of point-of-origin communities. But there is a difference between voluntary migrants and forcefully displaced resettlers, and there is also a limitation in what people can bring with them. The gardeners of South Central were able to cultivate crops and foods so that they could eat like they did at home, but they weren’t able to bring the landscapes of home. Legends, myths and stories are easily carried, but we have already heard how they are not

eternal as the conditions of the physical setting may change (Urry 1995) and when people are far removed from the places it leads to nostalgia and longing (Brun 2001).

Viola Cordova tells of Native Americans and the insecurity about identity they feel when they leave home. She states that “the sense of home is not the culture, not the food, not even the many relatives. It is the place; the look of early morning; the smell of the juniper; the particular expected temperature for the kind of day it is, for the time of year it is; the mountains being in the right place. There is an assurance of being in the right place and being recognized by others as ‘not a stranger’ even if they do not know who you are” (Cordova 2007:200). Native Americans, who have been displaced from their homes, suffer from a high suicide rate, low life expectancy and high rate of poverty. Cordova claims that what Native Americans have not lost after hundreds of years of enforced assimilation, what makes them who they are, is a sense of place. Even “after many indigenous persons had lost their native languages and no longer adhered to ritual in daily life, was a set of values instilled in childhood and reinforced by the Native communities” (Cordova 2007:193) and their belief that they are made for the Earth, the Earth is not made for them. Cordova’s definition of sense of place seems to be lessons and values taught to us by the land, which is mobile and transportable. But I would argue that sense of place, of the place that is self, is exactly what Native Americans have lost and cannot reclaim, and that is the reason for high suicide rates and depression.

From the psychologist’s perspective, it is possible to recreate the sense of belonging through “empowered collaboration,” a series of steps a community can undertake to reestablish familiarity, repair attachment to place, and stabilize place identity, and thus undo much of the psychological harm engendered by displacement (Fullilove 1996). I appreciate the optimism in thinking that a community can actively take steps to rebuild, through mourning the lost place and bonding to the new place, but we must not use this as a justification for displacement knowing that it leads to psychological damage.

Place for sense of place in policy

The World Commission on Dams (WCD 2000) put forth a new policy framework for the development of water and energy resources. They offer seven strategic priorities, the second of which, Comprehensive Options Assessment, asserts that there are alternatives to dams and that these options must be explored. While dams have delivered great benefits to society, they have also caused serious social and environmental destruction. Before a dam is constructed, needs for water, food and energy must be assessed and objectives clearly defined. Strategic priority 2, comprehensive options assessment, states:

2.3 Social and environmental aspects are given the same significance as technical, economic and financial factors in assessing options. (WCD 2000)

The authors declare that “future decision-making must increase the significance of social and environmental considerations.” No longer is it acceptable to seat environmental and social impacts as secondary. Rather than focusing on mitigation and compensation, avoidance and minimization of social and environmental impacts must be fundamental criteria that guide options assessment. Also required by this principle is a strategic impact assessment that determines environmental, social, health and cultural heritage impacts of alternatives and rejects inappropriate alternatives at an early stage (WCD 2000:224). This paper has shown how detrimental social impacts of dams can be and recommends that sense of place be included in the equation when determining social impacts. Strategic priority 2.3 echoes my assertion that social, cultural, identity sense of place must be a focus and not cast aside as unimportant.

2.5 If a dam is selected through such a comprehensive options assessment process, social and environmental principles are applied in the review and selection of options throughout the detailed planning, design, construction, and operation phases.

If we agree that sense of place is linked to mental well-being and that development is to leave people better off, not worse than before, then we must take into consideration the ramifications of taking people away from their storied water bodies or vice versa. As strategic priority 2.5 states, social principles must be applied throughout the detailed planning, design, construction and operation phases. Application of this priority would require that sense of place be taken into account at every step of the process.

Policy recommendations

It is my recommendation that sense of place created by lakes, springs, ponds, creeks and rivers be considered when assessing social impacts of a proposed development project. I would suggest conducting interviews with people in potentially impacted communities, to learn their legends, myths, beliefs and other stories and understand where there are valued water bodies.

