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NUWUVI NEE-YAHVEE: SOCIAL AND ECOLOGICAL RESILIENCE
OF THE TRADITIONAL SOUTHERN
PAIUTE LEADERSHIP SYSTEM

KATHLEEN VAN VLACK

ABSTRACT

In this era of decolonization and self-determination, indigenous peoples around the world are working towards reclaiming the telling of their histories and their cultures. Indigenous peoples are positioning themselves to put forth certain parts of their cultures that have been ignored or misinterpreted by those in the scholarly world to combat stereotypes and rhetoric that disconnect them from their traditional lands. In some places, indigenous peoples have been successful in this process, like the Maori of New Zealand. However, in other places like in the United States, it is an on-going struggle. In the Great Basin and Colorado Plateau region of the United States, Southern Paiute people have long expressed a need and desire to have their traditional leadership system documented as a tool to provide an alternative perspective to counter the stories presented by archaeologists and some cultural anthropologists. To honor this request, the research presented here details this important aspect of Southern Paiute culture.

Introduction

The purpose of this paper is to present a story that Southern Paiute people have long wanted told about their society and culture. This project provided Southern Paiute people with the venue to share their perspective on historical events. The process of telling their own history plays an important part in developing ways in which they reconcile and begin the recovery process from the impacts of colonization and historic trauma. Documenting Native histories has been noted as having recuperative effects through bringing tribal members together to share stories and knowledge (Frank et al. 2008).

There is strong evidence in the historical and the ethnographic record that Southern Paiutes had a complex society and religion. This analysis focuses on how traditional leadership, a multi-tiered system, functioned and how the leaders protected and buffered the people against environmental and social disruptions.

The Southern Paiutes had a traditional leadership system responsible for the maintenance of social and ecological order throughout Southern Paiute society. This leadership system, more commonly referred to as the High Chiefs, was a multi-layered system that functioned on national, regional, and local levels. This essay explores the roles and functions the High Chiefs had in Southern Paiute culture and the maintenance of the Southern Paiute way of life during the pre-contact period until the early 20th century.

The Southern Paiute Nation

In order to understand the functions of the High Chiefs system, one must understand the geographical and ecological structure of the Southern Paiute nation and how the individual political units were formed and functioned. The nation was divided into at least two larger divisions, which each encompassed a number of districts. Within the different districts were local communities.

Prior to 1825 there were two major non-political divisions, a western subtribe labeled *Paranayi* (Sapir 1910) and an eastern subtribe, recorded by Jacob Hamblin as *Yanawant* (Brooks 1950: 27). Traditionally, there was a direct relationship between ecosystems and the division of land within traditional Southern Paiute territory, which was evident in the structure and naming of the subtribes. The term *Paranayi* has two rough translations: “marshy spring people” and “people with a foot in the water” (Palmer 1928: 11; Kelly 1934: 554). The term *Yanawant* can be somewhat misleading like *Paranayi*. During the 1850s, *Yanawant* was the term the Santa Clara Paiutes called themselves. Jacob Hamblin used *Yanawant* to describe all the Paiutes living in the eastern portion of the Southern Paiute nation and the name stuck (Corbett 1952: 84). The subtribes’ riverine oases were vital to Southern Paiute subsistence thus making the major water sources both culturally and geographically central to aboriginal life.

Southern Paiute Districts

The term district can be applied to describe the different regions that make up the Southern Paiute nation (Steward 1938, Kelly 1934). Each district constituted a sphere of influence within a geographic territory. The natural features located within them, mainly the water sources and watersheds, defined the individual districts. Each district contained a full range of resources, including oasis areas with either riverine or spring fed water sources, which provided sufficient water for irrigation farming, while upland and desert areas contained game animals, piñon nuts, and wild seed grains. Permanent settlements were located near irrigated fields in these oasis areas of each district. The districts also had outlying temporary camps in the upland and desert territories that were used for intermittent and seasonal harvesting of wild plant and animal resources.

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This resource use style is known as a “transhumant adaptive strategy.” This way of life involved the harvesting of a diverse range of plants and animals during the course of a complex annual cycle that involved periods of travel throughout an expansive territory. This environmental adaptation optimized the carrying capacity of the desert environment by spreading resource use over a wide range of species.

The districts traditionally had close economic and social ties through intermarriage, and political cooperation. They established and maintained social and political agreements to define their spheres of influence and resource use territories. Figure 1 is the current map of traditional Southern Paiute territory. Fifteen districts have been identified through interviews with Southern Paiute elders and ethnohistorical documentation.

Figure 1. Traditional Southern Paiute Territory

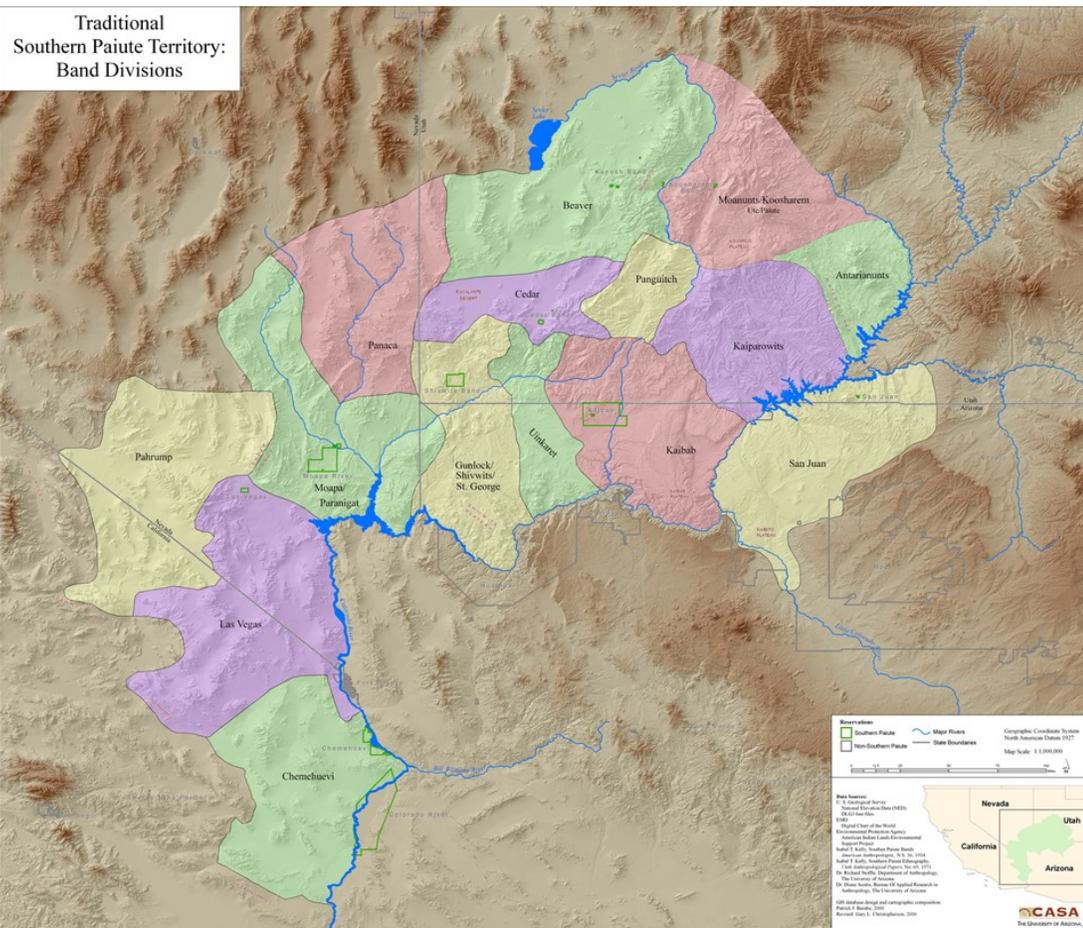
extended family members. Communities were located at specific permanent water sources such as springs or segments of the various river systems. Community population size was directly linked to the size and stability of the water source. In areas such as Pahrnanagat Valley, Paiute communities numbered over 200 hundred people (Nye 1886). At Cottonwood Spring, a much smaller water source, located near Mount Potosi in the southern Spring Mountains, the local community only had a population of 69 people in the late 1860s (Powell and Ingalls 1874).

John Wesley Powell and the Southern Paiute Census

John Wesley Powell and George Ingalls were important figures in documenting the existence of the High Chiefs system that attempted to understand its complexity. They believed that the regional chiefs were leaders of what Powell and Ingalls termed confederacies of local communities (Powell and Ingalls 1874; Fowler and Fowler 1971:104). During their expedition, Powell and Ingalls identified twelve regional High Chiefs as Chiefs of Alliance. These chiefs were in charge of the local leaders and their communities (Powell and Ingalls 1874). One of the Chiefs of Alliance that Powell mentioned was *To-ko-pur* or *Tecopa*. He served as the leader for at least seven local communities that were located in the Pahrnanagat District such as (1) the vicinity of Potosi, (2) Pah-room Spring; (3) Kingston Mountain, (4) Ivanpah, (5) Providence Mountain, (6) Ash Meadows, and (7) Amargosa (Fowler and Fowler 1971: 104-105; Laird 1976: 24).

Powell and Ingalls also recorded detailed information on the other regional leaders and the local communities they governed. Powell and Ingalls acknowledged in their documentation that what they recorded during the late 1860s and early 1870s was

an altered version of how the system previously functioned and existed prior to contact. Powell and Ingalls stated that communities along the water systems in the Moapa-Pahrnanagat District had relocated to other communities or other areas due to Euro-American colonization.



Local Communities

Local communities were the smallest socio-political and geographic unit of the Southern Paiute nation. The communities are sometimes referred to in the literature as bands, which meant that the communities were composed of numerous families and



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The Structure of the Southern Paiute High Chief System

Traditionally, the Southern Paiute nation had a hierarchical structure that functioned on three levels: local (individual communities), regional (districts), and national (entire Southern Paiute nation) with three types of leaders: High Chiefs, Lesser Chiefs, and Advisory Chiefs. The High Chiefs were the ruling elite and led people on the national and district levels. These positions were patrilineally inherited. Leadership positions were filled differently at the community level; leaders were known as Lesser Chiefs and served as elected officials. Advisory Chiefs possessed specialized knowledge, which they used to counsel the High and Lesser chiefs by sharing vital information that was needed to ensure the survival and success of the nation in areas such as environmental management and ceremonial activities. In the early government documents and anthropological literature, the Advisory Chiefs were often identified as political chiefs because people followed their instructions. It is important to note, however, that these positions were not political. These chiefs were not elected nor were they necessarily members of the elite families; their knowledge and abilities were gained through vision seeking or pure talent.

The community leaders interacted and reported to the district leaders. District leaders made decisions based on their interactions with the community leaders and with the national High Chief. The national High Chief took on a leadership position over the regional and local chiefs. A Southern Paiute elder described the system:

There were big chiefs over all the other chiefs and they would have a council. There was the local group, and regional chief, then a chief who looked over the whole nation. They cooperated together all the time. If there was a local problem, they would spread the word of the problem with a runner. Then the other chiefs would come to see what needs to be done and meet together to solve the problem (Van Vlack 2007).

According to Carobeth Laird, the High Chiefs employed a specialized corps of runners to transmit communications. The runners were most likely young men who were specially selected for this role (Laird 1976: 47).

Tivitsitog^{wə}intimi: The High Chiefs

Each High Chief was a descendent from a long line of leaders who was born with the ability to be a gifted communicator. These leaders held special social status in Southern Paiute society, and in many instances, they functioned as religious leaders. Southern Paiutes regarded the position of chief as a sacred office that was interlocked with the religious belief of the people (Laird 1976). The Chiefs had special symbols that were once highly visible in Southern Paiute culture. The High Chiefs, the Lesser Chiefs and their families wore turquoise, which was a culturally significant stone.

Additionally, the High Chiefs spoke a special dialect of the Southern Paiute language known as "real speech" or *tivitsi'am-pagapi*. In her detailed cultural history on the Chemehuevi Pai-

utes, Carobeth Laird documented an encounter her husband, George Laird, one of the last Paiute runners, had with two Chemehuevi High Chiefs:

On one memorable night in the year 1891, ?*Ayarupagimi* and ?*Otawiniri*, and another chief from the vicinity of Banning named *Nagaramaupā*, left the Mountain Sheep Bend (and, incidentally, said to have been the biggest liar among the Chemehuevis) were together in Chemehuevi Valley. They sat by the fire and talked all night long in the dialect reserved for chiefs, and George Laird kept silent and listened spellbound. First, one would speak for half an hour or an hour at a time, then with great dignity another would take his turn. This dialect was known as a 'short way' of talking. In so far as he was clipped short with final vowels omitted, or perhaps even stripped down to the bare roots, they were declaimed or chanted with a strong accent. This manner of speaking is unintelligible to ordinary folks (Laird 1976: 24).

George Laird also stated that it was the duty of the High Chief to set a good example and teach his people a moral code.

Despite the High Chiefs' moral responsibility to the people, there were chiefs who ultimately were labeled "bad chiefs" based on their decisions and actions. One such occurrence took place around 1850. This particular chief was described as bad because he led his people in "depredations that could only eventuate in disaster for all" (Laird 1976: 28). The incident that provoked the chief's decision occurred somewhere between the Providence and Soda Lake Mountains. While the men were away hunting, the women were collecting wild plants near their homes when a group of non-Indian people came upon them and killed the women and children. Shortly afterwards, two men of this Chemehuevi group attacked and killed members of the non-Indian caravan. They took the items and money on the caravan. According to Laird, this sparked a series of incidents in which this particular group of Chemehuevis continuously attacked and killed travelers going through their territory upon the direction of their chief. Laird believed that this bad chief was not justified in his decision to declare war even though there was a great sense of provocation. The chief's actions were counterproductive to what a leader should do as a promoter of peace (Laird 1976: 27-28).

Whether or not a High Chief was deemed a good or bad leader, the position of High Chief was a role that was inherited. Each district had a ruling family that had been in charge of overseeing the people for hundreds, if not thousands, of years. When succession to the chieftaincy was in doubt, the people selected a new leader. A small number of men volunteered for the role of chief, and the people (local communities, districts, or the nation) reached a consensus through a debate and voting process on who should be their leader. They would choose the person who was a senior community member, who was still active, and who was in "pursuit of a long life" and "had learned

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the landscape in both its routine and unexpected forms," (Knack 2001: 22).

Mi^ʔyaupitog^waintimi: Lesser Chiefs

At the community level, lesser chiefs were also selected through a consensus of the people. Selections were based on qualifications such as life experience and cultural and environmental knowledge. The Lesser Chiefs were generally senior male members of the community with excellent communication skills. This person had to convince people to listen to him and follow the decisions he made in regards to environmental management, social relations, and traditional exchange (Stewart 1942). One Southern Paiute representative added, "The people themselves picked them. He knew. He was wise; they knew he was the talker. He would call the council [Advisory Chiefs] together and all decide what to do. And any family could have someone be chief, as long as that person could talk" (Van Vlack 2007).

The *Mi^ʔyaupitog^waintimi* had many responsibilities to the people, such as making sure community members got along and were happy. The *Mi^ʔyaupitog^waintimi* assisted in settling disputes between community members over issues such as failure to share food as required by cultural rules, spousal or family disputes, and any other type of inevitable daily irritations. At first, those involved in the dispute rallied their relatives and claimed their rights as kin for support. Because the *Mi^ʔyaupitog^waintimi* was often kin to both parties, he mediated and served as a vehicle for communication between those involved in the dispute. The *Mi^ʔyaupitog^waintimi* "voiced ethical axioms so general that neither party could dispute them and tried to apply those stipulated tenants to the specific case" (Knack 2001: 23). The chief was not attempting to establish guilt or innocence, right from wrong or determine punishment. He could only try to use his influence and rhetorical skills to persuade them to choose his solution. His solution was based on compromise so that both parties involved could accept it as reasonable and fair. If the *Mi^ʔyaupitog^waintimi* failed, then the disputants would consider drawing upon their family connections elsewhere and move to another community.

Advisory Chiefs

The role of Advisory Chief was not an inherited or an elected position. People who filled these roles had special types of knowledge and power that they used to aid the High and Lesser Chiefs. Their area of experience was dependent on their knowledge base and talent. Some possessed the ability to locate game animals, and thus assisted the chiefs as they directed hunting endeavors. Others had the ability to call on certain natural elements like the wind, while others were skilled in the art of war. The Advisory Chiefs were not directly involved in the decision making process. They could only offer the other chiefs their opinions as experts on particular subjects, allowing the High or Lesser Chiefs made the final decisions.

There were times when decisions had to be made to go to war to protect the people from a direct threat to the traditional Southern Paiute way of life. A war chief was appointed by the High Chiefs during these times of crisis to lead the Southern Pai-

ute fighters into battle against neighboring tribes or non-Indian groups.

After the war chief advised the High Chief, the High Chief would make the final decision to go to war. Once the decision to go to war was made, the warriors had to prepare themselves; this was a spiritual, mental, and physical process. Taking a human life was not something that was taken lightly, and it involved pre-battle preparations and post-battle cleansing. A chief also had a responsibility to protect his people during times of war. One Southern Paiute cultural representative explained, "The chief would hide his people underground and they would cover up the entrance with rocks. That's how they were protected and saved," (Van Vlack 2007).

High Chiefs and Power

The High Chiefs and Lesser Chiefs had the power to assert authority and influence over decisions and actions of the Southern Paiute people. The High Chief system had traditional authority, which is derived from long-established habits and social structures (Weber 1962). Being placed in a position of power might cause some to assert coercive and totalitarian authority over the people, but this was not the case with the High Chiefs. The High Chiefs had a responsibility to the people to reinforce cultural standards and values. They also listened to the people and made decisions that best suited those around them. The Lesser Chiefs had to use influence to assert power over community members because these chiefs were elected. People had the option of removing leaders if the community felt that they were not fulfilling their roles, which created a balance of power between the Lesser Chiefs and the community. People generally trusted the decisions made by their chiefs at all levels of the system because they respected their leaders, and they also knew the chiefs made decisions based on information from the Advisory Chiefs who were the spiritual guides.

