THE NAVAJO: A HISTORY OF CONTINUED ADAPTATION AND SURVIVAL THROUGH THE ARRVIAL OF THE URANIUM MINING INDUSTRY

By
Jessica LeAnn Ferguson

Senior Seminar History 499
Professor Max Geier
Western Oregon University
June 2, 2004

Readers:
Dr. Max Geier
Dr. Kimberly Jensen

Introduction

Charles W. Luckmann went to the Navajo reservation to teach English at Rock Point Community School in Flagstaff, Arizona. One of his classes began with a discussion of the origins of the Navajo language. From the books he had read and from the other works of linguists that he had studied Luckmann learned that, similar to other Native American tribes, early Navajo ancestors had come over a land bridge crossing from Asia.[1] This gradual journey took thousands of years. They left Mongolia 7,000 years ago, made it into North America 5,000 years ago and continued the journey through western Canada 3,500 years ago. Somewhere between 3,500 years ago and 1600 A.D., 500- 1500 hunters and gatherers left the larger cultural centers and migrated into the Four Corners (Arizona, Colorado, New Mexico and Utah) area.[2]

Luckmann soon learned however, that the community elders on the school board had a different opinion about their history. The principal informed Luckmann what the Navajo people believed to be true: They were a people whose ancestors had been brought to this land from the worlds below by their gods during the time of their creation[3]. This was the land they had been created from, not migrated to. It was on this land that they were molded into Diné, the Navajo people.

The Navajo believe that the land where they were created is the land where they continue living to this day. They have survived almost 600 years of outside cultural influence and attacks on their lives and their cultural identity as Navajo, but in the 1940s the United States identified the Navajo homeland as a national resource and launched one of the strongest cultural assaults on the Navajo that their people had ever confronted.

There has been uranium mining in the Four Corners area since 1900,[4] but it was not until the big uranium boom of the era of World War II and the Cold War that the demand for uranium was great enough to prompt large-scale mining in that era. President Harry S. Truman signed the Atomic Energy Act in 1946, which created the Atomic Energy Commission (AEC). This commission created and oversaw uses for atomic energy, either in the military or for more peaceful uses.[5] It also managed nuclear weapons and waste-by-products.

The United States Government, through the AEC, opened uranium mines in the Navajo Nation and remained the sole purchaser of uranium from the late 1940s though the early 1960s.[6]

Figure 1 Navajo uranium miners near Cameron, Arizona. Fronske Studio Collection, Cline Library, Northern Arizona University, Flagstaff. Neg. no. NAU.PH.85.3.94.188 Found in: Iverson, Peter *Diné : A History of the Navajos* (Albuquerque: University of New Mexico Press, 2002) p.220

Uranium was supposed to be the world's next big energy source, burning cleaner and with higher energy output than coal. The arms race with the Soviet Union also pushed the need to stockpile already developed nuclear weapons and led to an investigation into new designs for nuclear power.[7]

From the 1940s-1960s, the Navajo were inundated with American culture. On a smaller scale, that still continues to this day. Was it possible for the Navajo community to maintain a tradition of adapting aspects of other cultures into their own to survive while still maintaining what it was to be a Navajo, or did the introduction of the uranium mining industry and the corresponding inroads of American culture require a change that sped up the complete assimilation of the Navajo people?

The Navajo Nation is a race of strong and proud people. Their ancestors were able to carve a life out for themselves in one of the harshest environments in North America: the deserts of the southwest. Believing that the Gods of their ancestors had placed them on the holy ground between the sacred mountains they could imagine no other place as their home. The Navajo have faced more than just a harsh climate. Thought-out their history, there have been people from outside he Navajo world who have tried to crack or even destroy what they have built for themselves on this harsh land. This references not just the attempts to take their land away from them, but other attacks on their culture and who they are as a people. The United States government and its citizens have been among the strongest opponents of the Navajo. Sometimes, in the past, U.S. policy demanded they sacrifice their culture so they could learn to have a place in the modern world. Missionaries thought this was the most humane method of actions, while others like Colonel "Kit" Carson did it mainly to get rid of "outdated" culture that was in the way of

American expansion to the West.[8] Despite all the obstacles the Navajo have faced though time, they continue as a people. They chose not to sacrifice who they were, but instead adapted elements from outside their culture to save and protect who they really were.