- 1) By understanding that water creates a sense of place, we may be able to predict psychological and social consequences of relocation. In knowing that there is a strong sense of place, we may reasonably predict that if people are displaced they will experience depression, anxiety and other mental illnesses. I believe that this should be factored into a cost-benefit analysis and/or social impact assessment of development projects.
- 2) If it is determined that the benefits of a project outweigh the costs, then we must seek to minimize the negative social impacts. Taking into account how water creates a sense of place, where there are valued lakes, springs, ponds, creeks and rivers, we may be able to reduce disruption to sense of place by avoiding impacts to these waters.

The world's leading experts question the possibility that involuntary resettlement, usually required for large dam projects, has ever been accomplished without negative consequences for members of communities that have been forced to move (Cernea 2000; Scudder 2005). There is a need to include

not just technical evaluation tools, but also social science perspectives, humanities perspectives and investigation into the various meaning of water and water development (Blatter and Ingram 2001). Traditional frameworks used to evaluate water projects both shape the way water is valued and fail to acknowledge its non-quantifiable values. Williams and Stewart (1998) report that sense of place is actually turning up in a surprising number of academic discussions of ecosystem management and assessments. The concept of sense of place can help managers anticipate, identify and respond to the bonds people form with places. Sense of place can be the shared language used by managers and citizens that reflects the complex web of lifestyles, meanings, and social relations endemic to a place or resource (Williams and Stewart 1998). Rather than treating the human bond with nature and place as an interesting but insignificant feature, sense of place can help managers give the relationship between people and the land the careful, systematic attention it requires and deserves (ibid). Understanding sense of place reminds us that natural resources exist in a social and political world and it may be possible to build a level of consensus around sense of place because it readily leads to a discussion of desired future conditions of a resource in both ecological and human terms (ibid).

Recapitulation

Before concluding with some last thoughts, I'd like to revisit the original research questions that guided this project and explain how I have answered them. The research questions:

- How does water create a sense of place in sites such as the Nu River Valley in China's Yunnan Province?
- How can awareness of sense of place help lead to policies with less negative social impacts of development and hydropower projects?

The people of Dimaluo shared stories, myths and legends about their waters with me, offering insight into the integral role of lakes, springs, creeks and rivers in the sense of place and identity of the people. Undeniably, these water bodies are present and alive in the hearts and minds of the people who have persisted in the Dimaluo Valley for hundreds of years. Through legends and myths, morals and values are passed along from one generation to the next. The river, lakes, creeks and springs continue to shape human experience as evidenced by personal stories. Awareness of water's role in creating a sense of place can help to determine the merit of a potential development project by providing additional criteria by which to assess the impacts of displacing people from their homes, and if this project is deemed to be worthy, by avoiding impacts to those water bodies that create a sense of place.

Conclusion

If there is magic on this planet, it is contained in water.

~ Loran Eisely

Across the world, people have stories about their water, the lake in the mountains, the creek that floods every storm, and the spring with healing powers. These stories create a sense of place by giving meaning to place and self. When people are taken away from their homes, or their home is changed by development, there are psychological impacts. I argue that these are due to a lost sense of place that causes a loss in identity. If we want development projects to be successful in the sense that they improve well-being and conditions for everyone, then we must take into consideration how sense of place is lost or altered when people are relocated and when valued water bodies are impacted.

Wolf (2008) recognizes that the developed world has separated out rationality from spirituality, a result of the Enlightenment of the 18th century, and that with the flow of international development capital and management, this perspective collides with the more integrated views of the developing world. Though spirituality and sense of place are abstract and intangible, they should not be discounted as they provide an opportunity to view development in a more holistic manner.

Limitations

The appropriateness of applying a Western concept to other cultures in an attempt to characterize their relationship with water must be addressed. The idea that a locality has a sense of place is a Western construct. While this research never used the term directly to communicate with interview subjects, there are other translation issues that may be problematic.

It isn't every person who knows all the legends, myths and stories about water in their home area. In Dimaluo, the younger generation did not know these stories and not all older people knew them. Sense of place varies person to person within a group and there is debate among scholars about the importance of the physical setting versus social construction in sense of place (see Stedman 2003). How are we to deal with this? If, after asking ten people for stories, we still come up with none, does this mean that water does not create a sense of place in this location? Or does it indicate that we have been asking the wrong questions? A lack of support for a hypothesis does not disprove it, nor does existence of support prove its truth. In other words, the inability to uncover legends, myths and other stories in a locality does not mean that water does not contribute to sense of place here.