The Roles and Function of the High Chiefs

Traditional leaders had clearly defined roles and responsibilities within the context of Southern Paiute communities and culture. The High Chief's roles were to lead the people by upholding the society's cultural beliefs and values by providing them with guidance and information. He had a series of community advisors, who have been defined as Advisory Chiefs, who had special skills and knowledge that assisted the High Chief in making decisions.

Environmental Management

As part of traditional environmental management, the High Chiefs depended on the expert knowledge of their Advisory Chiefs to promote ecological conservation and prevent resource overexploitation. One of the Advisory Chiefs usually was the most successful hunter within a community and his district. He was known as the *niaapiⁱŋ^wai*, or the hunting chief (Sapir 1992: 790). The *niaapiⁱŋ^wai* knew the land extremely well and knew where the animals traveled. It was his duty to inform the chief where to direct the communities to hunt.



Traditionally, the *niaapiŋŋai* was a separate position from the High or Lesser Chiefs, however, it can be assumed that encroachment and population loss caused the consolidation of social roles. Isabel Kelly's work in the 1930s is an example of this process. When she conducted her fieldwork at Kaibab, Kelly noted that there were three "big chiefs" and two "little chiefs," and she noted a "big chief" named Keno from the Houserock Valley area. She documented that every morning Keno would address the people:

Keno spoke early in the morning, every morning, standing by the door of his house. He spoke loudly so all could hear from their camps. He told the people how to hunt and where to hunt; and after a time everybody answered "Yes." Then they went for deer. The chief went first, alone, and the men followed his tracks. He went to the hills and everyone gathered around him. He had them circle about in the timber and chase the deer towards him. Sometimes there were 15 or 20 men. The chief stayed on the mountain until all the hunters left. Towards the evening, he came home alone. When he reached camp, everyone gave him a piece of meat. Then he spoke again to the people, (Kelly 1964: 27).

Kelly's account suggests that Keno held two positions in Paiute society, both that of a High Chief as well as that of an Advisory Chief. Contemporary ethnographic accounts place these roles as two separate entities held by two separate people. Population loss impacted the line of succession amongst the High Chiefs' families and the distribution of traditional ecological knowledge. In order to offset these impacts, people had to adjust and sometimes it meant altering the structure of the society through combining positions.

Plant harvesting was a very important aspect of Southern Paiute life. During certain times of the year, Southern Paiute communities traveled to places to harvest resources like pine nuts and agave. Community organization and temporary relocation to upland regions were necessary during seasonal harvests (Van Vlack 2007). These activities did not occur in the same area every year because of climatic variation and the need to let areas rest, so people would have to go to different locations to harvest depending on the area's abundance. In order to prevent people from wasting time wandering from one potential harvesting area to another, a community would depend on their advisors to pass information on to the chief as to where the people should gather. The chief would then formally decide where his people should go. He would be responsible for making sure that his people followed the proper rules of harvesting by making sure everyone helped each other, only took what they needed, and shared what they harvested with the animals.

Sometimes environmental disturbances prevented a community from accessing their traditional gathering or hunting areas. In these cases, a community would have to use other communities' areas. The chiefs had to negotiate access to each other's

territories. The chiefs visited the leaders of the neighboring communities to discuss access privileges. In order to ensure his people would be allowed to gather resources, cultural items and songs were exchanged as gifts.

The chiefs also played a major role in other environmental management practices such as maintaining irrigation systems. Irrigated agriculture along the Santa Clara and Muddy Rivers required active management in order to maintain the canal systems and fairly allocate water to the people's fields. The chief had a key role in the management of these systems. He oversaw the construction and the maintenance of the canals. Repairs had to be done periodically to patch and reinforce canal walls that eroded over time. The chief was in charge of the process of allocating water to the fields to prevent someone from taking more than his or her share, and to prevent the fields from flooding.

Traditional Exchange

Tribes had a long-standing tradition of exchanging goods and services with each other in the Great Basin and on the Colorado Plateau, and they were exchanged in a number of ways. Sometimes, they were distributed during festivals, where Indian people traveled for many miles for social occasions. Traditional exchange would also occur when Indian people took part in expeditions, when they traveled to other Indian communities to exchange items. Numerous scholars documented that different Southern Paiute communities exchanged items amongst themselves and with neighboring groups such as the Mojave, Western Shoshone, Utes, and the Hopi (Hughes and Bennyhoff 1986: 238-242; Steward 1938).

The phrase "traditional exchange" best reflects these activities as opposed to trade because trade implies that these activities had strictly economic benefits. While some items were exchanged for economic gains, many items were given to other Indian people to establish and reaffirm relationships. It was also common for people to use traditional exchange as a way of establishing relationships with particular places, such as in the use of hot springs. In the Great Basin, Indian people visited hot springs for healing and doctoring and in order to be healed by the waters, and a person would bring an offering like a pretty stone or a finely crafted knife blade. The offering was left and was viewed as a gift to the spring so that it would cure the ailing person.

Traditional exchange occurred both formally and informally throughout the year. According to Southern Paiute cultural representatives, Southern Paiutes and other tribes met at central locations for dances and used this opportunity to engage in traditional exchange. Sometimes rendezvous places were established so that many tribes could come together for the sole purpose of exchanging items. Not all exchange was conducted in formal settings; some interactions took place when a small group of people from a particular tribe visited another to obtain specific items. However, despite the informal nature of some interactions, traditional exchange was ultimately managed by the chiefs (at all three levels). Chiefs took on this responsibility in





order to protect the people they presided over and maintain a sense of balance and order.

Ceremony

In some instances, the High Chiefs were responsible for conducting certain types of ceremonies and community events. The chiefs called the people together by sending runners to the communities to inform them of the upcoming events which were held at places that had an abundance of resources, such as Ash Meadows and Kanab Creek. These events brought together Southern Paiute communities from great distances.

Ceremonies such as the Cry (the funeral ceremony) and the Gathering (*Suupaaru^wapi* or *Nagripi*) were types of occasions in which people were brought together from across the Southern Paiute nation. When preparations were underway for either event, a date was established, and runners with *tapitcap* (knotted strings) were sent out. The *tapitcap* had knots that corresponded with the number of nights that would elapse before the occasion would occur. Runners traveled along a complex trail system that was constructed by Southern Paiute people. In the Mojave Desert, the Chemehuevi Paiute runners used a trail network that connected water locations. Travel throughout Southern Paiute territory was done at night and the runners sang songs in order to remember the routes they needed to take. The songs described the trails and helped the runner recount the stories of mythic beings that once traveled the trails or helped create them (Laird 1976: 19-20, 268-276). Each night the runner (*tapitcapiyawitsi*- the bringer of knotted strings) would spend on the trail, he would untie a knot. Laird wrote that when the *tapitcapiyawitsi* arrived at a community, "there would be great excitement; the people would exclaim, '*Tapitcap_nayaak^aingu*, the knotted string is brought!' (Laird 1976: 27).

The Cry, the Southern Paiute funeral ceremony, was held when a person died and one year following the death. This ceremony brought people together to sing the deceased along a song trail to the afterlife. The High Chief had a very important role in this ceremony as described by a Southern Paiute cultural representative:

Those memorials were done for a number of reasons- to honor the people that had lost a member of their family during that year, then like I said the Chemehuevis live that close to the spiritual world, there was only one person in that tribe that was gifted with the knowledge of the talk song. Only one family...and generally that was the Big Chief's family. During that ceremony, usually, the last day of that ceremony in the morning, he would sing his talk song. This song that he sang, you'd hear in Coyote's Language or somebody's language...HIS own language actually was to present those spirits to his ancestors so they could take them into the next world. He was the only one who could do that. He was the only one who could send those spirits that had passed on that year to the other world.

When he danced, nobody danced with him. The only person that could dance with him was his daughters...nobody else. His immediate family was the only ones who could dance with him. When he sang and danced like that, they all just sat down and watched. It was a spiritual kind of a thing that he did and it was all his own...his own spiritual dance. That was usually why every year they had their memorial dances was for that very reason was to send their spirits [the deceased] into the other world. That guy with his talk song- his Coyote Song was the only guy who could do it (Van Vlack 2007).

The Talk Song or Talking Song that was sung during the Cry ceremonies was the exclusive hereditary property of the High Chiefs and their families. It was called *Amagahuv^wiyahi* because portions were sung in Real Speech, the Chief's language. This song, unlike some of the other Southern Paiute songs, was not associated with territorial hunting rights. The territory described in this song was not a part of this world, and this song was used solely for spiritual purposes. It was a song that could never be borrowed or imitated; one of its legitimate owners could only sing it or it was not sung at all (Laird 1976: 25).

The High Chiefs were actively involved in the Gathering ceremonies, which were once frequently held. Persons who wished that certain matters be brought up and discussed among all the people (both men and women) would, in consultation with others, select a time and meeting place for these types of events. People might have wanted to discuss environmental changes that were occurring, strategies for coping with resource loss, issues of spiritual imbalances amongst the community, or threats posed by neighboring tribes. Usually these events were held in the homes of those who called the Gathering and where food was abundant as well. The High Chief, or the *Tivitsitog^wainimi*, would be present to address the people. He was so great in his dignity that he had a spokesman known as, *apagankiavi*, to speak for him (Laird 1976: 27).

Powell and Fredrick Dellenbaugh documented an event like those described above, which brought Southern Paiute people together on January 6, 1872. The entire Kaibab Paiute tribe came together just outside of present day Kanab, Utah for a round dance. The estimated Kaibab Paiute population at this time amounted to slightly more than 200 people (Stoffle and Evans 1976). They gathered around the dance circle and in the center was a cedar tree that had all of its branches removed except a piece of its top. The entire band danced around the tree and sang. In the center of the circle, was a man who could have been an Advisory Chief, such as a medicine man, who was the guardian of the songs. First, he recited a piece and then all the dancers would sing it. The songs were a combination of original pieces and songs that have been handed down over many generations (Dellenbaugh 1962:178).





Resiliency of the High Chiefs

When people become knowledgeable about their ecosystems, they adjust their adaptive strategies to protect them from natural and social perturbations. If these disturbances occur, there are social and ecological systems in place to cope with small scale to mid-range disturbances. Thus, it can be said that they have developed a resilient way of life. Resilience is a concept that was derived from the field of natural ecology and is currently being used as a tool to bridge ideas between natural and human studies. Resilience is focused on the magnitude of disturbance or disturbances that can be absorbed or buffered without the social system undergoing fundamental change in its functional characteristics (Holling 1973, Berkes, Colding, and Folke 2003: 14). Resilience is a society's ability to bounce back from environmental or social perturbations, such as ten-year droughts and warfare, and still retain its overall structure and function. Holling (1973) states that resilience must be understood in terms of three characteristics: (1) The amounts of change the system can undergo and retain the same controls on function and structure, or still be in the same state, within the same domain of attraction, essentially keeping central cultural core values; (2) the degree to which the system is capable of self-organization; and (3) the ability to build and increase the capacity for learning and adaptation. Resilience is directly linked to the capabilities of the community to learn about and handle disturbances (Berkes, Colding, and Folke 2003). Additionally, the Resilience Alliance adds that resilience is "the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure and feedbacks and therefore the same identity," (Resilience Alliance 2007).

Socio-ecological systems that are resilient have cultural and ecological redundancies. Redundancy in the socio-ecological systems literature is understood as multiple units or building blocks within some larger system that is repetitive in nature. There are two kinds of redundancies that are important to the Southern Paiute case: (1) "the redundancy of many similar (but not completely identical) subsystems and (2) redundancy arising from functional overlap of closely related species (functional redundancy of non-identical species)" (Low, Ostrom, and Simon 2003).

In the case of the Southern Paiute nation and High Chief System, there are redundancies at many levels, which fit into the general definition and the two specific types of redundancies. In the geographic composition of the individual districts of the nation, each district was similar in relative size and resource availability. All districts had similar lowland locations that were used for agriculture and settlement and similar upland locations that were used for harvesting and hunting activities. The districts' specific territories were defined in such a way that the nation could buffer itself against environmental perturbations. For example, if members of the Kaibab district were not able to gather certain resources because of drought or naturally caused fire, the district chief negotiated with a neighboring Paiute district so that Kaibab gained assistance and access to the needed re-

source. This was only possible if the districts had redundant resource use areas. If a district would not grant access to the district in need, then the national leader stepped in to negotiate access to needed resources.

The individual districts were similar in resource availability but because the Southern Paiute nation covers a diverse amount of territory, there are different varieties of the plants used. Water sources used for agriculture differed too. For example, large artesian springs in the Las Vegas Valley supported densely populated communities (Stoffle et al. 1998). This contrasted with the river system in the Shivwits district. While from a hydrological perspective, the two systems were dissimilar, they were socially similar because they provided life for the people and they had (and still do today) similar cultural meanings.

The High Chief system itself is a redundant system. All districts had a district chief followed by a number of community chiefs and Advisory Chiefs. This uniformity and similarity ensured that there was continuity across districts to deal with perturbations and that each district knew how to respond when another district was in need of assistance. This type of system traditionally existed amongst the different Numic-speaking groups of the Western United States. When members of a given Numic society could not fill traditional leadership roles, leaders from other Numic groups joined those in need of a leader and became their chief. Oral history accounts have documented these occurrences.

For example, in the mid 1860s, Southern Ute High Chiefs were Southern Paiute from neighboring communities. Southern Paiute leaders married into Southern Ute communities and then took on leadership roles in their new communities. Southern Paiute chiefs became leaders because Southern Ute communities lacked people to ascend into these roles. This was directly tied to depopulation through disease pandemics and encroachment. Proper lines of inheritance were broken and Southern Ute people had to turn Southern Paiute communities for assistance.

Conclusions-Resiliency Tested- Responses to Encroachment

The arrival of non-Indian people in the Great Basin-Colorado Plateau region put pressures on Native peoples that they had never before experienced. In order to combat these pressures and seek solutions, the Southern Paiutes turned to their leaders to help them weather these troubled times. The High Chiefs used their time-tested knowledge and adapted their traditional resilient strategies to confront these new threats.

The Southern Paiute nation began experiencing an influx of non-Indian people following the arrival of the Spanish in the 1500s. European, followed by Mexican and American explorers and traders, began traveling through Southern Paiute lands. Their actions caused perturbations throughout the entire nation through the destruction of sensitive desert ecology, armed conflict, and the spread of diseases. The High Chiefs and their people tried different methods to deal with the increasing threat of encroachment in order to maintain the resiliency of the Southern Paiute cultural system.





Traditional Exchange with European and American Explorers and Traders

The Southern Paiute nation had different strategies and mechanisms in place to cope with all types of new arrivals into their traditional lands. The High Chiefs exchanged items deemed of cultural importance to Indian people to establish peaceful relationships. This system of traditional exchange proved effective. There are many cases of the Southern Paiutes and the Mojaves exchanging items such as salt and pigments with each other (Brooks 1977: 64; Cerveri 1992). There is documentation of Southern Paiutes allowing Western Shoshone people into the Spring Mountains to gather pine nuts, and when pine nuts were not available, the Western Shoshone granted the Southern Paiutes access to the 'Shoshoni Mountains' for pine nut harvesting (Steward 1938: 183). While Steward did not mention any type of exchange occurring, it can be assumed based on current ethnographic data that such an activity occurred.

Because the Southern Paiute High Chiefs negotiated traditional exchange with other Indian groups for access rights and resources to ensure the resiliency of the Southern Paiute nation, it was then possible for them to carry out similar activities when faced with the arrival of the Spanish and Euro-Americans. The historical record notes many instances where the Southern Paiutes tried to exchange cultural items with European and American explorers with the desire to establish a peaceful and respectful relationship, sometimes successfully and sometimes not.

One example comes from the journal of Dominguez and Escalante in 1776. During their expedition, they visited a Southern Paiute community located near present day Hurricane, Utah. The friars noted in their journal that the Paiutes offered to trade turquoise with the party but the friars told them they had nothing to trade with, and they did not want to engage in trade. The friars said that if some of the Paiutes accompanied them on the remainder of their journey to Santa Fe, they would be rewarded with goods (Dominguez and Velez de Escalante 1776). The attempt made to exchange turquoise was probably an attempt to establish a social relationship with the friars as opposed to trading of items in the European sense. During the rest of their journey to Hopi and Santa Fe, the friars noted that every time they visited a Southern Paiute community, they were given gifts such as pine nuts. As mentioned earlier, pine nuts were one of the items offered in exchange by people who wanted to establish a peaceful relationship with other tribes or non-Indian people.

Another example of this type of traditional exchange occurred during the Old Spanish Trail period, when a group of Southern Paiutes brought salt that was ritually collected from the St. Thomas Salt Cave (a ceremonial center in southern Nevada) to exchange with travelers. Prior to the Old Spanish Trail's establishment, salt was a commonly exchanged ceremonial item. Salt collected from the Salt Cave had a reddish color and was used as a medicine in different types of ceremonies. In the late 1820s, Jedediah Smith noted that Mojaves from the Cottonwood Island area traveled up river to trade for salt and miner-

al pigments with the Southern Paiutes (Brooks 1977:64; Cerveri 1992).

In 1829, a few years after Jedediah Smith traveled through Southern Nevada, the Old Spanish Trail, which linked Santa Fe to California, was opened. Traders moved woolen goods from Santa Fe to California in exchange for horses. The trail traversed through most of the Southern Paiute nation and affected the lives of all Indian people living along the route. The large hard hooved animal herds caused extensive damage to springs and plant communities throughout the Mojave Desert, which in turn affected Southern Paiute communities. Travel along the trail also contributed to the spread of diseases that caused the deaths of many Indian people (Stoffle et al. 2008).