In the 1940s, the Navajo met their biggest challenge the arrival of the uranium mining industry. Up until that point, only a small number of people had infiltrated the reservation borders from the outside, not including the Pueblo Indian peoples who came to the area seeking refuge from the Spanish.[9] With the discovery of a large supply of uranium in 1943, a tidal wave of white people, American culture, and western industry flowed onto the reservation, unlike anything the Navajo had previously seen. How could the Navajo sustain their culture while inundated with these new challenges? They were impacted through all that they held most dear.

Navajo people have a long history that is filled with their experiences of interactions with other people and cultures. These interactions could have meant the end of the Navajo people and their way of life, but it did not. Even their creation myths tell the stories of the Navajo ancestors' and their interaction with the creatures and beings they met in each world. While sometimes dangerous, these interactions led to the Navajo being able to move on to each, progressively higher world.

The Navajo believe their ancestors were not created in the world they now know. Their ancestors were from a world four worlds below this one, known as the "Black World".[10] This is where the Navajo start their long history of conflict and interaction with cultures outside their own. In this First World, there were insect beings. After attempting to live in peace and friendship with these beings, conflicts arose and the Navajo were forced to move through the sky on to the Second World (the Blue World).[11] In the Blue

World, there were other beings, including some insects and some swallows. Having sent out couriers who found that there was no one like them to the east and the west the ancestors, like the insects, asked to live in friendship with the swallows. But after a short time, more conflicts arose between the Navajo and the beings they had tried to live amongst.[12] In addition, they discovered that there was no way for them to survive on the land. This encouraged the ancestors to pass through a hole in the sky into the next world.[13]

The Third, or Yellow World, was the place of the Grasshopper People.[14] As in the worlds before, the ancestors sent couriers who found no one else in the Yellow world. The Navajo then asked the Grasshopper people if they could join them and be friends. It took 23 days for conflict to arise, and the ancestors were once again forced by the mischievous coyote and rising flood water to flee through the sky.[15] Through this hole they came into the Fourth World, or Glittering World, in which they found the six sacred mountains.[16] These mountains surround their land today: in the east (Blanca Peak or Sis Naajini), the south (Mount Taylor or Tsoodzit), the west (San Francisco Peaks or Dook'o'ooshííd), the north (Mount Hesperus or Dibe Nitsaa), the center (Huerfano Mountain or Dzil Na'oodilii), and the east of center (Gobernador Knob or Ch'ool'í'í).[17] The Fourth World was not always the Glittering World, it only received its name when the evil (*hochxo*) had been destroyed and the Fourth world was restored to its "glittering" and beautiful nature (*hozho*).[18]

There are a couple of different variations of this myth, which is not uncommon in a culture with a strong oral tradition, but there are certain elements that they all have in common. One is the conflict faced by the ancestors of the Navajo. In every world, they

came in contact with a different group of beings, each one of them completely different from the other. But to survive and live in these new worlds, friendships and kinship bonds were developed between the ancestors and the other beings. But the ways of the different communities living together inevitably caused conflict and strife until the ancestors were told to move on. Conflict is definitely not something that was a stranger to the Navajo people of ancient days, in their recent history, or even of Navajo people today. In this myth, there is foreshadowing that the Navajo have seen conflict with other cultures in the past and will continue to have problems with them in the future. Conflict did not stop them from building bonds with the beings they next contacted, but in order to make a life on the land where they were, they continued to build those existing relationships.

Those relationships might have been seen as the key to Navajo survival. At each level, they were not only new to the country, but they were actually living in worlds they had never seen before. They needed the information and knowledge of each new place from the beings who knew it better than they did, and hopefully, by bonding with each new group of beings they encountered, they would have a greater chance of survival. There would be no way to leave each new group of beings without taking a little bit of what they had learned with them. From each world, a few of the people from the world before came along with the Navajo ancestors into the next world. This creation myth indicates the first representations of the Navajo's use of adaptation to survive. Bonding with and taking some of those characteristics of another culture led their ancestors, in this myth, to be able to survive and continue into the next world.