Further research

Williams and Stewart warn against thinking of sense of place as simply another variable or resource descriptor to round out ecosystems assessments. But if sense of place created by water must be quantified, then we can look to existing research that has measured sense of place (Stedman 2003) and used these measurement to predict attitudes towards development and hydropower projects (Vorkinn and Riese 2001) for guidance.

References

- Ahearn Jr., Frederick L., ed. 2000. *Psychosocial wellness of refugees: Issues in qualitative and quantitative research*. New York: Berghahn Books.
- Archibald, Robert. The Places of Stories. 1995. *History News* 52: 6,7.
- Bascom, William Russell. 1965. *The forms of folklore: Pose narratives*. Berkeley: University of California.
- Basso, Keith. 1996. *Wisdom sits in places: Landscape and language among the western apache*. Albuquerque: University of New Mexico Press.
- Beiser, M. 1982. Migration in a developing country. In *Uprooting and surviving*, ed. R.C Nann:119-146, 161. Holland: D. Reidel Publishing Company.
- Bernier, D. 1992. The Indochinese refugee: A perspective from various stress theories. *Journal of Multicultural Social Work* 2, no. 1: 15-30.
- Berry, J.W and R.C Annis. 1974. Acculturative stress: The role of ecology, culture and differentiation. *Journal of Cross-Cultural Psychology* 5, no. 4: 382-405.
- Blatter, Joachim and Helen M. Ingram. 2001. *Reflections on water: New approaches to transboundary conflicts and cooperation*. American and comparative environmental policy. Cambridge, Mass.: MIT Press.
- Bo, Chen, Huang He, and Zhu Heshuang. March 2003. Indigenous knowledge of forest management in northwest Yunnan. SYLFF Working Papers.
- Bodley, J.H. 1982. *Victims of progress*. San Francisco: The Benjamin/Cummings Publishing Co., Inc.
- Brown, Philip H., Darrin Magee, and Yilin Xu. April 2008. Damming the nu: Energy and economics on china's angry river.
- Brun, Catherine. 2001. Reterritorializing the relationship between people and place in refugee studies. *Geografiska Annaler* 83B, no. 1: 15-25.
- Cernea, Michael. 1988. *Involuntary resettlement in development projects: Policy guidelines in world bank-financed projects (world bank technical paper no. 80)*. Washington, DC: The World Bank.
- _____. 2000. Risks, safeguards and reconstruction: A model for population displacement and resettlement. In *Risks and reconstruction: Experiences of resettlers and refugees*, ed. Michael Cernea and Christopher McDowell. Washington DC: World Bank.
- Cernea, Michael M. 1997. The risks and reconstruction model for resettling displaced populations. 25: World Development.
- _____, ed. 1999. *The economics of involuntary resettlement: Questions and challenges*. Washington DC: The World Bank.
- Chambers, R. 1969. *Resettlement schemes in tropical Africa*. New York: Praeger.
- Changjiang Water Resources Commission (CWRC). 1997. *Study of the three gorges project resettlement*. Wuhan:

- Hubei Science and Technology Press.
- Choezin, Tenzin. 2003. Tibetan perspectives on the significance of mountains and lakes. *TRIN-GYI-PHO-NYA: Tibet's Environment & Development Digest*, no. 3.
- Cordova, Viola. 2007. *How it is: The native america philosophy of v.F. Cordova*. Ed Kathleen Dean Moore, Kurt Peters, Ted Jojola and Amber Lacy. Tucson: The University of Arizona Press.
- de Wet, Chris, ed. 2006. *Development-induced displacement: Problems, policies and people*. New York: Berghahn Books.
- Drachman, D. 1992. A stage-of-migration framework for social service to immigrant populations. *Social Work* 37, no. 1: 68-72.
- Dundes, Alan. 1989. *Folklore matters*. Knoxville: The University of Tennessee Press.
- Fahim, H.M. 1981. Dams, people and development: The aswan high dam case. Pergamon Policy Studies.
- Fitchen, J.M. 1991. *Endangered spaces, enduring place: Change, identity, and survival in rural america*. Boulder, CO: Westview Press.
- Fried, M. 1968. Grieving for a lost home. In *The urban condition*, ed. L.J. Duhl. New York: Basic Books.
- Fried, Marc. 2000. Continuities and discontinuities of place. *Journal of Environmental Psychology* 20: 193-205.
- Fullilove, Mindy Thompson. 1996. Psychiatric implications of displacement: Contributions from the psychology of place. *American Journal of Psychiatry* 153, no. 12: 1516-1523.
- Greider, T and L Garkovich. 1994. Landscapes: The social construction of nature and the environment. *Rural Sociology* 59, no. 1: 1-24.
- Guangcheng, Huang. 2003. Concerning the highly disputed general plan proposed to development hydropower on the nu river. Kunming, Yunnan: Yunnan Academy of Social Sciences.
- Hummon, D.M. 1992. *Community attachment: Local sentiment and sense of place*. Ed I Altman and S.M Low. Place attachment. New York: Plenum.
- Jing, J. 1997. Rural resettlement: Past lessons for the three gorges project. *The China Journal* 38: 65-92.
- Kedia, Satish and John van Willigen. 2001. Effects of forced displacement on the mental health of older people in north india. *Hallym International Journal of Aging* 3, no. 1: 81-93.
- Kondic, L. and M. Marvar. 1992. Anxiety and depressive reactions in refugees. *Psychologische Beitrage* 34, no. 3-4: 157-164.
- Layman, William D. 2002. Native river: The columbia remembered. Washington State University.
- Lopez, Barry. 1990. *Crow and weasel*. San Francisco: North Point Press.
- McDonald, Kristen Nicole. 2007. Damming china's grand canyon: Pluralization without democratization in the nu river valley. Doctor of Philosophy, University of California, Berkeley.
- Momaday, S. 1994. Values. In *Words of power: Voices from indian america*, ed. N Hill Jr. Golden, Colorado:

Fulcrum.

Oberst, Gail, ed. 2008. *Writing our watershed*: Luckiamute Watershed Council.

Pena, Devon G. 2006. Place, identity, and social justice in the city: The story of an indigenous diaspora. Second Samuel E. Kelly Annual Lecture presented at the University of Washington, Seattle, WA, April 18, 2006, Ethnic Cultural Theatre.

Proshansky, H.M., A.K. Fabian, and R. Kaminoff. 1983. Place-identity: Physical world socialization of the self. 3:57-83: Journal of Environmental Psychology.

Relph, E. 1976. *Place and placelessness*. London: Pion.

Scudder, T. 1975. Resettlement. In *Man-made lakes and human health*, ed. N.F Stanley and M.P. Alpers:453-471. London: Academic Press.

Scudder, T and E Colson. 1982. From welfare to development: A conceptual framework for the analysis of dislocated people. In *Involuntary migration and resettlement: The problems and responses of dislocated people*, ed. A Hansen and A Oliver-Smith:267-287. Boulder, CO: Westview Press.

Scudder, Thayer. 2005. The future of large dams: dealing with social, environmental, institutional, and political costs. London ; Sterling, VA: Earthscan.

Stedman, Richard C. 2003. Is it really just a social construction?: The contribution of the physical environment to sense of place. *Society and Natural Resources* 166: 671-685.

Strong, Ted. 2009. Falling rain can be like man or woman's hair. Personal correspondence.

Tsering, Tashi. 2005. *Megoe tso: The damming of tibet's sacred lake*. Tibet Justice Center.

Tuan, Yi-Fu. 1977. *Space and place: The perspective of experience*. Minneapolis: University of Minnesota Press.

UNESCO. Unesco world heritage list: Three parallel rivers of yunnan protected areas. <http://whc.unesco.org/en/list/1083> (accessed June 8, 2008).

Urry, J. 1995. *Consuming places*. London: Routledge.

Vorkinn, Marit and Hanne Riese. 2001. Environmental concern in a local context: The significance of place attachment. *Environment and Behavior* 33, no. 2: 249-264.

Werner, D. 1985. Psycho-social stress and the construction of a flood-control dam in santa catarina, brazil. *Human Organization* 44, no. 2: 161-167.

Williams, D.R and S.I Stewart. 1998. Sense of place: An elusive concept that is finding a home in ecosystem management. *Journal of Forestry* 96, no. 5: 18-25.

Wolf, Aaron T. 2000. Indigenous approaches to water conflict negotiations and implications for international waters. 5:357-373: International Negotiation.

_____. 2008. Healing the enlightenment rift: Rationality, spirituality and shared waters. *Journal of International Affairs* 61, no. 2: 51-73.

World Commission on Dams. 2000. *Dams and development: A new framework for decision-making*. London: Earthscan Publications Ltd.