The Southern Paiutes often tried to engage in traditional exchange with travelers along the trail. In 1830, there was a documented instance where Southern Paiutes brought salt to exchange with New Mexican travelers who were en route to California (Camp 1977:64). While the account did not reveal the purpose of this exchange, a few conclusions can be drawn. It was likely that a High Chief led the Southern Paiute delegation since it was the chief's responsibility to protect the traditional lands and the people. Importantly, they brought salt from the Salt Cave, not gold or turquoise, which were items of high monetary value to the Mexican travelers and were items that can be found in the region. This can be explained by going back to the period prior to 1830 when early travelers passed through this part of Paiute territory. When the first groups of travelers passed through, Paiutes might have made efforts to give them red ochre, gold, turquoise, and obsidian without much success, as seen in the Dominguez and Escalante example. Old Spanish Trail travelers were also not looking for items that would weigh down their animals any more than they were, and they simply could not have been interested. The salt from the Salt Cave proved enticing because the travelers were at this point of their journey low on supplies and days away from a rendezvous point. They needed something that would have been useful for the remainder of their journey and the rock salt would have been much desired by travelers to replenish their animals. This exchange of salt was used as an attempt to establish a non-aggressive relationship with the new arrivals. The relationship established from this exchange could have been used to ensure a peaceful relationship.

The High Chief system was stressed and eventually declined in extent and function due to invasions by Euro-Americans, their animals, and their diseases. With decimated populations and lost resources, many aspects of traditional Southern Paiute society were lost. This breakdown of the High Chiefs system and other aspects of Southern Paiute culture occurred before the arrival of anthropologists into the Great Basin and Colorado Plateau regions, which was instrumental in causing misrepresentations in the early ethnographic data.

Scholars and laypersons alike came to characterize Southern Paiute people as lacking social organization above the family level even though this was not the case. The High Chief sys-



tem lasted into the early part of the 20th century, but the deaths of so many Southern Paiute people due to epidemic diseases meant that many of the traditionally held socio-political positions could no longer be maintained and the need for a multi-layered system was reduced. Despite this, the chiefs system still persists in the hearts and minds of the Southern Paiute people. The respect and affinity they held for the leaders of the past has carried over into new generations of leadership. The Southern Paiutes know their history and know what it means to be a leader whether a person was a traditional High Chief or is a contemporary tribal chairperson. The oral histories conducted during the course of preparing this paper have provided a vehicle for recording this important aspect of Southern Paiute culture. The Southern Paiute elders requested that this study be done over twenty years ago and now their request has been honored and brought into fruition.

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FACING THE UNIMAGINABLE: HOPI AND SOUTHERN PAIUTE RESPOND TO MASSIVE RISK EVENTS

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ABSTRACT

This is an anthropological analysis of two massive risk events, (1) the 1780 North American smallpox pandemic at Hopi and (2) the contemporary transportation of radioactive waste along the Southern Paiute path to heaven; and an assessment of how these American Indian societies responded. Findings from the analysis are used to ground the Risk Society Theory of Ulrich Beck (1992). The analysis is based on historic documents and contemporary ethnographic interviews. A cross cultural and diachronic analysis of risks is theoretically important according to Boholm (2009) because understandings of risks, like other experiential phenomena, are informed by socially and culturally structured and historically conditioned conceptions and evaluations of the world.

KEY WORDS: Risk Society Theory, Social Resilience, Hopi, Southern Paiutes

A fundamental principle of Risk Society Theory (Beck 1992) is that humans in recent times have experienced unprecedented and thus unimaginable risks. As a consequence today we all face *ontological insecurity* (Giddens 1990) because we have neither experienced nor prepared for these new risks and our future is unclear. Often these risks occur due to our proceeding with science and technology decisions based on *timescapes* (Adam 1998) that were too narrow in temporal and spatial scale (Stoffle, Stoffle and Sjolander-Lindvist 2012). Of course sometimes, natural events just happen.

This analysis provides another data-based perspective on Beck's Risk Society Theory (Stoffle and Arnold 2003, Stoffle et al. 2004). Here we ground in case examples the Beck assertion that recent risk episodes are both unprecedented and beyond our pre-existing cultural strategies to maintain social resilience. According to Beck (1992: 20) the modernization process leads to more destructive forces being unleashed and these forces are unlike any others previously experienced. These *unimaginable risks* are considered here in terms of three variables: (1) frequency of occurrence, (2) magnitude, and (3) substance of risks. Each of these variables is viewed as key for understanding (perhaps predicting) the ability of a specific human society to understand, prepare for, and adapt to extreme risks. Risk preparation is the cultural foundation of *resilience* (Resilience Alliance 2013).

Two cases contribute to the analysis. The historical case involves the recovery of the Hopi Indian society after a severe regional drought and the massive North American smallpox pandemic of 1780 (Fenn 2001). Hundreds of American Indian societies experienced this pandemic from central Mexico in the south to British Columbia in the north. This historic case is then compared with a contemporary case involving impacts from the transportation of radioactive waste along the Southern Paiute path to the Afterlife (Stoffle and Arnold 2003). Radioactive waste is currently hauled from 22 Department of Ener-

gy national laboratories across the traditional lands of dozens of American Indian societies, including Southern Paiutes, en route to the Nevada Test Site. These two cases illustrate the characteristics of unimaginable risks and the cultural ability (and limits) of these two American Indian societies to be resilient.

THEORY

Risk Society Theory frames many popular and scientific explanations of the contemporary world, especially social and cultural conditions in Europe and the United States. The notion of Risk Society was presented by the German sociologist Ulrich Beck in 1986 and the term quickly caught on as a way of describing and explaining the stresses shaping human society in the late 20th century. According to Beck, even though humans have always been exposed to and subsequently adapted to risks, qualitatively and quantitatively new kinds of risks now confront society. During this period, Europe experienced risks from the Chernobyl Nuclear Plant melt down, widespread chemical pollution, the mad cow disease outbreak, and biotechnology (Adam, Beck, and Van Loon 2000; Lash, Szerszynski, and B. Wynne 1996). According to Beck (1992: 56) the growing awareness of modernization risks was a totally *unimaginable phenomenon* (emphasis added) a generation ago and is now already a political factor of the first rank. Knowledge of risks that are threats from 20th century techno-scientific civilization has only become established against massive denials and bitter resistance (Beck 1992: 58). The consciousness of modernization risks has had to be argued against the resistance of scientific rationality (Beck 1992: 59). According to his Risk Society Theory one reason these risks have been denied is because the established leadership of modern society (political and scientific) neither has a way of fixing the risks nor of helping society be resilient against their challenges. Not only is contemporary society facing unimaginable risks but it is doing so without the help of traditionally

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trusted leadership and knowledge providers to set these problems right. This situation has led to a widespread loss of confidence in society itself – another contribution to ontological insecurity, which might be considered as modern *social anomie* (Durkheim 1897).

Resilience is a term that has emerged in common use as well as in the biological and social sciences. Interestingly its popularity emerged just as society lost confidence in its ability to persist in the face of new risks, and it is possible that the two were related. As natural and social disasters increased in frequency and intensity, the issue of lifeway survival became increasingly salient. Resilience is used in this analysis as a social, not an individual or small group, phenomenon. Resilience is about a social condition that occurs when people, acting in traditional ways, learn about their ecosystems and adjust their adaptive strategies to protect them from natural and social perturbations. According to Holling (1973), the Resilience Alliance (2008), and Berkes, Colding, and Folke (2003: 13-16), resilience can be understood in terms of the magnitude, frequency, and kinds of disturbance that can be absorbed or buffered without the society and culture undergoing fundamental changes. In human terms the simple question is “Are we still here, largely unchanged, after the risk event?”

Ontological insecurity exists at the juncture of risk and resilience. Over time a society can and will co-adapt to social and natural perturbations (like hurricanes, earthquakes, droughts, and wars) that occur within cycles of a few hundred years (Stoffle, Toupal, and Zedeño 2003). When co-adapted with such threats, people are confident that their way of life will persist beyond the risk event. Some perturbations, however, can overwhelm resilience preparations (Stoffle and Minnis 2008). It is beyond the ability of a society to prepare for and adapt to perturbations (like massive tsunamis, volcanic eruptions and devastating pandemics), which have never occurred before, or only occur every millennium, or have never been this severe, or have unique components. Such perturbations are unimaginable and can lead to ontological insecurity.

RISKS THEN AND NOW

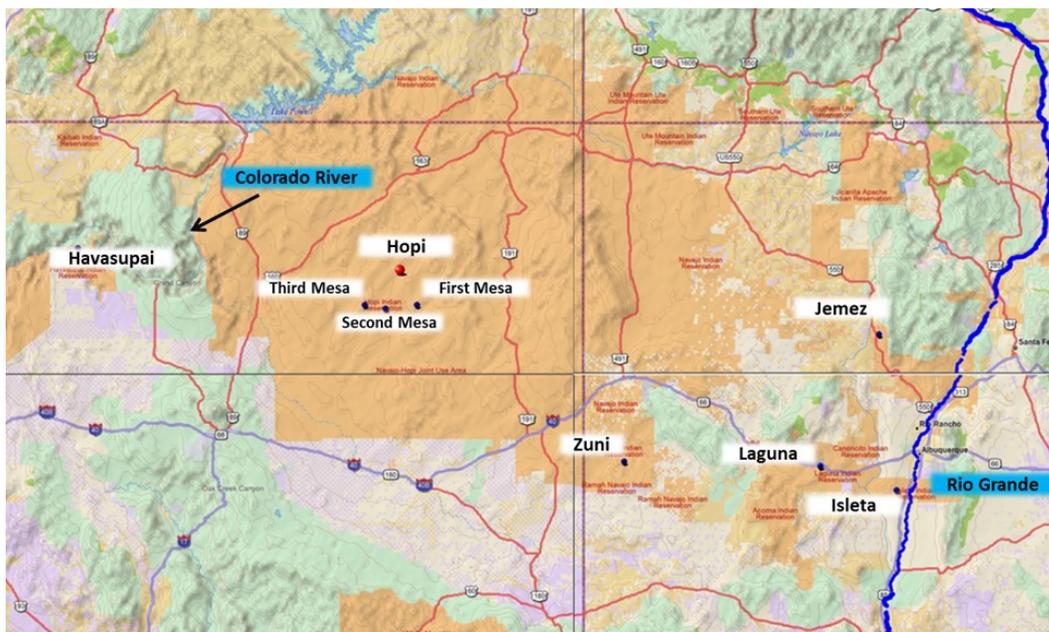
Beck’s argument that contemporary society has been changed by unimaginable risk events is open to discussion because of its importance and because it has not been grounded in local cases and other time periods (Boholm 2009, Boholm and Lofstedt 2004, Stoffle et al. 2004). According to Beck, when Chernobyl released radiation that exposed Europe

and most of the planet, it created a *new risk event* that not only caused health effects but also changed the nature of society itself. Because Chernobyl exposed all Europeans regardless of wealth and rank it thus weakened the foundations of social class, which had been developed during the rise of Industrial Society due to the uneven distribution of valued resources. After Chernobyl evenly distributed its radioactive risks no one was safer than another. Two key foundations of resilience, trust in leaders and reliance on knowledgeable people, were weakened by previous assurances by political and scientific leaders that a Chernobyl-like event could never happen and later by their public rhetoric downplaying both the event itself and the probability of reoccurrence. When trust is a victim of a risk event, the future of society is doubted.

Hopi and 1780 Drought and Smallpox

The Hopi are an American Indian people who have lived for thousands of years on and near a series of isolated mesas in northern Arizona (Zedeño 1997) where they traditionally engaged in complex ceremonial cycles mostly focused on balancing the world, causing rain to fall in this extremely arid desert, and living from the dry farming of corn, beans, and squash (Figure 1). During this period they co-adapted with surrounding American Indian groups and a fluctuating natural environment. Key in this co-adaptation was what might be called a *breathing community* that can increase or decrease its local population (see for comparison Stoffle 2001). According to Levy (1992: 156) the Hopi have a system of resource control wherein the best local agricultural lands are controlled by a single household in the prime lineage of a clan. As resources become scarce, excess populations are removed in an orderly manner. This preserves the core of every social unit: phratries, clans, and lineages. So, in times of normal cycles of regional drought, selected

Figure 1. Hopi Lands





portions of the Hopi population moved away to be with other tribes with more permanent water (Levy 1992: 107-108), like to the northwest along the Colorado River among the Havasupai people or east to the Rio Grande Pueblo communities (Parsons 1936).

Social networks created by intermarriage and reciprocal exchanges facilitated gaining access to other people's natural resources in times of normal local drought (Titiev 1972: 273). These relationships seem very old according to Lyons (2003) who tracked pulses of ethnic migrations arriving at Hopi after 1150 AD by using pottery styles, perforated plates, ladles, ceramic colanders, ladle handles, kivas, and other archaeological data. Fewkes (1900) documents that Hopi and Havasupai, for example, had reciprocal agreements, which took the form of intermarried families, local exchange groups, and common clans present in each society. Such exchanges were adaptive for many groups having difficulties supporting themselves in times of drought and stress. For example, refugees from Jemez, Zuni, Laguna, and Isleta pueblos came to Hopi in 1715-1716 when drought and raids from Utes, Navajos, and Apaches caused these other pueblo people to seek refuge (John 1975: 238). In 1775 Hopi as the only Pueblo not under Spanish control continued to be the primary home for many Rio Grande peoples who participated in the 1680 revolt against the Spanish (Adams 1963: 104). Usually, however, according to this adaptive pattern, refugees returned to their home territory when conditions permitted.

Around 1780 the people at Hopi faced an unimaginable perturbation – an extensive three year long drought (1777-1779) which when combined with a North American smallpox pandemic (during about the same period) jointly killed most of the Hopi population (Upham 1986). In the *Hopi Dictionary* (The Hopi Dictionary Project 1998: 378) the word for smallpox *paayawu* has two more phrases of reference “*Hisat Oravve ~y akw wùukoso’a*. (Long ago in Oraibi many people died from smallpox) and *Hópiituy amumi pitu* (This smallpox afflicted the Hopi people). So many Hopi people died at this time that the living could not properly bury the dead. The massive number of bodies combined with only a few healthy survivors necessitated that the bodies be thrown off the edge of the mesas (Emory Sekaquaptewa, personal communication).

Father Escalante made it possible to measure these impacts when he traveled from Zuni (where he had been stationed) to formally meet with Hopi leaders in June of 1775 (Adams 1963). The Father's visit officially was for the purpose of converting the Hopi. The Spanish more broadly had plans to push the frontier further west by conquering the Hopi and finding a route to Upper California (Adams 1963: 100, 108). These military goals clearly made it important for the Spanish to accurately know how many Hopi lived in their seven pueblos. Escalante's 1775 Hopi census (actually a counting of what he calls families which we would define today as households) estimated a population of 7,494 people in 1,249 families (households), with an average of 6 people in each family (Adams 1963: 133-135).

In order find a route to California in 1776 the Spanish

launched a major expedition headed by Fathers Dominguez and Escalante (Dominguez and Escalante 1776). On their way back from their failed attempt to find the trail to California the expedition visited Hopi in November of 1776. Their diary entries at Hopi neither mention the drought nor the smallpox so apparently these had not arrived by that time (Warner and Chavez 1995).

In September 1779 the Hopi leaders sent messengers the Spanish Governor Juan Bautista de Anza requesting that he come to Hopi so that he would understand their dire condition and perhaps provide assistance. This was a surprising event inasmuch as the Hopi had a policy of not welcoming the Spanish. When Governor Anza and his men arrived he officially estimated a population of 798 people living in 133 families – he still used an unrealistically high estimate of 6 people in each family. The Hopi village of Oraibi, for example, had 800 families in 1775 and barely 40 in September of 1779, a loss of 95%. The seven Hopi villages had dwindled to 5 families with no more than 40 families left in any village. By most calculations the Hopi lost at least 90% of their population by 1780 (John 1975: 600).

Some Hopi people did move away as part of a traditional pattern of relocating to ethnically different communities living in wetter ecosystems. Some refugees moved safely to Havasupai, but many of the Hopi refugees who moved towards the Rio Grande were killed or captured by the Navajos and never returned (Fewkes 1900: 611; John 1975: 593, 597). The Navajo people were “at war” with the Hopi in 1775. The severity of these threats caused the Zuni to agree to provide Father Escalante with armed escorts for this journey to Hopi. Escalante's escorts, however, forcibly rerouted him against his will to protect him from the Navajos on his way to Hopi (Adams 1963: 105, 109-113). During this period there was a recurring pattern where the Navajo people sometimes (1) provided full protection for refugees and other American Indian travelers, (2) killed only the men and kept the women and children, or (3) killed everyone (Grant 1978: 70-71, 82).

By 1780, however, many Hopi people had simply chosen to die in place on their mesas – their options were extremely limited because other peoples who might have helped in the past were also in similar trouble. At Zuni, for example, people experienced a similar fate and had largely died or left that pueblo. The Rio Grande pueblo people did have river water but they were dying in similar numbers from the smallpox (John 1975: 598). So, a lower number of deaths than 90% may have occurred because some Hopi did leave to live with neighboring ethnic groups, but the prognosis was poor for everyone and Hopi society was in extreme jeopardy by 1780.

The Hopi population partially recovered but it never again (until modern times) reached the pre-1780 size. Levy (1992:108-109) correlated more declines in Hopi population in the 1800s with additional droughts and smallpox episodes. The most detailed analysis of the Hopi population during this period was provided in 1893 by Thomas Donaldson who produced an Extra Census Bulletin entitled *Moqui Pueblo Indians of Arizona*. On





page 15 of that Bulletin is the following summary of the best counts and estimates of the Hopi population available (Donaldson 1893:15):

- In 1745 two friars claimed to have counted ... 10,846 people at Hopi.
- In 1775 Governor Anza counted 7,494 people at Hopi.
- In 1775 Escalante counted 7,494 people at Hopi.
- In 1780 Governor Anza counted 798 people at Hopi – no rain had fallen for 3 years and at that time the Hopi deaths were given at 6,698.
- In 1846 Governor Bent counted 2,450 persons at Hopi.
- In 1853 Lieutenant Whipple counted 6,720 people at Hopi (this was just prior to the small pox of 1853-54).
- In 1861 US Indian Agent Ward estimated 2,500 people at Hopi.
- In 1865 US Indian Agent Ward estimated 3,000 people at Hopi
- In 1863 Colyer estimated 4,000 people at Hopi.
- In 1890 the Eleventh US Census counted 1,996 people at Hopi.