It is important to note that in this myth the Navajo ancestors did not become the people with whom they lived or bonded. They did not forget who they were, nor did they totally assimilate and become absorbed into the Swallows or Grasshopper people, but they took what they needed from the culture they came in contact with and made it their own in order to survive. It took a movement from each of those levels to make them the people they were when they got to the Fourth World and to face the challenges needed to turn it into the Glittering World. This concept of adaptation is central to this paper. Adaptation is the process or state of changing to fit new circumstances or conditions, or the resulting change. [19] I intend to use this term to mean, however, the adopting of certain new methods of culture and society from other cultures through previous contact in order to preserve the primary culture as a whole.

An Outlook on the Navajo Populations and History

Some of the first numbers of the Navajo population were taken back in 1750, by the Spanish, who were the first Europeans to have any contact with them. At that time there were 6,000 to 8,000 Navajo speakers, by 1830 the numbers more than doubled to 20,000.[20] These 20,000 were spread out in extended-family groupings of 20-70 people.[21] The creators of the U.S. Census in the early twentieth century did not indicate specific numbers for the members of the Navajo tribe. There is information provided on the numbers of "Indians" living in the state of Arizona. The numbers indicated for the state of Arizona, which holds the majority of the Navajo reservation, can give approximate numbers of what the Navajo tribe would have looked like at that time. In 1890, there was 29,981 Indians living in the state of Arizona. There was a steady increase of the Indian population throughout the next 50 years, with the exception of those counted in 1900. In

1900 the national census counted 26,480 Indians; 29,201 in 1910; 32,989 in 1920; 43,726 in 1930; 55,076 in 1940; and 65,761 in 1950. In 1960, the rural areas of Arizona, including the Navajo reservation, accounted for 75,087 of the total 83,387 Indians in the state. [22] By looking at the Indians just living in rural areas, it can give a clearer picture of how many Navajo there would have been living on the rural reservation.

The counties that include the Navajo reservation, Apache, Coconino and Navajo county, are used to gain a closer estimate to the actual number of Navajo living on the reservation in 1970. In those three counties the total number of people of Indian background was 56,044.[23] Not until the government census of 1980, did a count of the population of the Navajo reservation itself exist. The reservation held 104,968 American Indians at that time. Roughly half of those people were male (50,940) while the females made up the other 54,028. Only .05 percent of the population was 65 years or older. The census counted 13,983 legally married Navajo as well as 4,822 female headed households with no husband present. [24] The United States census done in 2000 listed a total Navajo population of 275,775. There were a total of 73,230 households, and 10,148 of those had one or more non-relatives living in the household. Female headed households with no husband present totaled 18, 921. Of these female-led households, 68 percent of these female-led households were headed by a woman between the ages of 25 and 54. [25]

Out of the 1500 uranium miners working from 1946 to 1948, over half passed away from radiation-related cancer and respiratory diseases. [26] While the specific numbers of affected Navajo are not available one can estimate its possible outcomes. From the data provided above it can be estimated that at least 750 men a year have been affected. If these numbers are combined for the three decades that the industry was

pertinent to the reservation al low estimate would be 18000 men. Accounting for the family and community members who were in close contact with these miners and there therefore, likely contaminated as well, the total number of Navajo exposed to heavy doses of radioactive contamination would easily exceed10 percent of the total Navajo population.

Throughout the centuries the Navajo people have continued to grow, even through all the tribulations that threatened their people and their culture. A tradition of adaptation has been a steadfast trait throughout the history of the Navajo. After the hundreds of years that the Navajo have lived in the southwest it is not very hard to reason that they could have picked up some traits from their neighbors. Some of their ceremonies and traditions, including clay pot making and basket weaving are greatly influenced by the native Pueblo (Hopi) people that took refuge with them in the 1700s from the Spanish. Anthropologist David Brugge observes the Navajo's traditional ways originate with their original ancestry from Northern Athapaskan culture, and more from their borrowing and adapting knowledge from other people into their culture until they considered it "traditional".[27]

It is often thought that the raising of sheep, horses and other animals are "traditional" ways of the Navajo, but the Navajo had not been introduced to these animals until Spain brought them to North America. Never, in stories of their oral tradition, however, did the Navajo accredit the Spanish for introducing these important animals. It was always Changing Woman or some other God who did so. Often, an assimilated group has no voice in determining how assimilated they want to become, but in the case of the Navajo, their reputation was strong enough and their location isolated enough that

they had the advantage of only choosing what they wanted to take from the Spaniards. [28] By giving credit to their own gods for these things they adapted into their culture they made them is no longer Spanish, but their own.