The 1890 US census indicated a total Hopi population of 1,996 persons, the 1900 US Census recorded 1,852 persons, and the 1910 US Census documented 2,009 persons. Thus the early 20th century Hopi population was less than a quarter of what it was in 1775 and what it was between droughts and smallpox episodes in the 19th century.

Still the people at Hopi in the early 20th century appeared to be living a traditional lifeway, conducting balancing and rain ceremonies, and experiencing a daily round of life much like that observed by Father Escalante in 1775 (Parsons 1936). The question then is, how did they restore/reconstitute their society and culture after the 1780 drought, pandemic, and massive population loss? The most robust explanation is that other American Indian peoples from distant communities who lost much of their population became unable to sustain a traditional way of life there and so subsequently moved to Hopi. These other peoples then permanently joined this increasingly multi-ethnic community as new clans. Joining Hopi, however, involved accepting strict protocols where the newcomers recognized the primacy of Hopi language, culture, and political leadership model. Newcomers were permitted unique roles in Hopi society, they could continue to practice specialized religious ceremonies in private kivas, and speak their own language in isolation. Each clan and religious society was welcome to become a part of a Hopi village but only on the assurance that the new people would make a contribution to the common good of the community (Hieb 2002: 91).

Hopi society in the 20th century is now made of many peoples and cultures. Their perception of traditional lands constitutes what is called *Hopitutskwa* (Hopi Land), which encompasses everywhere the Hopi ancestors traveled, lived, and were buried during the long migration from the place of origin to *Tuwanasa-*

vi (earth center) on the Hopi Mesas (Kuwanwisiwma and Ferguson 2004).

In retrospect it appears that outwardly the Hopi language, culture, and population were resilient with respect to the 1780 smallpox pandemic and drought. Clearly, however, many clans did not survive these two perturbations and there was a much different ethnic mix of peoples afterwards living at Hopi. Hopi has had up to sixty-four clans in the past few hundred years. Today, there are more like 32 clans, many members of which have participated in five of our ethnographic studies as elders of the Hopi Cultural Committee, which serves the Cultural Preservation Office (Stoffle et al. 2009). To be Hopi, according to interviews with these elders, is not so much a being a part of a biological group as it is a way of life (Sekaquaptewa and Washburn 2004). Elders we interviewed (Stoffle et al. 2009) maintain that among the key pillars of Hopi culture are cooperation, respect, stewardship, compassion, and humility; humility perhaps as the greatest. They say Hopi is a philosophy and a way of life.

The Hopi society is now, according to the elders, composed of clans who share the overarching identity of being Hopi, but many clans have their unique history, language, and ceremonies, which derive from an ancestral home elsewhere (Yava 1978: 46 - 61). There are Hopi clans today composed of people whose ancestors were Navajo, O'Odham, Southern Paiute, and the people from Chaco Canyon, all of whom came to live at and as Hopi.

Southern Paiutes and Radioactive Waste on the Path to Heaven

Southern Paiutes have a spiritual trail known as the Salt Song Trail, which was established at Creation as the cultural and physical path to the Afterlife (The Cultural Conservancy 2010) (see Figure 2). The Paiute Afterlife is a concept similar in many ways to the Christian concept of Heaven, except that all people who arrive are whole and healthy again and live a contented life until they are reincarnated. When a person passes away his friends and relatives move him along this Salt Song Trail by singing a series of Salt Songs and Bird Songs over a period of days. Each set of songs moves the departed person along the trail to a specified physical and spiritual place where he stops and remains until the songs begin again. The departed person only moves along the Salt Song Trail because of the singing of Salt and Bird Songs.

This path to the Afterlife traverses about a thousand miles through Southern Paiute traditional territory and that of the Hualapai people to the east across the Colorado River (Laird 1976) (see Figure 2). The trail is both spiritual and physical. It has physical places such as an approximate center point of the trail and distinctive places all along where the departed person stops at the end of each set of songs. It has spiritual elements most of which are not discussed by Southern Paiute people, but one component is a mountain ridge to mountain ridge viewscape centered on the trail that is important to the well being of the departed and the performance of the singers who mentally fol-





low along and track the trail as the songs are sung.

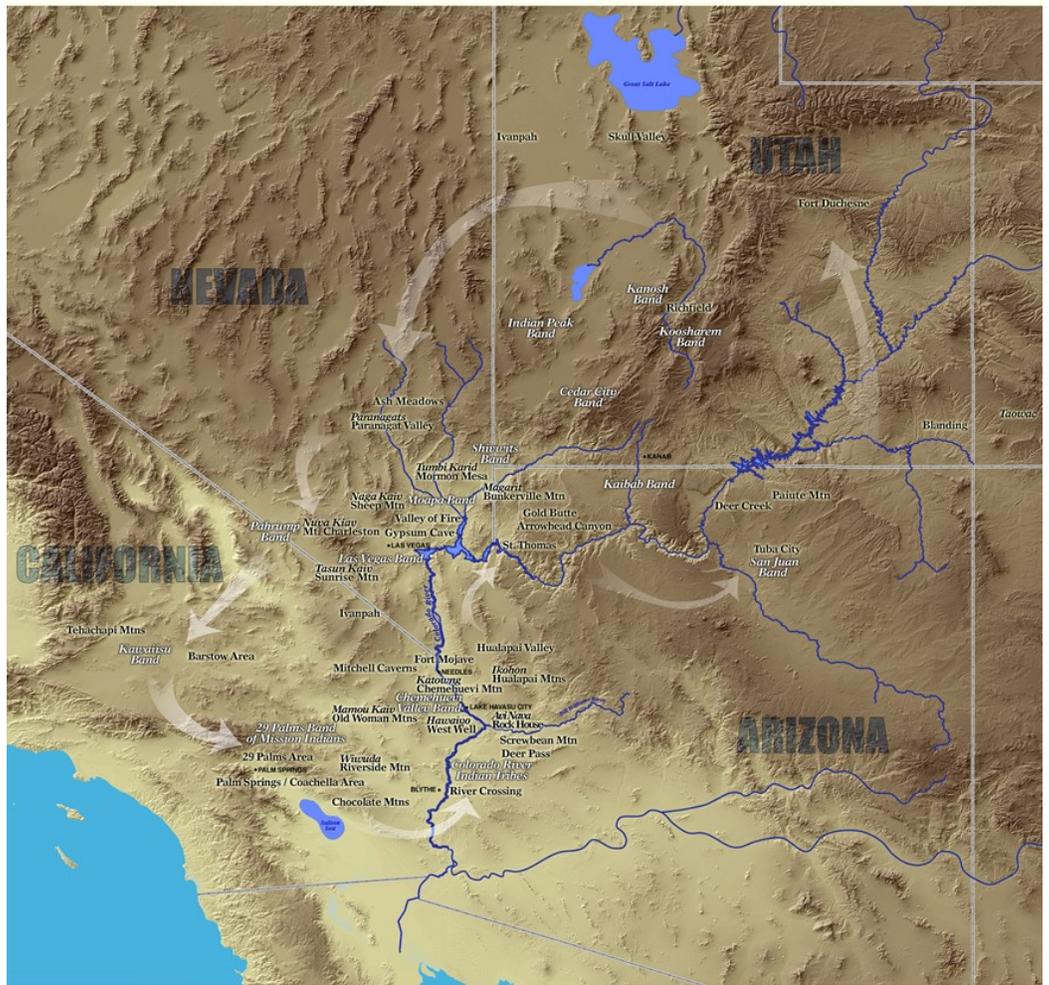
In 1996 the Department of Energy (DOE) began funding ethnographic studies of potential impacts to American Indian people and cultural places deriving from the transportation of radioactive waste along various highways in Nevada and California (Austin 1996; American Indian Transportation Committee 1999). The radioactive waste is being hauled from DOE national laboratories to the Nevada Test Site (NTS) now known as the Nevada National Security Site. One route that already had some waste hauled along it leads from Baker, California north up highway 127 to Death Valley Junction on the way to the NTS (see Figure 3). Most of this route corresponds with an 83-mile long segment of the Salt Song Trail, which includes the Amargosa River hydrological system.

Three radioactive waste transportation proposals have been considered for this segment of the path to the Afterlife. In 1986 the States of Arizona and California considered the Silurian Valley north of Baker as a site for a joint radioactive waste isolation facility (Stoffle 1987). That proposal was rejected. The NTS transportation study discussed here was the second proposal (American Indian Transportation Committee 1999). Finally an Environmental Impact Study (EIS) was conducted which assessed the impacts on American Indian culture of the movement of Greater Than Class C (GTCC) radioactive waste to the NTS (Department of Energy 2008). GTCC waste is much higher in activity than many other types of radioactive wastes, and as such, it is potentially more threatening to deceased spirits passing on to the Afterlife according to Indian people involved in the study.

There are numerous specific places (song stopping places)

Figure 2. The Salt Song Trail

Salt Song Trail Map of Nuwuvi (Southern Paiute) Sacred Landscapes, Culture Areas and Bands



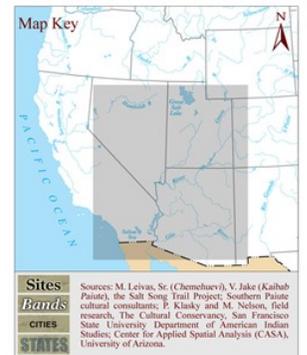
This map shows Nuwuvi (Southern Paiute) holy lands spanning ocean and desert, mountains and rivers and across four states. These landmarks are described in the Nuwuvi Salt Songs and represent ancient villages, gathering sites for salt and medicinal herbs, trading routes, historic sites, sacred areas, ancestral lands and pilgrimages in a physical and spiritual landscape of stories and songs. The Salt Songs are a cultural and spiritual bond between the Nuwuvi and the land, and represent a renewal and healing of a Nuwuvi's spiritual journey.

The Salt Songs are sung at memorial ceremonies and follow a trail that begins at Avi Nava/Ting-ai-ay (Rock House), the sacred cave at the Bill Williams River, and travels to the Colorado River north to the Colorado Plateau, west to Nuva Kaiv (Mt. Charleston), through mountain passes to the Pacific Ocean and then back east through the desert to the Colorado River and to its place of origin.

The trail visits the fourteen bands of Nuwuvi people including: Cedar City, Chemehuevi Valley, Colorado River Indian Tribes, Indian Peak, Kaibab, Kanosh, Kawaiisu, Kaiparowits, Las Vegas, Moapa, Koosharem, Pahrump, San Juan, Shivwits, and Twentynine Palms Band of Mission Indians.

For more information, copies of this poster and the film *The Salt Song Trail* contact Philip M. Klasky, director of The Storyscape Project of The Cultural Conservancy at www.nativeland.org, (415) 561-6594, Salt Song Trail directors Matthew Leivas (760) 858-4049 and Vivienne Jake (928) 643-7210.

The Salt Song Trail Project © 2009 all rights reserved.
Design by Dana F. Smith and Philip M. Klasky



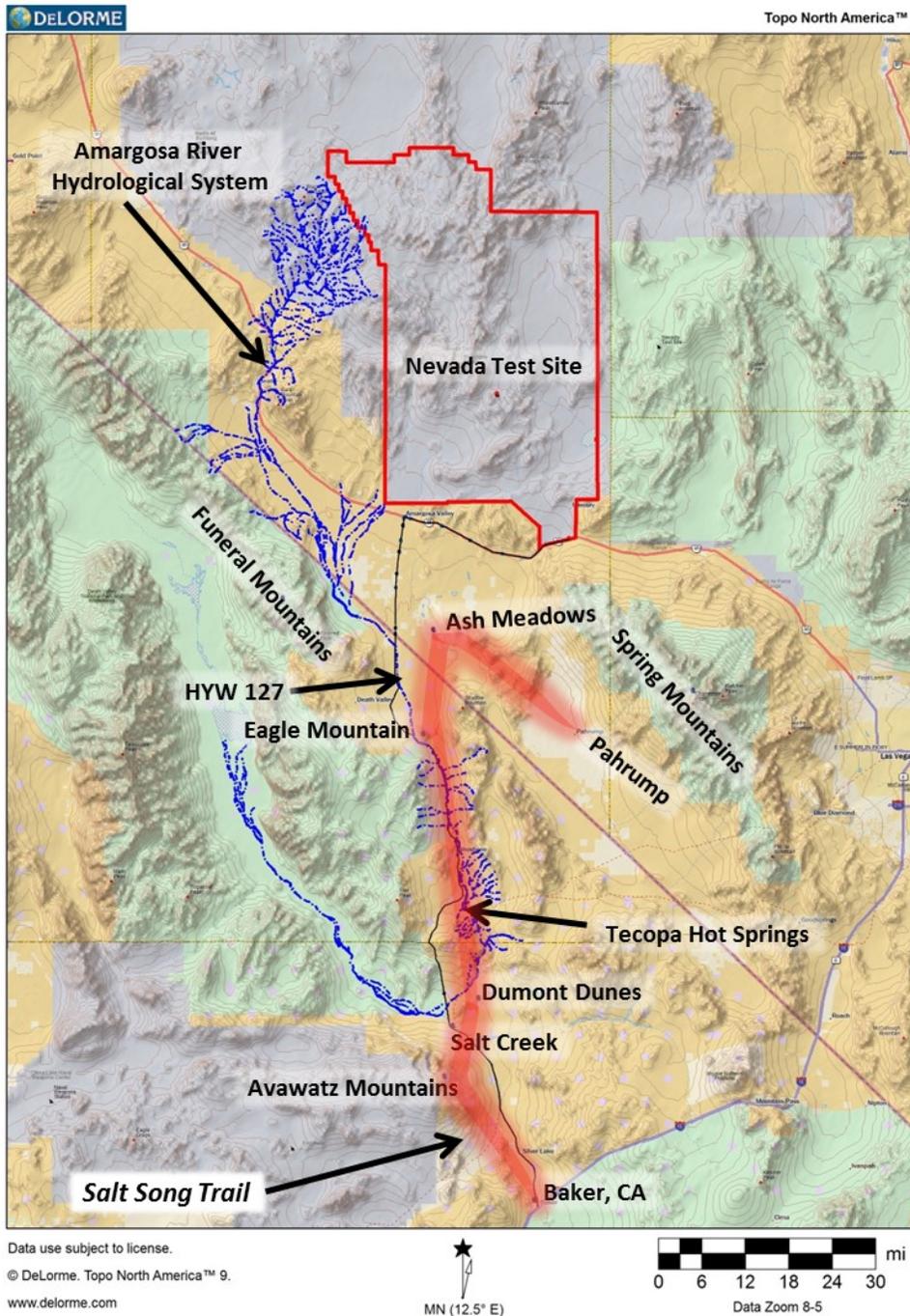
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Facing the Unimaginable...

Figure 3. The Salt Song Route Near Highway 127



mentioned in the Salt Songs along this portion of the trail. Prominent among these are seven places: Ash Meadows, Eagle Mountain, Tecopa Hot Springs, Dumont Sand Dunes, Salt Creek Spring, Avatwatz Mountains, and the springs at Baker, CA. The song trail and contemporary highway generally follow the Amargosa River which flows south and turns west into Death Valley and the prominent hydrological systems that flow north from near Baker and turn west near Dumont Dunes into Death Valley.

Southern Paiute epistemology stipulates that all the elements of the world are sentient and, like humans, have agency (Stoffle and Arnold 2003). Elements of the world have a range of positive and negative responses to how they are used and treated. Southern Paiute people traditionally knew about and used radioactive minerals (Stoffle and Arnold 2003). American Indian people today talk about the yellow mineral as being used by *Puhaganti* (*Puha* = power and *-ganti* = having) and as face paint for warriors. Areas with high concentrations of the mineral were called dead zones and placed off limits to average American Indian people. Such areas were places of *Puha* and could only be visited by a prepared *Puhaganti*. It is difficult to determine just how old is American Indian knowledge about and use of radioactive minerals; however, in southern Utah an excavation of burials and caches in a mountain cave yielded a small bag made of prairie dog skin, folded over at the mouth and tied with cordage. The bag contained eighteen dart points, a wooden flaker, and two lumps of uranium ore (Lindsay et al. 1968:42–53). Carbon 14 dating of





a nearby sandal from the same level in the cave indicated a date of 7,000 to 9,000 years ago (or more than 10 k years when adjusted to calendar years – see: www.rlaha.ox.ac.uk/orau) (Lindsay et al. 1968:44). The cave lies within the traditional territory of the Southern Paiute people, and the cache contents suggests that uranium ore has been used as a medicine or spiritual material for perhaps the past 10,000 years by the same people. It must, however, be used in ways it deems appropriate or else it becomes an *Angry Rock*.

Radioactivity comes from an *Angry Rock*, which uses this and other forces to warn sentient natural resources along its transportation path not to share their energy with humans (Austin 1996) and can interact with departed spirits on their way to the Afterlife. The *zone of influence* is perceived as being about a mile on either side of the highway and basically results in a warning to all nearby places and resources to withhold themselves from humans. The *Angry Rock* can also directly harm others. Radioactive waste can be spilled due to hauling accidents. Elders especially worry if a spill occurs near a water source. The *Angry Rock* also can upset spiritual beings like Water Babies and human spirits who have not yet gone to the Afterlife. Spills can also leave the *Angry Rock* permanently in the ground near the road. As a sentient being, radiation can choose to move away from a spill location, either on its own account or be moved by the wind.

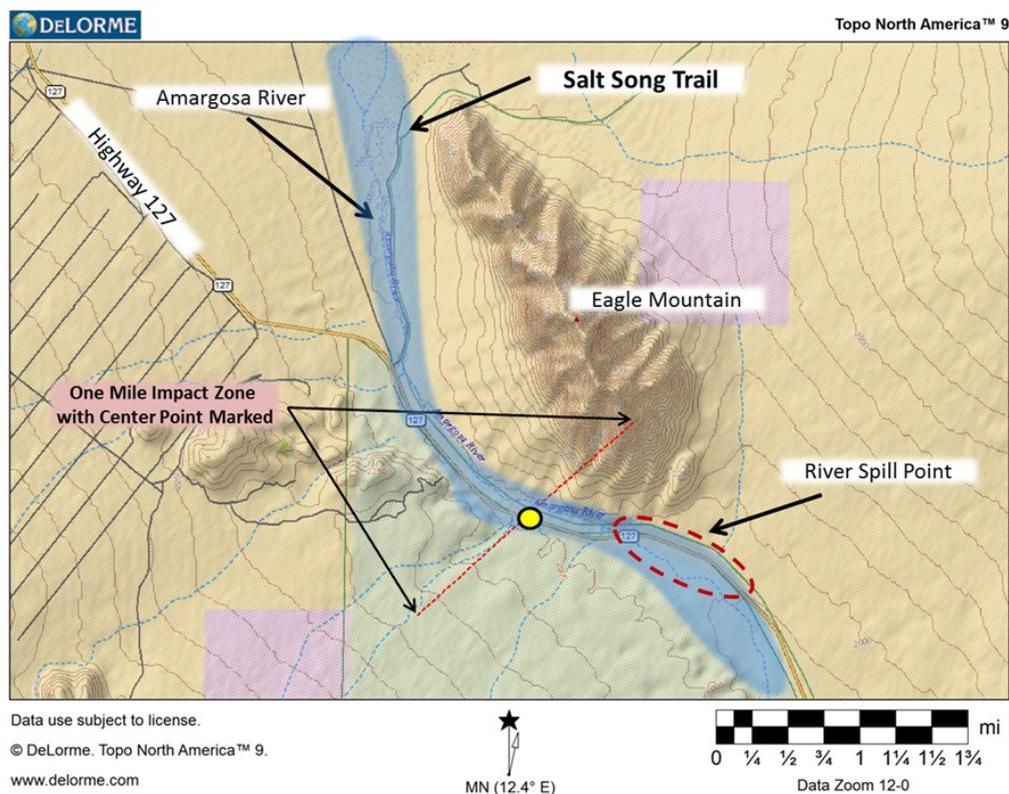
Southern Paiute elders specially selected by their tribal governments traveled during our studies along existing and proposed radioactive waste transportation routes (American Indian Transportation Committee 1999). Cultural anthropologists conducted interviews whenever an elder wanted to identify and discuss a place that would be sensitive to the presence of radioactive waste. Elders were especially concerned that the presence of radioactive waste could prevent the deceased person from passing along the Salt Song trail. Contamination was already perceived as occurring due to current radioactive waste hauling. Concern was expressed that more truck hauls (one projection considered up to 22,000 more hauls a year) and high-

er levels of radioactive waste could result in a radioactive waste spill that could cause a permanent spiritual disruption of the trail.

Elders believe that a large concentration of the *Angry Rock* at one of the Salt Song stops would prevent the deceased person from both stopping at this mandatory resting place and from further proceeding along the trail to the Afterlife. Figure 4 illustrates radioactive waste threats to a song-stopping place, Eagle Mountain, on a sharp bend in the road. Here there are possibilities of three kinds of pollution; (1) transportation of waste along the highway, (2) a spill into the Amargosa River, and (3) a spill along side of the highway. The spirituality of the mountain, the river, and the passage of the departed are all threatened at this point by both waste transportation and spills.

Elders continue to discuss the implications of having radioactivity on their Salt Song Trail to the Afterlife. Increases in volume and strength of radioactive waste contribute to an unimaginable perturbation. Although uranium was known and used traditionally, it was always mined by Southern Paiutes with reverence and only used by religious or medicine specialists. Contemporary U.S. society, however, has since the 1950s mined millions of tons of uranium and used it without Native American permission or proper ceremony. Now these tons of uranium

Figure 4. Eagle Mountain and Associated Radioactive Waste Threats





have become a waste product and the US is seeking places to safely dispose of these Angry Rocks. This is a risk problem that exceeds all traditional situations and cultural adaptations and now seems beyond solution, according to Southern Paiute religious leaders.

DISCUSSION

The emergence of Risk Society by definition contrasts it with risks experienced by the pre and early industrial societies. As such, Beck was largely focused on social types and kinds of risks occurring over the past hundred years in western societies; although he did believe that Risk Society is being experienced worldwide. He made few assumptions, however, about how his new social type would play out in rural and culturally different societies other than to say because of a planet-wide ecology the circulation of pollutants and trust threats creates a World Risk Society (Beck 1992: 23).

The two cases in this analysis illustrate the value of disaggregating key dimensions of unimaginable risk. These cases demonstrate the utility of a risk analysis that separately considers the risk impacts and responses deriving from differences in (1) frequency of occurrence, (2) magnitude, and (3) substance of risks.

Hopi society was culturally pre-adapted to the drought and pandemic that had devastated them by 1780. American Indian people have farmed in and around the Hopi Mesas for more than 2,500 years (Smiley 2002) during which time they came to understand and build responses to various kinds of drought. Pandemic diseases emanated out of Mexico City by 1523 (Dobyns 1966, 1983), although Upham (1986) suggests that none of these exceeded a 30% loss of population. The 1780 trauma of massive population loss and the necessity of throwing the bodies over the edge of the mesas left an indelible emotional scar that exists today (personal communication with Emory Sekequaptewa). Generations of Hopi people had previously experienced drought and population loss from diseases, however, the question remains whether these experiences laid a foundation for the Hopi pattern of receiving people from other societies and cultures and incorporating them as new clans, or whether this was a cultural innovation stimulated by an unimaginable risk event.

A question that remains unanswerable, but nonetheless relevant, is which elements of Hopi society did remain the same and which had to be innovated or even radically altered to make such a massive accommodation. According to Chairman Abbott Sekequaptewa (2008), "Many people still believe that Hopis have always been one people. In fact, our ancestors were different groups, similar in nature, but each with its own history, tradition and priesthood authority for the performance of the rituals, which they possessed." Another Hopi commentator said that Hopi society today is culturally resilient to the extent that they still practice an ancient way of life (Lomawywesa 2008).

Southern Paiutes faced a threat from the transportation of radioactive waste (the Angry Rock) along 83 miles of the path to the Afterlife called the Salt Song Trail. There is serious speculation among religious leaders that the path to the Afterlife has and is being disrupted. These disruptions may be episodic such as when the waste passes a spirit on the trail. Spills are another kind of impact, especially were they to happen at certain locations where the spirit stops (see seven critical song stops discussed above) during the journey to the Afterlife. Spills also last much longer and can move at will. It is not clear to tribal elders, participating in NTS waste transportation studies, what the cumulative impacts of radioactive waste hauls and spills have been or will be and whether or not they could become permanent.

Paiute elders during the waste transportation EISs expressed a deepening concern about impacts to the Salt Song Trail. Elders increasingly believe that transported uranium has and probably will continue to be a permanent cultural problem not capable of being mitigated. Paiute tribal elders simply do not know how to culturally accommodate to what they perceive is a basic break in the life cycle.

This analysis returns to the initial question posed by Risk Society Theory (Beck 1992) that only humans in recent times have experienced unprecedented and thus unimaginable risks and as a consequence we all face *ontological insecurity* (Giddens 1990). Two case studies of massive risk events cannot fully resolve this question, but it is clear from the 1780 Hopi case that long before the Industrial Revolution, social risk phenomena were drastically changing the relationships of traditional peoples with each other and with their natural environment. These data thus indicate that Risk Society Theory is not correct when it assumes that unimaginable risks are new to humans. Human societies have adapted to some old risks and potentially can use some former cultural adaptations to face new risks.

These data also assess the proposition that some societies today are unable to adapt to unimaginable risks because the risk is unique in frequency or intensity. Even though Southern Paiute people knew about radiation and had used it in medicine for thousands of years, they never imagined it could appear inappropriately on the path to the Afterlife and do so in quantities so large that it could prevent the departed persons from reaching their Afterlife. This portion of Risk Society Theory is supported by the Southern Paiute case where traditional leaders are currently without culturally-based adaptive solutions to the risk.

These two cases support the Risk Theory assumption that unimaginable risks weaken social resilience, causing people to lose confidence in their own agency to adapt, and thus causing ontological insecurity. The Hopi people were all but eliminated but still were able to reconstruct a society that was similar to what it had been before the 1780 drought and pandemic. They remain, however, emotionally worried about being prepared if such events occur again. Southern Paiutes have not lost large portions of their population to radioactive waste and they do know about and have used radioactive materials, but



contemporary radioactive waste transportation poses a direct threat to their ability to sing their departed to the Afterlife. This has caused deep and abiding concerns.

These cases support the conclusion that risk impacts to society and culture must be understood in terms of more detail than that provided in Beck's conceptualization of Risk Society Theory. Theory is strengthened when grounded in real experience.

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FORENSIC ANTHROPOLOGY AND FACIAL RECOGNITION AS
APPLIED ANTHROPOLOGY

KYRA SANDSTROM AND DANIEL MARION

ABSTRACT

Forensic anthropology is a field shrouded in misconceptions. While the average person has now probably at least heard of the field, they could not tell you what a forensic anthropologist actually does. A common conception of the forensic anthropologist, popularized chiefly by the television show *Bones*, in which a whip-smart detective uses obscure knowledge of the skeleton to identify bodies, suspects, and even recognize hidden genetic relationships between the victim and suspects based on anthropometry, therefore offering a seemingly magical recreations of what happened just prior to death. While a television show like *Bones* has swelled the numbers of student enrollment and provided more work for practicing forensic anthropologists, it is still in the best interest of any science to be properly represented. This article will attempt to set out the real methods used by scientists in the field and dispel some of the illusions surrounding it.

KEY WORDS: forensic anthropology, forensic facial reconstruction, forensic artist, physical anthropology, applied anthropology

Introduction:

Forensic anthropology is, as the late Dr. Clyde Snow defines it, "... the application of a physical anthropologist's specialized knowledge of human sexual, racial, age and individual variation to problems of medical jurisprudence" (Snow, 1973). Others have defined it more narrowly as "the analysis of human skeletal remains resulting from unexplained deaths" (Byers, 2005) or the application of "knowledge of human skeletal biology to practical problems of concern to the medicolegal system" (Işcan, 2001). Snow's definition is perhaps the most apt, however, as it does not restrict the science to the study of the human skeleton. Forensic anthropology draws upon techniques of archaeology, physical anthropology, medicine, pathology, and even sculpture to shed light on those cases which the medicolegal community cannot solve through more traditional forensic means. Often, this means helping to identify a skeleton or analyzing trauma to help determine how someone died, but this is by no means the bulk of the tasks placed before practitioners. More often, forensic anthropologists are called upon to assist in searches for missing persons or human remains, to assess if skeletal material belongs to the First Nations and needs repatriation, or to consult on how long a person has been deceased.

A brief history of forensic anthropology

Physical anthropology is a young science, even within anthropology, and it has been applied to forensic and medicolegal cases almost since its inception. The study of human skeletal remains was first born in museums, anatomy labs, and was practiced by doctors and anatomists who held a penchant for the human skeleton. Here, in basements and laboratories, a set of techniques as well as a sizable body of knowledge

were developed. Scientists set about to satisfy their curiosity about human variation by seeking to determine sex from the sternum (Dwight, 1881), if the various races could be determined from the skull (Armelagos et al, 1980), and if a human being could be identified from a piece of their mortal remains which would appear to be devoid of personal markers.

The usefulness of forensic anthropology as a form of identification became apparent to law enforcement, who had historically been unable to prove with any certainty the identity of skeletons. One of the first cases to be credited with hinging upon anthropological evidence was the Luetgert case, in the late 19th century, which helped anthropology to break into the realm of jurisprudence. In 1897, "the sausage king of Chicago", Adolf Luetgert, murdered his wife and dissolved her body in a vat of the caustic substance potash. In the thick, slimy residue found in the vat and in the garbage heap police found four small chunks of bone, charred corset stays, two rings habitually worn by the wife, a long hair, and a small piece of a false tooth (Wigmore, 1898). George A. Dorsey, Harvard's first graduate of anthropology, and the person to coin the phrase "physical anthropology" (Stewart, 1982) was called to testify in his capacity as an expert on human bones (Snow, 1982). He identified these fragments as being from a human female and was able to identify which portions of the body they had come from (Snow, 1982). While the identification of the bone fragments as being from a female would be greeted with incredulity today. The process of telling whether or not bone fragments, even quite small ones, are human is a vital step in the process of forensic anthropology today. At the time, however, even though his testimony helped to convict a murderer, Dorsey was ridiculed by his colleagues "for having stooped to such an unseemly forum" (Ubelaker, 1992: 20). At

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SANDSTROM & MARION

Forensic Anthropology...

the time, police and forensic work were viewed as sordid and not the sort of thing a legitimate scientist should engage in.

Between this sensational case and the 1930's, physical anthropology again subsided into a relatively obscure branch of academia, although the ranks of its practitioners grew steadily. In 1930 there were enough physical anthropologists in practice that they founded the American Association of Physical Anthropologists (Stewart, 1982), however forensic anthropology was never discussed. Around this time, as Clyde Snow puts it, the FBI realized that they had "a whole nest of physical anthropologists ensconced on the top floor of the Smithsonian, just across the street from [their headquarters]" (Snow, 1982, pg 106), and began to bring them skeletons from unsolved cases around the country. While the Smithsonian and the Federal Bureau of Investigations worked together to solve dozens, if not hundreds of cases in the following decade, this work was kept mostly secret (Stewart, 1982). The view that it was an unseemly use of the science persisted (Ubelaker, 1992). In fact, the Smithsonian's work with the FBI was such a closely guarded secret that when Dale T. Stewart took over the curatorship of the collections from Aleš Hrdlička in 1942, he discovered a wealth of case material that he had never heard of, despite the fact that the two men had worked closely together for years (Ubelaker, 1992).

Despite their reluctance towards speaking or writing about these cases, anthropologists and the FBI continued to work together. In 1939, a spotlight was again turned on physical anthropology and its potential as an applied science, when, supposedly at the personal behest of J. Edgar Hoover, Milton Krogman wrote "A guide to the identification of human skeletal remains" in the *FBI Law Enforcement Bulletin* (Stewart, 1982). This guide became a focal point for the science, both for practitioners and law enforcement personnel. Towards the end of World War II, the United States Army Quartermaster Corps began recruiting teams of forensic anthropologists to help identify and repatriate war dead (Snow, 1982). After the war ended, the US Army set up a forensic anthropology laboratory in Japan and continued to identify skeletons, both from WWII and from the Korean war (Stewart, 1982). The scientists used their time examining these skeletons to collect valuable information and develop methods for the aging of the skeleton that are still in use today (Brooks, 1990). This lab was later moved to Pearl Harbor under the leadership of Charles Snow and Mildred Trotter and continues to be a functioning laboratory under the name Joint POW/MIA Accounting Command Central Identification Laboratory (JPAC CIL) (jpac.pacom.mil).

The events of the next few decades may be summed up briefly. In the 1950's and 60's, the coroner's offices around the country began to be replaced or augmented with medical examiners (Snow, 1982). Coroners are elected officials, often with little or no medical experience, who issue certificates of death. Medical examiners, however, must be trained in medicine and conduct much more thorough investigations into deaths. Physical anthropologists around the country found themselves being called in more and more to consult on forensic cases, and many began to think of themselves as "forensic anthropologists" as their caseloads grew (Snow, 1982).

Other applications for physical anthropology were also beginning to appear during this time. Dr. Clyde Snow and an anthropologist named Joseph Young were employed by the Federal Aviation Administration to use anthropomorphic data (the measurement of the human body and skeleton) to create more realistic crash test dummies and to help design the interiors and safety equipment on airplanes, as well as being called in to help identify victims after airline disasters (Collins, 2005). In 1971, Dr William Bass founded the University of Tennessee Anthropological Research Facility (fac.utk.edu), better known as the "Body Farm", to study how bodies decompose in hundreds of circumstances, from being buried under a slab of cement to being hung from a tree.

In 1972, forensic anthropology took a dramatic step forward into the public sphere when they were recognized by the American Academy of Forensic Sciences. Forensic science in America is overseen by an organization called the American Academy of Forensic Sciences (aafs.org). This organization acts in much the same way as a medical certification board, providing standards of best practice and ensuring that members and practitioners live up to these standards. Prior to 1972, only two anthropologists had ever become members of the Academy, Dr. Krogman and Dr. Ellis Kerley, and they had been placed in the "general" branch (Snow, 1982). At the 1972 meeting of the Academy, after a single evening of enthusiastic, scotch-fueled telephoning, Dr. Kerley and Dr. Clyde Snow (who had stopped by the conference out of curiosity) convinced a dozen anthropologists to join them in forming a separate forensic anthropology branch of the American Academy of Forensic Science, exceeding the minimum number of scientists needed by four (Snow, 1982).

Since then, interest in the science has only grown. In 1977, the American Board of Forensic Anthropology (ABFA) was founded as a certifying organization (theabfa.org). This non-profit organization provides a set of industry standards and also certifies "diplomats", who represent the ideals of a forensic anthropologist. At the time of this writing there are 68 active diplomates of the ABFA (theabfa.org), and there are dozens, if not hundreds, of practicing and teaching anthropologists across the country. Many schools now offer bachelors and masters degrees in forensic anthropology and the ranks of students in these courses is always growing. A good deal of this, as mentioned above, may be accounted for by the popularity of the forensic sciences on television and in fiction. Those who continue through the ranks do so because of a love of the science and a dedication both to advance the science of anthropology and to assist the medicolegal community.

Forensic Anthropology Today

The truth of forensic anthropology, at least for those of us not lucky enough to work directly with the FBI, is that we must be content with only our own small piece of the larger puzzle of the judicial process. Forensic scientists are no more privy to the minutiae of legal cases than are the general public and must often be contented to never know the outcome of cases on which we have worked. Thankfully, we are usually informed if a correct



identification has resulted from our efforts, but not even this is guaranteed. The evidence to be found in the skeleton is often less than satisfactory. In fact, 40.7% of all cases analyzed by the Smithsonian Institution between 1962 and 1994 showed no evidence of trauma whatsoever (Grisbaum, 2001).