The Navajo had their continued existence tested to almost the point of total elimination during a horrendous forced march from their traditional lands east and south to Fort Summer starting in August 1863 and continuing through the end of 1866.[29] The U.S. Army located Fort Defiance right in the middle of prime Navajo grazing land. The Navajo strongly resisted with efforts to shut down the fort. Colonel Christopher "Kit" Carson was assigned to take care of the problem. In 1863, Carson began a scorched-earth policy, similar to those used during the Civil War. Carson's men burned everything around, including homes and two million bushels of corn,[30] so that there would be nowhere for the Navajo to hide. The Navajo that survived were then marched over desolate lands and in the worst of conditions to Fort Summer, New Mexico. It was the kind of journey, long and over tough terrain, which would have been hard for even a young man in good health. But for the elderly, the sick, disabled, very young, and pregnant it was essentially murder. Luci Tapahonso tells of the experiences that her aunt told her: "Some of the old people fell behind and they wouldn't let us go back and help them." While others fell behind some were dragged under the Rio Grande: "Some babies, children and some other older men and women were swept away by the river current. We must never forget their screams and the last we saw of them--- hands, a leg, strands of hair floating."[31] They were moved to Fort Summer to hopefully learn some more civilized ways, find a Christian God, and further continue their assimilation.

The Navajo were able to survive a 25-percent loss of population and a total relocation, and still return home in June 1868 to survive in the land between the sacred mountains to continue being who they were.[32] One would like to think these strong-willed people could survive anything, but the infiltration of the Navajo by the independently and government-run uranium industries brought trouble to their front doors. This time they could not just leave it behind and go home.

English speaking is also a major adaptation to the traditional Navajo culture. Without knowledge of it, it would be impossible to interact with the American world outside the reservation and to become a success in that world. Not only for their children's sake, but also for the Navajo community it was necessary to be able to speak for and understand the tribe in interactions with the United States. They needed someone to be able to read the American treaties and rules they would have to follow. Navajo purposely sent their children to western-style schools where they learned the English language and western knowledge. The Navajo, however, brought these western schools onto the reservation, so their children would not have to be sent to schools out side of the community. The first of these schools opened at Fort Defiance in 1885. [33] In this way, tribal leaders could control what was taught. As a result, western-style school systems were adapted further and further under the umbrella of the traditional Navajo community. These are just a few examples of how the Navajo people adapted outside traits to further the goal of remaining Navajo.

Some of the greatest examples of this power of selective adaptation are with the Navajo's interaction with the people of the United States Government and its citizens. One of the first examples of adaptation was the use of the treaty--a formal document to

conduct business or agreements with the United States. Other examples include the development of the first written Navajo language. Originally, Navajo was never written down; it was a culture with a strong oral history. It was not until fairly late in the era of U.S. influence that the Navajo first attempted to develop a written language. In 1930, the head of the Bureau of Indian Affairs decided that the Navajo needed an alphabet and commissioned a formal development. It was not even popular at first, but now it has been embraced as a true part of the Navajo language.[34] They as a people knew that they could keep their traditional oral history, but would also need a written language to continue in the newly developing reality around them. It was a compromise, instead of being forced to completely adopt spoken and written English they were able to have written Navajo.

The more dominant the outside culture became the more it infiltrated into what was considered traditional in the eyes of the next generation of the Navajo. The uranium mining industry, however, was more sudden. Rather than slowly penetrating from outside the reservation, it was a massive attack at the heart of their landscape. One could see this infiltration as a speed up in the adaptation process. Potentially, it could have sapped the life of the Navajo culture. But the Navajo had persistently resisted heavy attacks from outside their culture.

Unlike the Trail of Tears or smaller missionary attempts at assimilation, the uranium industry was not something that could be walked away from or ignored. It has embedded itself or affected nearly every important aspect of Navajo culture. To be specific, it affected Navajo land, health, and families, each a cornerstone of Navajo cultural beliefs and methods of life. The industry dug massive craters and "dog holes", (small mines just big enough for one man), and it contaminated large parts of the land.