To practice forensic anthropology, like most applied anthropological fields, is to accept a certain degree of cognitive dissonance. As anthropologists we are taught never to use the term "race" for biological purposes, as it is an outdated system with little basis in science. As forensic scientists, however, we must accept that police departments around the country still use this system and we must tailor our results to fit within it. Similarly, we must quell our natural inclination to forgo "certainty" with degrees of certainty. The US criminal justice system deals primarily in absolutes (Snow, 1982); is this skeleton "black" or "Asian"? 25 or 30 years old? Shades of gray are seldom welcome and this can cause difficulty for a scientist. Still, the contributions of forensic anthropology are great enough to justify these concessions.

In actual fact, the bulk of the cases undertaken by forensic anthropologists are not high profile murder cases. Most of these cases are determining whether or not bones found by concerned citizens are human or not (they most often are not), and determining the heritage of archaeological remains to repatriate them if possible. Metropolitan State University of Denver's Human Identification Laboratory (HIL) works closely with the Office of Archaeology and Historic Preservation (OAHP) to ensure compliance with the North American Graves Protection and Repatriation Act (NAGPRA).

Before remains can be analyzed, they must first be recovered from the field. The recovery of human remains, or potential human remains, often requires the use of techniques developed in archaeology. Many remains are buried, and vital clues can be gained by carefully and systematically exposing the remains and the walls of the grave (Hochrein, 2002), as well as completing a detailed search of the surrounding ground. Recovering the remains allows researchers to get a complete picture, including details at the scene that might not be reported by investigators. In a perfect scenario, the site would be surveyed, mapped, photographed, and the soil taken down in miniscule layers with all excess screened when a burial is present, just like an archaeological site. No material would be left behind, no clue overlooked. This, unfortunately, is rarely the case. Murderers do not hide their victims in convenient locations. Even the archaeological remains brought to forensic anthropologists' attention are often found in bizarre places. In many cases, anthropologists are called in to assist in the search for these remains if their location is not known. The untrained eye might mistake animal bones for human, miss clues as to the location of a clandestine grave, or miss clues that can be gained from the position of remains. No two forensic sites are the same, and this often requires unique solutions. Forensic scientists must be prepared for rough terrain, small spaces, and potential biohazards while in the field.

Forensic Laboratory Analysis

After the remains have been recovered and brought to the lab, the task of identifying them begins. To avoid any type of bias, anthropologists are told as little as possible about the remains they are working on. This is often impossible, since police will often inform those working on the case who the suspected victim is. To counteract this, a peer reviewer is kept completely in the dark; they will not work on the case at all until they do their own analysis in the laboratory. This ensures that the results will not be skewed by an investigator's personal opinions about a case or body. Essentially, the investigator is working blind, building what is called a "biological profile" (Byers, 2005). This profile is then used by the police to narrow down their list of potential victims until, hopefully, they find the correct one. In order to do this, forensic anthropologists use a set of steps. Although each lab and scientist has their own particular twist, the steps for building the biological profile were set out by Clyde Collins Snow in 1982 and are as follows:

1. Are the remains human?
2. Do they represent a single individual or the commingled remains of several?
3. When did death occur?
4. How old was the decedent?
5. What was the decedent's sex?
6. What was the decedent's race?
7. What was the decedent's stature? Body weight? Physique?
8. Does the skeleton (or body) exhibit any significant anatomical anomalies, signs of old disease and injuries or other characteristics which, singly or in combination, are sufficiently unique to provide positive identification of the decedent?
9. What was the cause of death?
10. What was the *manner of death*? (Snow, 1982. pg 104)

Whether remains are human or not is obviously one of the most important questions on a forensic case. Owing to vast differences in human morphology from other animals, whole bones are easily distinguished from animal bones by anyone familiar with the human skeleton. Many a forensic anthropologist has impressed a spectator by identifying a bone as not being human after the briefest glance. In other circumstances, identification can become more difficult. Situations where bones are heavily damaged, broken, weathered, or where only a small piece of the bone exist can make identification difficult. Small structures called osteons form the hard portions of bone. When viewed under a microscope, these osteons become clear and patterns in their formation can be determined. Humans tend to have a haphazard osteon arrangement, whereas animals have a denser, linear arrangement (Dominguez, 2012). In order to determine this, however, one needs to cut the bone in a thin enough slice that light may penetrate and a microscope may be used. This process takes several days of dedicated hard work.

After the forensic significance of a skeleton has been established, sex, age-at-death, and race must be determined. These



three characteristics are perhaps the most important for establishing identity. Police departments characterize missing persons by these traits before using more specific traits to distinguish one missing person from another. There are dozens of methods for detecting these traits; far too many to be put down here. Sex is most accurately determined by looking at morphological features on the skull and the pelvis. Humans exhibit a small degree of sexual dimorphism, meaning that males and females display slight skeletal differences after puberty. The pelvis is the most accurate, unsurprisingly, because of the morphological differences required for childbirth. The pelvis is also particularly useful because the estimation of sex is accomplished using shapes and angles, not size alone. This removes any confusion that may be caused by a large female or a small male. Age is established by the skull, teeth, and by the presence of old-age diseases in adult skeletons. In children and young adults the growth phases of the bone are used. Race, or more appropriately, "geographic origin", is most often determined by the skull. Certain features accumulate in populations, either as a feature of genetic drift or environmental adaptation, and can be used to categorize it into being of African, European, or Asian origin (Byers, 2005). Statistical programs may also be used to narrow the population down still further by using the measurements of the skull and face. Wherever possible, stature and physique are included in the biological profile, but owing to the variation between individuals these methods are far less accurate. New methods are constantly being developed for describing a person as they would have been in life. Forensic anthropologists do not expect to be given a complete skeleton to work from and the fate of an identification may rest with a piece of bone small enough to fit in the palm of the hand. The structures of the inner ear are proving particularly useful in the realm of sex-determination, owing to the fact that they are fully formed at birth and vary slightly between males and females (Osipov, 2013), and racial affiliation is becoming easier and more accurate as DNA testing techniques advance.

Even with these elements, identification can be elusive. There may be many missing persons fitting the same description or the missing person may have been transported far from the county in which they disappeared. This is where the importance of "anatomical anomalies" (Snow, 1982, pg 104) becomes apparent. Old injuries visible on the bone, signs of disease for which there may be an existing medical record, or congenital defects might be the crucial details that distinguish twenty-five year old white woman (A) from twenty-five year old white woman (B). Once these details are known, they can be spread about the country as well, widening the net if the victim is not identified within the county in which they are found.

One method which can be tremendously useful in identification is forensic facial reconstruction. The term "forensic" is defined as the use of science and technology in the investigation of facts or to establish evidence in a court of law.

"It is incumbent upon all who bear the responsibilities of criminal investigations and prosecutions to understand more about forensic art . . . Forensic art

is 'any art that is of a forensic nature; this is, art used in conjunction with legal procedures. . . A working definition of **forensic art is any art that aids in the identification, apprehension, or conviction of criminal offenders, or that aids in the location of victims or identification of unknown deceased persons.** (Taylor 2001).

Taylor states, Forensic art . . . can be divided into four areas of concentration. . .

Composite imagery: graphic images made up from the combination of individually described component parts. . .

Image modification and image identification: methods of manipulation, enhancement, comparison, and categorization of photographic images.

Demonstrative Evidence: Visual information for case presentation in court as trial displays.

Reconstruction and Postmortem Identification

Aids: Methods to aid in the identification of human physical remains in various conditions.

Forensic Facial Reconstruction and Forensic Anthropology

The history of facial reconstruction, in general, is derived from its original purpose which was educational. This educational orientation was presented in two forms 1) the artistic/scientific anatomical studies of the human face and 2) the archeological/museum representation of what peoples from the past may have looked like. Forensic facial reconstruction can best be understood as a genetic family relationship between science (anthropology) and art (either sculpture or drawing). The child, facial reconstruction, has the parents, Art and Science. Forensic facial reconstruction is an independent entity that draws from both Art and Science; yet neither is dominant in the "child." It must be clearly understood that employing either the art or the science alone cannot solve any given forensic facial reconstruction problems and/or the comingled art/science situations that arise during its creation. Therefore, the forensic application of facial reconstruction has historically required a collaborative working relationship between a physical, preferable, a forensic anthropologist and a sculptor.

Working together: the physical anthropologist and the facial reconstructionist

A working relationship between physical anthropologists and facial reconstructionists began in the late 1940s with anthropologist Wilton Krogman and artist Mary Jane McCue. They conducted tests into the feasibility and then the accuracy of using 3D facial reconstruction as a means of identifying human beings. Further developments came in 1967 when forensic anthropologist Clyde Snow and artist Betty Gatliff successfully produced a forensic facial reconstruction of an unidentified Native American man. This working relationship generated more refinements of strategies and techniques through the decades of the 1990s and into the 21st century. When forensic facial reconstructionists collaborate with physical anthropologists it is often in



the form of official written reports and clarification communications. Therefore, their relationship affords both the anthropologist and the artist the opportunity to better appreciate the other's expertise and perspective.

The reconstruction process

The facial reconstruction process consists of two phases, according to Taylor, the technical and the artistic. The technical phase can be thought of as

1) The Condition of the Remains: This begins with a scientific anthropological analysis of the skull, given in the form of the written report from a case experienced, doctoral level forensic/physical anthropologist. In the report, the facial reconstructionist must be informed as to the most likely Emaciated, Average, or Obese- of the unidentified person's remains in order to select the appropriate soft tissue marker.

2) The Facial Reconstruction Methods: Although, any one of the three facial reconstruction methods – American, Manchester, or Russian- are capable of producing a reasonable likeness for any given case, in my experience as a forensic artist, the data from the forensic anthropology report should influence which method is the most appropriate to use.

The American/Gatliff Method uses soft tissue depth markers glued to the surface of a cast from a mold of the original skull. The markers indicate the thickness of the soft tissue (muscle and fat deposits) in 21 anatomically selected locations on the skull. These 21 locations are then interconnected with strips of clay in order to create a matrix of the given facial volume. The spaces in between the strips of the matrix are then filled in which in turn reveals a reasonable likeness of the unknown person's face.

The Manchester/Neaves Method uses soft tissue depth markers, on casts of the original skull, for the same purpose as the American/Gatliff Method. But, instead of creating a clay strip matrix between markers to indicate the volume of the face the Manchester/Neaves Method builds the fleshiness of the face anatomically muscle by muscle from the deepest to the skin surface to expose a more reasonable likeness of the deceased face.

The Russian/Gerasimov Method is the most anatomical of the three. By working directly on the original skull the face is built muscle by muscle from the deepest to the skin surface like the Manchester/Neaves Method. The Russians consider their method to be the most anatomically accurate and therefore produces the most reasonable likeness of the unknown deceased person's face.

3) The Determination of the Profile of the Nose: There are a number theoretical methods to approach determining the projection of the human nose relative to the bony contour of the nasal aperture, and the structures of the nasal bones and anterior nasal spine. They include the Snow-Gatliff, the Gerasimov, the Lebedinskaya, the Prokopec & Ubelaker, and the Renn Methods. These theoretical methods cannot be briefly explained satisfactorily in this short article.

The artistic phase can be thought of as developing, by way of visual-tactile means, a recognizable interpretive likeness of

the unidentified person's skull from the explicit alpha-numeric description in the forensic anthropology report. In other words, by the application of either sculpting and/or drawing media to give a tangible presence to the anthropological indicators. This is to say that if the anthropologist's report indicated that the skull is male, probably of northern European ancestry to draw or sculpt eyelids that are Asian in appearance would not begin to create a reasonable likeness of that individual. The minimum artist skill level should be, as indicated by Edwards in Drawing on the Right Side of the Brain, at or just beyond "the symbol system of childhood". A characteristic example of this symbol system would be drawing eyes as football shaped outlines with circles in the centers.

How Facial Reconstruction works in Forensic Context

Recognizing the purpose for the project and specifically who requested the reconstruction can determine the forensic/legal reasons for the project. But possibly no criminal actions are involved and the facial reconstruction is for archeological sources or identification of a missing person. Essentially, the goal of the forensic facial reconstruction is to create a reasonable likeness of the person to bring about his or her identification. Being able to identify and explain the structures of the skull that indicate sex, age, and ethnic origin requires knowledge of cranial structures. This influences how particular facial features might be shown in drawings or shaped in sculptures (Wilkinson, 2004). This brings about viewpoints from both the arts and the sciences in recognizing that human remains were once a living person.

As a forensic facial reconstruction artist working in Colorado, Daniel Marion had the opportunity to collaborate with certified forensic anthropologists on many cases. One of his first experiences was in 1990 when he participated in a forensic sculpture workshop under the direction of the late Michael Charney of Colorado State University (Charney and Wiber, 1980). The facial reconstruction of the skull he was working on was that of an elderly man of African American ancestry. Additional information provided by Charney, indicated that in life this person was left handed and had a broken nose, probably resulting from having been a boxer when he was young. This intimate personal information about the skull he was working on left a deep impression on Marion. With Charney's letter of recommendation, Marion was motivated to enter the field of forensic facial reconstruction. In the past twenty years Marion has participated in 26 facial reconstruction cases. Sixteen of these cases proved to be reasonable visual likenesses of these people, and contributed toward positive identifications.

We previously stressed that facial reconstruction is usually carried out for either of two main purposes, forensic or archeological. Forensic applications are important for the law to identify human physical remains in various conditions. Archeological applications are often for historical verifications; for example when the remains of famous people are uncovered such as those of Tutankhamen or King Richard, III of England. This may also be for giving a more human facial presence to the skulls of prehis-



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toric humans such as the 5300 year-old Iceman (*Denver Museum Quarterly*, 1993) or Kennewick Man. There can be rare instances in "cold cases" when the need for the forensic facial reconstruction becomes important once again. This occurs when many years have passed since the estimated time of death of the unidentified person.

Marion gives this account of the situation:

I was assigned a forensic facial reconstruction case for the Coroner's Office of Jefferson County, Colorado. This case taught me how important it is to respect the human remains as a person. The remains of an African American, "Jane Doe" whose name later was determined to be "Lisa" was discovered in March of 1989 along Lariat Trail on Lookout Mountain. The estimated time of death was two months prior to the discovery. Her cause of death was undetermined and the remains were in a badly decomposed state. It was estimated that Lisa was 30 to 40 years old, 5 feet, 4 inches tall and weighed about 115-120 pounds. She had a reddish tint to her short black hair. She had chipped front teeth and wore a white sweatshirt with the design of a cartoon animal dressed as a wizard sprinkling stardust. The investigation into Lisa's death was 14 months old before I was commissioned to do a reconstruction of her face in 1990. After some time it seemed my sculpture of her face generated no new leads into her death so the Coroner's Office authorized her burial in Golden Cemetery after a brief ceremony. The marker on her grave read "Jane Doe 1989 known only to God. May her soul rest in peace."

Six years later, after Lisa's burial, the Jefferson County Sheriff's Office opened an investigator cold case office and Lisa's case was one of fifty being investigated. As a result of this decision Lisa was finally positively identified. A team of specialists from the Coroner's Office, the Sheriff's Office, and a forensic anthropologist had made use of Lisa's facial reconstruction sculpted by Marion back in 1990. This is an understandable example of how working together with law enforcement, a forensic facial reconstructionist and the anthropologist contributes to the solution of cold cases of unidentified persons.

Why is facial reconstruction important

We have emphasized that in creating facial reconstructions it is always necessary to be aware of the sanctity of human remains. A report in the *National Institute of Justice* journal made the point that with all the worldwide

crises these days few people would think of the number of missing person and unidentified human remains in the United States as a national crisis. On any day there can be as many as 100,000 active missing people cases in this country. The report notes that every year tens of thousands of people vanish under suspicious circumstances. This presents a tremendous challenge for state and local law enforcement agencies because thousands of sets of unidentified human remains languish in evidence rooms of medical examiners throughout the U.S. (Ritter, 2007) As construction of new housing and resort facilities, commercial centers and other types of buildings excavate and disturb the land, unidentified human remains can turn up. This recently occurred in Vail, Colorado in summer of 2014. Then in October, 2014 the *Wall Street Journal* featured an article on the dedication and work of a forensic anthropologist trying to identify the dozens of unknown people who die in their attempts to enter the U.S. at our borders in Texas. (Campoy, 2014) This all the more emphasizes that proper respect for human remains should always be in the forefront for the forensic facial reconstructionist and the physical anthropologist. The authors hope that in the near future a greater interest will be evident for the field of forensic facial reconstruction and the role that applied anthropology can play in this needed profession.

Conclusion- The future of forensic anthropology

In 2001, Dr. Mehmet İşcan said that "anthropology and its techniques are among the most advancing areas of forensic science" (İşcan, 2001. pg 4). This remains true today. As the popularity of the science grows and technology advances, new techniques and methods of analysis are developing at an ever more rapid pace. Computer modeling has opened up field of

Skull with soft tissue depth markers



Development of Facial Features based on the Manchester Method



inquiry that were previously impossible. The internet has allowed scientists to access research collections from all over the globe. Police departments, governments, and scientists can share information instantly and help solve crimes faster than ever before.

Forensic anthropology is also spreading. Once a purely American endeavor, forensic anthropologists' work all over the globe has sparked local interest and resulted in organizations being founded in numerous other countries beyond North America. The United Kingdom founded the British Association for Human Identification (BAHID) in 2001 and the British Association of Forensic Anthropology (BAFA) in 2011 (bahid.org), both of which modeled their own practices on those of the ABFA. Clyde Snow's work in South America on the *desaparecidos* and subsequent foundation of the Argentine Forensic Anthropology Team (Equipo Argentino de Antropología Forense, EAAF) (eAAF.org) has sparked tremendous interest in the forensic anthropology in the areas in which the organization has worked and left young forensic anthropology programs in its wake. It is highly likely that more programs will appear worldwide as more people are exposed to the science.

Gone are the days of a small group of elite scientists quietly handling cases for the FBI. The cat is out of the bag and forensic anthropology has become a hot topic. This is not bad, more practitioners in a broader field means an ever increasing wealth of information and resources to draw upon, and as the number of human beings increases so do the numbers of unidentified dead. It is important, however, that the science is faithfully practiced and is well-represented. The popular media depictions of forensic anthropologists may help to swell student ranks, but they also leave casual observers with misapprehensions and high expectations. Thankfully the swelling numbers of students are matched by the growing number of practitioners who put their skills and knowledge to work in an ever changing and evolving science and are willing to teach these newcomers. With any luck this will lead to a new generation of scientists who genuinely love the work, even if it is not quite as glamorous as they portray it on television.

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Daniel Marion is a freelance Forensic Artist for the Colorado Coroners Association of the United States. His credentials include the only International Association for Identification (IAI) certification as Forensic Artist for the state of Colorado and a postgraduate certification in forensic art from the University of Dundee in Scotland. His specialty in forensic art work is drawing and then sculpting two and three dimensional facial reconstructions, also known as facial approximations, restorations, and making post-mortem drawings of deceased individuals who had severe facial trauma.

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ABSTRACT

The purpose of this article is to document the empirical uses of the *materia medica* of vodu priest-healers and contextualize these medicines in the religious matrices of southern Togo. Gorovodu is the dominant religion of the area and central to the physical and social well-being of ethnic Ewe vodu practitioners in the greater Volta region. Though ethno-pharmacological and anthropological research has focused on African medicine for quite some time, disciplinary boundaries frequently relegate the material dimensions to ethno-pharmacology and the symbolic dimensions to anthropology, reinforcing nature-culture dualisms inherent to Western thought. This article seeks to unify empirical data stemming from the ethno-pharmacological literature on plant medicine and ethnographic data on etiology, diagnosis, and treatment to provide a more cross-disciplinary view of medicine and healing in West Africa. Engaging community priest-healers and patients in a fishing community along the Bight of Benin, researchers gathered data on plant medicines and plant-based healing practices using videography and participant observation from 2005-2006 and again in 2013. This article contributes to the growing body of literature on African herbal medicine by expanding upon previous ethno-pharmacological codifications and supporting them by giving ethnographic treatment to values and beliefs of vodu religion in which these prescriptions are situated.

KEY WORDS: Traditional Medicine, African Traditional Religion, Traditional Healing

Introduction¹

The prayer ceremony began every Friday morning in the Togolese fishing village of Gbedala. Though the ceremony name, *Salah*, is borrowed from Islam, this is a strictly West African vodu affair held to praise the gods and ask for blessings. The men had not yet returned from the sea that mid-morning, so fifteen women wrapped in white ceremonial cloth (*pagne*) clustered in a semi-circle on wooden benches in the main courtyard of the village. Two young men kept rhythm with an *adodo* drum and bell while an elder priestess, Dede, stood in the center leading the lyrical call and response that characterizes vodu ceremonies in Togo. Praises were sung in the morning sun to Kunde, king of the Gorovodu spirits, and his wife Ablewa, guiding spirit of market women. "The times are full of jealousy and envy, celebrate the success of others, find solace in Kunde," repeated the women under the Dede's guidance. On the outskirts of the circle sat two anthropologists clapping with the rhythm and observing the ceremony.

Soon, the vodus came to the ceremony and entranced the worshippers. The presence of the gods became known when two women began spinning, losing their individuality in the possession. Suddenly, Kunde, king of the gorovodus, possessed an adept. She stood and began to shake and jerk violently. Other women surrounded her to ensure she did not hurt herself or others and guided her into the shrine. Intrigued, one of the anthropologists walked over and peered into the open door. The possessed adept was sitting on a stool surrounded by the women, eyes tightly shut and slapping the hands and shoulders of the other women. Kunde was in control. Dede was

hand feeding a powder made of roasted white kola nut and guinea pepper into her mouth. Standing and heading for the door, Kunde ordered the anthropologist to stay out of the way. Returning to the circle of worshippers, where the drumming and clapping continued unaffected, she began shouting in Ewe. A few women hastily departed the circle. Kunde began dancing in the center while the remaining women raised their voices and clapped to accommodate the god.

Taking all of this in, the anthropologists did not immediately notice the head priest (*bokonosofo*) of the community, an elderly man named Bisi, preparing the medicinal wash outside of the circle behind them. He knelt in front of a large white basin around which a circle of chalk was inscribed in the sand for *Legba*, god of crossroads and keeper of gates. Next to the basin sat a bottle of gin, baby powder, and an old green satchel. He poured the gin around the basin while praying quietly, a customary offering to the vodus. An older woman assistant mixed water and baby oil in the basin while Bisi produced two different bunches of leaves from the satchel. He grabbed crushed dried leaves from two plastic bags and mixed them into the basin with his hands.

The women who had left the ceremony now returned with young children, the oldest being perhaps two years old. One by one the children were washed in the bath made of water, oil, and herbs (*amatsi*); all while the ceremony continued unabatedly behind them. After the final child was washed, Bisi motioned for an anthropologist. He had been struggling with fever the past week, taking acetaminophen to reduce the distress. He suddenly found himself being stripped to his under-

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wear and made to sit cross-legged next to the basin. Bisi then washed him too in the medicinal bath.

Once finished, Bisi and his assistant gathered their materials with smiles and handshakes. The ceremony ended as women departed to meet their fishermen at port to gather the fish and sell at market. Dede departed for the same reason, while the Kunde adept, now out of trance was too exhausted for a follow-up interview. Before departing, Bisi offered an explanation: the vodu god, Kunde, possessed the adept to deliver a message to the congregation. Disease was coming to Gbedala village in the form of illness and social strife (*maso-maso*). Preparations must be made. Through the adept, Kunde ordered the most vulnerable among them, young children, to be washed in the medicinal bath. While women gathered their youngest, Bisi was summoned to prepare the bath using a well-known prescription of medicinal leaves *kpatima* (*Neoubouldia laevis*) and *kukotsi amagba* (*Heliotropium indicum*). Recently struggling with fever, the anthropologist too was viewed as vulnerable, and so was asked to bathe along with the children.

The use of herbal medicines is perhaps the most important, oldest, and widespread form of medical therapy, yet herbal prescriptions that relieve suffering are represented by only a subset of medical anthropologists. In Africa especially, there is a long-standing tradition of reducing medicine to ritual and spirits, and healing practices to causes of illness rather than viewing both as crucial to maintaining physical and social well-being (Morris 2011, 245). The purposes of this article are to mitigate this tendency by documenting the *materia medica* of Gorovodu priest-healers and contextualize their place in religious healing practices. The contribution of this article to the growing body of applied literature on West African medicine is twofold. We will expand upon previous ethno-pharmacological codifications using data gathered from bokonosofos and support them by giving ethnographic treatment to the healing processes behind select plant-based medicines. Though these codifications are strictly our constructs and make little sense locally, they are one crucial step towards breaking down linguistic, intellectual, and cultural barriers between practitioners of bio-medicine and atikevodu. Second, ethnographic case studies will support the arguments of Morris (2011) that challenge the notion that “folk medicine” is primarily concerned with etiology and psycho-social treatment.

Literature

Over 65 percent of the world’s population utilizes plant-based medicines as their primary mode of health care, yet, only 6 percent of plant species have been screened for biologic activity and 15 percent have been evaluated phytochemically (Fabricant and Farnsworth 2001, 69). In Africa, ethno-pharmacologists draw attention to the natural properties of local botanical resources in the region in order to bio-medically validate traditional practices (Koudouvo et al 2011). These studies are useful for public health intervention design and delivery and for transcribing the beneficial properties of local *materia medica* into the disciplinary discourses of biomedicine

which will in turn lead to innovations in disease control. In anthropology, the ethnographic study of healing practices in Africa has a long history (see for example, Evans-Pritchard 1937; Feierman and Janzen 1992; Janzen 1992; Turner 1968; Vaughan 1994). Anthropologists recognize that illness and healing is embedded in social, economic, political, and historical contexts (Finkler 1994; Waldram 2000) and that the plant medicines are part of the socio-cultural matrix through which disease and healing are given meaning and significance. Hence, medicine has a symbolic efficacy above and beyond any known pharmacological use (Csordas 1996; Csordas and Lewton 1998; Oths 1992). These different disciplinary vantages have generated significant communication problems between botanists, social scientists, herbalists, religious authorities, medical patients, and cultural contexts more generally (Aiyeloja and Bello 2006; World Health Organization 2002). For example, whereas Vaughan 1994 argues that medical anthropology reduces scientific medical practice to “its theory of itself” (291), Fabricant and Farnsworth describe ethno-medicine as based upon “biology, chemistry, biochemistry, pharmacology, and many other disciplines...” (69, emphasis added). Anthropological studies undervalue the empirical dimension of disease treatment by herbalists (see Morris 1998, 2011) while the oral transmission of knowledge and beliefs in witchcraft or sorcery that frequently surround traditional systems of healing prevent them from being accepted or even taken seriously by a biomedical approach based upon the scientific method.

It is obvious today that both the empirical use of medicinal plants (Ayensu 1979; Morris 1998, 2011) and spirits or other forces that transmit cultural traits, diagnose sickness, and eradicate disease (Boddy 1989) form the core of “traditional” healing practices and represent the empirical and social dimensions of healing practice. Ethno-pharmacologists provide analyses of the use of plants in treating specific conditions (Koudouvo et al 2011; Ghasi et al 2011) or outline different medicinal plants, their local and Latin names, and their pharmaceutical properties (Aiyeloja and Bello 2006; Busia 2007; Lawal et al 2010; Oliver-Bever 1986) in order generate recognition and respect for West African medicine from the greater biomedical community.² Anthropologists increasingly recognize that many healing experiences are the straightforward application of known medicinal herbs to known medical conditions. Ritual, in the form of diagnosis or from the gods is important, often vital, but sometimes secondary to the physical treatment of the patient’s suffering. Working in Malawi, Morris (1986) argues, “There is nothing “magical” or “mysterious” about the majority of Chewa medicines” (375). Plant medicines are agents of physical healing that are situated in cultural contexts. Understanding their effectiveness lies in both these realms.

Methods

Since 2005, periodic fieldwork and residence in the peri-urban coastal village of Gbedala allowed researchers to gain the rapport necessary for qualitative data collection regarding sacred plant-medicines. This community was chosen because of

its reputation for effective healing and the religious shrine is iconic for cultivating and sustaining indigenous plant medicines. Data for this article was gathered in two phases: 2005-2006, and 2013. Between 2005 and 2006, researchers conducted semi-structured interviews with priest-healers (*bokonosofo*) in the community and former patients who had undergone treatment within twelve months' time. Data included medicinal plants used in healing. Overall, researchers recorded twenty-seven of the most common prescriptions used by bokonosofos in healing, acknowledging that several hundred make up their healing repertoire. In 2013, researchers deployed videography to document the production, collection, and preparation of plant materials used in medicine. Local names for plant specimens and the relationship between medicines and ailments were cross-referenced with the existing pharmacological literature for biomedical identification and pharmacological properties. Our unifying of the ethnographic field data and data collected from the ethnopharmacological literature is presented as Table 1 and Table 2. Some specimens used and described by priest-healers could not be identified in the existing literature.

Ethnographic Context

Along the Togolese coast, coconut palms shield small European-owned hotels from the dusty moonscape road. Factories sit behind stone walls and rusted iron gates while market women wait patiently in makeshift stalls for a passerby. The sea persistently encroaches on the beaches, promising to eat the hotels and fishing villages that do not retreat. The village of Gbedala, an ethnically Anlo-Ewe community of about 1,600 people, sits on the coast several kilometers east of the capital city. The average income is approximately \$2/day. Most men work as fishermen, and most women sell the fish of their husbands or kinsmen in the *grand marché* of Lomé. Maize and cassava dough (*akume*) eaten with spicy tomato soup and fish is the most common meal. Goat and chicken are consumed occasionally and during ceremonies beef may be available. There is a small bar serving dry goods and liquor but most villagers purchase agricultural foodstuffs from the smaller markets in nearby communities. Though the sea has been bountiful the last two years bringing money to villagers' pockets, life remains fragile and unstable.

Ethnographic survey in 2006 suggests that chronic stomach or body pain and fevers are the most common ailments in the community but disease comes in many forms: dysentery, parasites, yellow fever, and the ever-present malaria; depression, anxiety, or chronic fatigue; also unemployment, misfortune, and jealousy (*n'bia*). Funerals are frequent. Infant mortality seems gruesomely high. Most children have had some immunizations from government medical officers that visit the village irregularly, but there is no dispensary or clinic on site. Despite the presence of Western allopathic medicine in Lomé, traditional medicine remains the most viable option in the community. Most adults have never visited a hospital in the city due to problems of access and affordability. Hospitals cannot accept those who

cannot pay, and rates are unaffordable for a family earning a livelihood through fishing. Hence, Gorovodu medicine is the dominant mode of healthcare delivery. Healers accept what the ill can afford. The wealthier are expected to pay significantly. The poorer are expected to pay whatever is available.

Goro is Hausa for kola nut (*Cola nitida*), the acerbic caffeineated stimulant that acts as a digestive medicine and antidepressant and also serves as a powerful sacrament that forces truth confessions when chewed by initiates. Gorovodu (lit: kola nut vodu) is a vodu order found along the Bight of Benin and in the Volta region of contemporary Ghana and Togo. A system of law (*ese*), morality, and an *atikevodu*, or medicinal vodu order (lit: tree root vodu), Gorovodu is central to the personal and social well-being of ethnic Ewe peoples along the Togolese coast. *Atike* refers to the plant medicines used by bokonosofos that possess both pharmaceutical properties and spiritual significance for religious practitioners. *Atike* connotes an amalgam of physical materials (organic and inorganic), ritual behaviors, and spiritual symbols that "treat the whole life-text of an individual, with no teasing apart of the body from the mind or from the numerous souls that make up an individual in all his or her overlapping with totemic plants, animals, deities, and ancestors" (Rosenthal 1998, 41-2). Embodying a more inclusive conceptualization of medicine as understood purely from a pharmacological perspective, *Atikevodu* represents sets of ritual practices and *materia medica*. It is multimodal and multi-vocal, allowing practitioners to engage in therapeutic pluralism by readily borrowing from diverse and disparate sources.

Gorovodu established itself as a powerful healing complex in the region by the mid 1900's. It came to Gbedala village through a man named Bisi. Born in Ghana in 1948 and raised Catholic, Bisi became a vodu bokonosofos in 1972. Today he serves the community in the multi-faceted roles of psychologist, priest, doctor, and judge. He is the principal healer of the community and will often apprentice young men aspiring to be healers too. Throughout his career he has garnered tremendous respect as a powerful priest, able to communicate and negotiate effectively with the gods and defend against witchcraft. He frequently travels to the interior in search of new medicines and medical knowledge, which has given him the opportunity to dialogue with medicine experts in other cultures. He possesses several books on Chinese medicine and uses Taoist geomancy to construct talismans for protection and good fortune. He also carries a deep respect for Ayurveda medicine. "Indians have the strongest witchcraft on the planet," he would say when the topic arose. This eclecticism is what makes him a strong and credible healer in the eyes of community members. This cultural willingness to accept foreign ideas and use them alongside traditional ideas is not unique to Bisi but is evident in Ewe pantheism that borrows freely from external sources.

Bokonosofofos act as doctors, diviners, herbalists, psychologists, and community leaders. Some specialize in one or several facets or have greater reputations in one role or another. To become a bokonosofos, typically one is called via revelation,

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either through possession-trance, a dream, or an illness. One is then initiated and apprentices with a senior bokonosofa for many years. One must learn rituals and sacred knowledge that could fill thousands of pages of written text and also accumulate enough experience to interpret the will of the gods, the

hearts and minds of community members, and how to diagnose and treat a wide range of suffering. The measure of a bokonosofa is the extent of his or her command over the diverse pharmacopeia and ritual used in healing. To answer such questions as what plants to use, what dosage, frequency and dura-

Table 1: Plant medicines used to allay physical and psychological afflictions

Ailment	Local Plant Name	Latin Name	Preparation and Administration	Pharmacological Properties (Busia 2007; Gafner et al 1996; Ghasi et al 2011; Koudouvo et al 2011; Neuwinger 2000; Oliver-Bever 1986)
Asthma	<i>Adifiehotsui</i> <i>Gbato</i> <i>Fanuglo</i>	<i>Paulinnia pinnata</i> <i>Lagerstroemia speciosa</i>	The leaves of all ingredients are boiled together and drunk as tea.	<i>Adifiehotsui</i> : known to treat asthma and cough among other ailments; hemostatic <i>Fanuglo</i> : 20g of leaves equates to 7g of insulin
Birth Control (women)	<i>Kponkeki</i>	<i>Pergularia daemia</i>	Roots are crushed and mixed with local beer and drunk often	Antimalarial properties; anthelmintic, emmenagogic
Constipation	<i>Tchakpa</i>		Root is boiled in coconut water and drunk hot	
Diarrhea	<i>Ayetsi</i>		Leaves are boiled and drunk hot.	
Fever	<i>Evoyi</i>	<i>Hoslundia opposita</i>	Leaves are boiled together and then mixed with sugar cane juice and drunk.	Analgesic, antipyretic, anti-inflammatory, antimalarial
Heart Disease/ Hypertension	<i>Atifla</i> <i>Atakui</i>	<i>Bryophyllum pinnatum</i> <i>Aframomum melegueta</i>	The leaves of <i>atifla</i> and the seeds of <i>atakui</i> are crushed together and eaten with warm water.	<i>Atifla</i> : hypotensive; reduces fever <i>Atakui</i> : antifungal, antimicrobial, haemostatic
Stomach ache (1)	<i>Anyoto</i>		Leaves are squeezed into water and dropped directly into the eyes.	
Stomach ache (2)	<i>Bantsi</i>	<i>Manihot esculenta</i>	Leaves are boiled and the tonic is drunk or a sponge is soaked and held against the abdomen of the patient.	Treats burns and ulcers
Stomach ache (3) Cough	<i>Gboti</i>	<i>Vernonia amygdalina</i>	For stomachache, the leaves are stewed in liquor and drunk. For cough the leaves are chewed. The juice is swallowed and the leaf cud spit out.	Analgesic, antibacterial; antipyretic, expectorant, laxative
Cataracts	<i>Gonja</i>	<i>Cannabis sativa</i>	Leaves are boiled and drunk as a tea or water is cooled and dropped directly in the eyes.	Anti-inflammatory, sedative, antibacterial
Cleanse/Wash	<i>Kpatima</i> <i>Kukotsi</i> <i>amagba</i>	<i>Neubouldia laevis</i> <i>Heliotropium indicum</i>	Leaves of both plants are crushed together in water, which is used to bathe	Both herbs possess strong antibacterial and antifungal properties
Night Terrors/ Chronic Fear	<i>Voyi</i>		Leaves are squeezed into water and drunk three times daily or, with children, bathed three times daily	
Psychological ailments (<i>adava</i>) (1)	<i>Dodemak-powea</i>	<i>Rauwolfia vomitoria</i>	The root is peeled and ground then mixed with hot water for the patient to drink.	Hypotensive, sedative, used extensively to treat psychoses
Psychological ailments (<i>adava</i>) (2)	<i>Nyonoublaka</i>	<i>Lippia multiflora</i>	Leaves are juiced and mixed with a few drops of any variety of perfume. The liquid mixture is then administered nasally.	Hypotensive, tranquilizing; treats malaria

tion, and to determine route change for each patient, the bokonosofa draws upon experience and accumulated knowledge. This knowledge may be passed from father to son, from priest to assistant priest, or given to the priest-healer directly by the gods through dreams or possession-trance. There is more to this knowledge than manipulating and combining different plants to allay different forms of suffering. Ritual, secret names, the manipulation of spatial and temporal symbols, and so on must be combined to make the plants efficacious (Friedson 2009). To understand the breadth and depth of this pharmacopeia is a lifelong endeavor and, according to Bisi, few from the younger generation have the money or patience for the training.

Plant medicines are acquired from a variety of sources that may be reduced to two categories: inside and outside the village. Outside the village, medicines are purchased at markets or exchanged as gifts between bokonosofa from different, often distant, communities. Inside the village, medicines are cultivated in the Sacred Forest or in a garden adjacent to the shrine. The Sacred Forest (zogbe) is an enclosed grove in the center of the community that culturally represents the wild northern savanna. From here the gods originated. From here the enslaved were brought long ago and sold to Europeans or kept for local use. Here, those who died particularly sudden or violent deaths are buried so their ghosts will not haunt the living. Here resides the warrior god, Banguele, and other “hot” vodu and plant medi-

cines cultivated here are imbued with the efficacious power of these forces.

Medicine is delivered to the patient using a diversity of methods. Plant parts may be boiled together as a tea, infused into a hot bath, applied nasally or orally, or applied topically (see Tables 1 and 2). The most effective medicine is black powder medicine, also called “atike.” Black powder medicine is employed throughout Africa to treat an array of physical and spiritual illnesses. Most often used to alleviate suffering stemming from socio-supernatural causes (Table 2), it is also used alongside incantations and other formulae to create protective charms and amulets. To create specific powders that cure specific ailments, plants are and dried then ground with other additives (e.g., animal parts, gunpowder, sulfur) and roasted to a powder. The powder is stored in glass bottles in the shrine behind the fetish houses. When administered, it may be sniffed, swallowed, or mixed with a beverage such as alcohol and drunk but most often, atike black powder is administered by breaking the skin with a razor to create an open incision. The black powder is then rubbed into the fresh cut, and goes directly into the blood stream, a common way to deliver medicine to the body in a context devoid of needles and serums.

Table 2: Plant-medicines used to manipulate the socio-supernatural

Detection of Spiritual Sickness	<i>Adoufanti</i>		The leaves are juiced and mixed with water for the patient to bathe. While bathing, the patient should begin confessing/discussing in detail their symptoms or sufferings.	
Vexation (Disturbances by Ghosts)	<i>Guma Akokomakpa</i>	<i>Datura metel</i>	The leaves are boiled together for the patient to bathe. Or, the two may be crushed together and roasted into a black powder. The patient rubs the dry mixture together in their hands when sensing disturbance.	Guma: narcotic, intoxicant
Disturbances from Witches	<i>Adelawuvinam Evi Akata</i>	<i>Cola nitida Xylopi aethiopi-ca</i>	The Kola nut is crushed and the leaves of the other two plants are all mixed together for the patient to bathe.	Akata: antibiotic, stimulant Evi: caffeinated stimulant
To gain power from Kunde	<i>Goroyi Ata</i>	<i>Cola acuminata Piper guineense</i>	Ingredients are ground together and then roasted until burnt into a black powder. The powder is given to a Kunde adept to be chewed.	Goroyi: stimulant, increases mental fitness Ata: anti-fungal, antimicrobial, used to treat respiratory illnesses Insecticidal, sedative
Protection from strong emotions in others (e.g., jealousy, lust, vengeance)	<i>Babati Exe</i>	<i>Jatropha gossypifolia Zanthoxylum xanthoxyloides</i>	The bark of Exe and the roots of Babati are ground together and roasted into a black powder, mixed with a little water to make a thick paste, and then chewed. Incantations must be recited immediately after swallowing.	Babati: applied to sores and rashes, treats anemia Exe: antimicrobial, antiseptic, anti-infectious properties, known to numb the tongue and lips when chewed

Ritual and Plants

When we posed the question of ritual and diagnosis to Bisi, he weighed his response for a moment.

You may not need much ceremony, but whenever the patient comes they must first go to the shrine and pray for the vodu to give them strength to detect the sickness that is worrying them. Or, the person must secure the protection of the vodu [through prayer and libation] for the vodu to show [via divination or revelatory possession trance] what particular medicine can cure a particular ailment.

Many strategies are employed by priest and patient to diagnose the illness experience. In every diagnosis episode we observed, priest-healers conducted physical exams of the patient. A young man with severe constipation, for example, was made to sit cross-legged while a bokonosofu spent a significant amount of time pressing on his lower back, sides, and lower abdomen, even, pressing his left cheek against the patient's side to better "feel" the source of the ailment. Yet diagnosis almost always includes a ritual component too. It may be done through direct communication with the Gorovodus via spirit possession such as in our example given in the introduction or an ailing individual visits an *Afa* diviner. *Afa* (*Ifa* in Nigeria) is a pantheon of spirits and a geomantic system of divination. *Afa* divinations resemble confessing to a priest and being analyzed by a psychologist simultaneously. Expressing "all that is in the stomach" is a very important aspect of healing in Gorovodu (Rosenthal 1998). As members of a confessional religion, adepts espouse soured social relations, strong emotions such as jealousy or vengeance, or personal failings directly to the gods. Once the physical and socio-spiritual sources are known, medicines are deployed for treatment.

Etiology stems from both physical and spiritual realms and plant medicines act upon both these realms as they are viewed as possessing physical and spiritual properties. For the Ewe, social relationships generate being and existence so illness and disease are causal and derive largely from socialized agency. This agency may be other (e.g., sorcery, jealousy) or one's own (e.g., disobeying ritual norms, moral failing, breaking Gorovodu law).³ There are no fixed relationships between illnesses and symptoms; both may be the result of singular or multiple etiologies. For example, a bout of hysteria may be viewed as the result of anxiety and from a deeply held jealousy over a rival's success or joy over their failure. If the etiology is a moral failure on the part of the Gorovodu adept, then accepting one's punishment-illness with humility and regret is an important aspect of the healing process. Once these psychological, moral, and physical origins of the illness are known, one must confess and make amends. The healer may then work with the medicines and gods to better the patient.

Plant medicines are often viewed as treating the symptoms or immediate suffering of the patient, while social healing confronts the underlying root causes of why that particular individual is ill with that particular ailment at that particular time. Both correlate to illness etiology. The physical and psychological suf-

ferings represented in Table 1 are treated through the direct application of medicinal plants with little ritual involved in direct treatment (though ritual is almost always involved in diagnosis and prognosis). In Table 2, prescriptions represent an intensified engagement with the realm of the supernatural. According to the pharmacological literature presented at the far right of the table, many materials are stimulants (*Guma*, *Akata*, *Evi*, and *Goroyi*) and ritual symbolism is frequently deployed. Ritual is necessary and almost always accompanies treatment, yet the relation between ritual and plants varies according to the specific healer, patient, and overall circumstances. A bout of fever may be treated with herbs and extensive divination over the course of several days, while treating a vexation (haunting) may be a brief one-time visit to the bokonosofu with little diagnosis or ritual. The bokonosofu will decide, after consultation with the gods, how the prescription will be deployed and how the experience of healing will proceed.

Discussion

We are not searching for a thorough scientific rationality for Gorovodu healing nor are we relying solely on the symbolic power of spirituality. Doing so constructs dualisms that are not recognized in Ewe Gorovodu communities. Instead we religiously contextualize known botanical or biochemical properties of plants utilized in Gorovodu healing since both ritual and chemical properties of plant medicines are part of the healing toolkit of bokonosofos. Plant medicines are materials utilized by knowledgeable individuals to enact healing; but one cannot ignore the power of culture. Plant medicines and gods act in unison to heal the sick and defend against malevolencies. Medicine is power (*nuse*) that is channeled through plants and like any power, it may be harmful or healing according to the ambivalence of both nature and spirit world from whence power is drawn (see Bierlich 1999, 318). Gods, medicines, and healing are not indifferent to morality and justice. The pharmaceutical properties that alleviate suffering are not distinct or neutral from the gods, patient, healer, or community. Illness is not distinct from misfortune, divine punishment, sin, or psychic malevolence. Its inclusivity and emphasis on physical-socio-spiritual harmony serves adherents in a context of economic marginalization. In such a context jealousy, envy, and greed are socially disruptive and lead to social disorder. Hence, *atikevodu* is best viewed less as a system of healing and more as a system of social well-being that includes physical healing.

Prescriptions by priest-healers given in Tables 1 and 2 represent cultural texts in which sacred-scientific knowledge and praxis are encoded. Orally conveyed from healer to healer, texts guide healing events. They include specific botanical formulations and ritual instructions revealing the natural power and the cultural power of medicinal plants that combine to produce a healing order. Prescriptions are contextualized in Ewe Gorovodu society yet do not determine the practices of patients and healers. Priest-healers do not administer medicine through a structured repertoire of determined behaviors. Rather, healing strategies are generated through the interpretation of the suf-

fering by patient and priest. The physical body, biological pathogen, and suffering experience (individual and communal) belong to a social field generated through social relationships. There are no exact prescriptions for any ailment since each patient is approached as a unique case and each treatment is modified according to an enormous variety of social factors. Resultantly, there is a singularity and similitude of each healing event where each is unique and a thematic variant of all others. Though physical symptoms may be standardized, the different emotional or psychological positions of different individuals are considered by each bokonosofa in diagnosis and treatment.

Bokonosofa are the human agency that destabilizes boundaries between sacred and profane, material and non-material. Nothing may be gained from building studies upon such boundaries. When the focus is too great upon metaphor and symbol, as often in anthropology, the implication is that herbalism in Africa is only efficacious in that particular cultural context (as opposed to the imagined cosmopolitanism of biomedicine). Ethno-pharmacology is proving otherwise but at the expense of the socio-cultural components that contextualize the practices of healing and thus eliminate from their studies the power of culture. Both approaches reinforce the dualisms inherent to Western philosophical thought. We conclude by arguing that bridging disciplines and escaping these dualisms can be best accomplished through a more intense engagement with priest-healers such as bokonosofa Bisi. Following their lead by destabilizing our own disciplinary boundaries could have significant public health implications and is crucial for applied scientists, policy makers, public health officials, and non-governmental actors working on health and healing in Africa.

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Notes

¹ Authors Statements and Acknowledgements

² Other indigenous medicine systems (i.e., Chinese and Ayurveda medicine) have gained this widespread acceptance (World Health Organization 2002, 1) due to their organizational strength and basis upon written knowledge and theory (Fabricant and Farnsworth 2001, 70).

³ Witchcraft and sorcery are important sources of illness and disease but will not be emphasized here given their over-emphasis in other studies. Plant medicines are viewed as possessing physical and spiritual properties and thus are able to physically and psychically combat witchcraft and sorcery (Table 2).

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COMMENTARY

THE LIVES OF A TABLE

HOWARD F. STEIN

What follows is a corporate story, but first a short poem.

The Corporate Table

Massive as an Arizona butte,
the oak table rests upon
a solid oak pedestal.
Once the scene of
clandestine meetings,
the CEO's scathing rebukes,
million-dollar transactions,
it witnessed glory
and ignoble defeat.
A few years later,
it became a good surface
for lunch and coffee mugs.
Its dense wood is inert,
but if it could speak,
what stories it could tell!

The Lives of a Table

When he ushered me into his lavish office, the first thing that I noticed was the table at which we were to sit. I had been a long-time consultant for United Garments (UG), a successful clothing manufacturer. Today's meeting was my first with the new CEO, Tony Anderson. I was eager to meet him and discuss my role as a consultant with the company. He pointed to where I should sit at the table, and he sat in "his" chair across from me.

The table was placed in front of his large, wide desk. For some reason, much of the time I could not take my eyes off the table. It was a huge and massive square presence, probably solid oak, held up by an equally massive, ornate pedestal. It was uniformly a light tan, with rounded edges (bullnose), perfectly smooth and highly lacquered. It was perhaps four foot square. To me it was beautiful and terrifying. I didn't know why, but I made a mental note of my feeling. The table commanded the room, as Tony commanded the corporation. During the hour-long meeting, he described his new vision for UG and his management style, and how he envisioned my role. Throughout our meeting, I thought as much about the table as I did about him.

About five months earlier, the corporate board of trustees had brought Tony in from his post as CEO of a large construction firm. He was brought in laterally, so to speak. He didn't know much about clothing manufacturing, but he was a whiz with Excel spreadsheets and calling the shots based on what

he saw in "the books." He had turned around the construction company, and was seen as a visionary who could "make things happen." The trustees and upper management had great hopes that Tony could raise UG from the doldrums. In my mind, as Tony talked, the table grew bigger.

From the picture I was able to put together from many others' descriptions before my meeting, Tony was a command-and-control type of leader. He spoke, you listened, and you carried out his orders. Everything was top-down. Others characterized Tony as mean-spirited: if he didn't like you or how you were working, he readily dressed you down and chewed you out sometimes publicly humiliating you. This behavior held as much for management as for staff such as secretaries; many had been seen leaving his office in tears, fearing for their jobs. Despite the fact that he was at UG only a short time, he had established his leadership style with a red hot branding iron. He ruled by fear, if not terror, "My way, or the highway," so to speak. As I sat there, I began to imagine the table as a weapons platform, certainly not a mere surface on which to do work.

I wanted to get a sense of Tony for myself. He loved to tell stories – about himself and his achievements and triumphs, if not conquests. For him, winning the competitive battle with other companies, and cornering the market, were what leadership of UG was all about. His language was steeped in football and warfare. Many employees saw Tony as a visionary who flew high above them, traveling all over the world to make deals and create alliances that would make UG excel. The rest of the people saw themselves as the worker bees, the "grunts," who did the day-to-day work "on the ground." They didn't understand his ways; they were simply there to carry them out, to bring UG to the forefront of the industry, to "make it happen" and make him look good. He was the one to make promises; it was their role to carry them out. At times they basked in his glory. The table seemed to embody Tony's grandiosity.

As time went on, I saw that the honeymoon with the board of trustees, shareholders, and upper management lasted about two years. Tony's halo began to fade. UG had not "turned around" as everyone had expected. The magician had failed to work his magic. Symbolically, perhaps, the table's size and mass had crushed the life out of the organization. Sometime in the third year he was summoned to secret meetings with the board, and suddenly he was no longer there. He disappeared. No one knew what happened. He was just no longer there. The employees were told nothing except

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The Lives of a Table...

that Tony left UG. The company was looking for a new CEO, and the Senior Vice President stepped in as the temporary leader.

The table stayed, and took on a bizarre history of its own. For a while, when I did my consulting work, I could not find the table. Tony's former office was off limits to everyone, so I didn't know whether it still was in there and was being used by the Executive Vice President. Then, mysteriously in about a year I found it used by the Information Technology unit as a surface on which to put used computers and computer components. It sat amidst what looked like a junkyard of computers, monitors, wires, and other parts. In short, it was put in the computer graveyard. In my mind, the table, once the site of terror and grandeur, had been radically demoted and junked, kicked to the curb like Tony. It now was only good for garbage, so to speak.

A couple of years later, it showed up in one of the company lunchrooms, as the table for employees to sit around and have lunch or coffee, or informal meetings. The command and control center had now become a place for safe and peaceful lunch gatherings. The transformed, even transmuted, imperial table had become an inviting surface for everyone around it. The resplendent, lacquered surface was now scratched and had regular spills of coffee and tea and food, as well as rings from cold beverage cans. At one point I had actually forgotten what the surface of the table looked like, and was certain that it had inlaid wood – which, so I fantasized, would enhance its grandeur and with that power. When I actually saw it, I was surprised, even a little disappointed, to find out that the surface consisted of the same light tan oak as the rest of the table and pedestal. My fantasy made the demotion even steeper.

No one spoke of the table. Rather, its placement and function(s) and meaning simply and radically changed. The table had metaphorically taken a beating, much as had the employees during Tony's short-lived reign. Perhaps the employees took satisfaction at the table's low rank, if they knew of its former history. Even I took pleasure in seeing the table abused much in the same way as Tony had treated everyone else. Sometimes I could even bring myself to imagine that the table deserved its mistreatment. (At times, displaced aggression feels like a wonderful thing.)

In sum, then, historically, the table served successively as an instrument of power, as a place for corporate strategizing, then as a piece of junk in the computer junkyard, and finally as an inviting host for lunch and coffee gatherings. Sometimes a table is just a table, an artifact of instrumental, material culture. Alternately, sometimes a table is a symbol, a metaphor of expressive culture. And sometimes its meaning and function change over time. Tables have many lives.

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