Radiation from these mines seriously affected the health and well being of people and animals that worked or lived in or around them. Over the years, the lasting affects of the uranium mining industry strained or broke the strong family bonds that make up a Navajo home.

The Navajo of the Four Corners area have a cultural belief that the world works in balances, right and wrong, hot and cold, etc. Nature was an organizational device, fusing natural, supernatural, and human or social elements. The Navajo ideal, *hozho*, embodies harmony and order. All trouble, especially sickness, comes from the disorder.[35] It is nature's way of keeping a balance. The heavy mining, especially of uranium, during the last 50 years, greatly disturbed that harmony. So, in result, nature is acting unpredictably and people are getting sick and dying. Families are breaking up, crops will not grow, and animals are born with deformities. The imbalance on Navajo lands is having an effect on every part of Navajo life, society and community.

Land and Environment

There is not one single place that the Navajo would rather be than on their land surrounded by the sacred mountains. That land was what the Navajo people used to create their very bodies and those of their Gods, its environment shaped who they have become. When they were being held in Fort Summer, the Navajo negotiated where they would permanently reside. Bardoncito, a prominent Navajo leader, declared: "Our grandfathers had no idea of living in any country except our own... When the Navajos were first created four mountains and four rivers were pointed out to us, inside of which we should live, that was to be our country and was given to us by the first woman of the Navajo tribe." When this statement was not enough to sway the U.S. negotiators, he responded, "I hope to God you will not ask me to go to any other country besides my own."[36] The Navajo, he specified, would never be happy and neither would the land, until both were reunited. According to their creation myth the *Dine* or first Navajo came from the skin of Changing Woman. She is made from the earth, so they, in turn were made from the earth that they walk on. Their connection to the earth, is explained by Danny Blackgoat as a forward to the book *Traditional Lifeways on the Reservation*:

> I belong to the earth. The earth is my mother, my provider, and my caretaker. I am her child. She nourishes me from her body and her soul. I belong to the land... I am rooted in my mother earth. I belong to the *Dine*, meaning The People. Our clans live between the four sacred mountains. These mountains protect us. On this land between these mountains we strive for unity and balance. When all is in balance with our Earth Mother, our Sky Father, and The People, then there is *hozho*, or harmony.[37]

This respect for harmony and the land was cast aside, when the uranium mining industry came to the area. There was uranium in the land and it was the U.S. mining

industry, with companies such as United States Vanadium Corporation. Vanadium Corporation and Kerr-McGee, intended to get to it at all costs.[38] Unfortunately, the Navajo were the people who largely paid those costs. When the AEC found large supplies of uranium on their homeland its only concern was the mineral wealth that could be held just below the surface. AEC administration missed the importance of the people and their homes on top. To the mining companies the desert's desolate landscape was perfect. The landscape was sparsely populated and did not produce and valid product or resource that would be missed elsewhere.[39]

Blasting and drilling started in the early 1940s and the landscape was soon scattered with open pit and holes that threatened the Navajo pastoralists. The Abandoned Land Mines Office reported that there were as many as a thousand mines still open in the 1980s.[40] Navajo shepherds faced difficult times. One Navajo woman compared the Navajo connection with sheep to the Plains Indian's connection with Buffalo. The era of uranium mining threatened her sheep generations, because she risked losing a full size cow, horse and/or sheep into one of the open uranium mines. To have one fall in would be to lose it forever. There was also the danger that, one of her children, or another person could fall in, especially in winter, when snows concealed the pits.[41]

Figure 2 Rock Tailing Piles Found in Eichstaedt, Peter H., If You Poison Us (New Mexico: Red Crane Books, 1995)

Uranium mining transformed the Navajo land into something to be feared. There were other, less obvious changes to the land. The uranium industry left tailing piles scattered around the reservation (See Figures 2 & 3). These highly radioactive sands could be scattered about by the wind or soaked into the ground water, contaminating vegetation. Lane Gerald recalls seeing tailing piles on the edge of the Dolores River in Colorado: "I mean tailings were drippin' in it, I mean it was…tailing piles was right on the edge of it, and if we got an extraordinary amount of runoff and stuff, I mean it'd wash into the river."[42]

Figure 3 Sand Tailing Piles Found in Metal of Dishonor, e.d John Catalinotto and Sara Flounders of the Depleted Uranium Project 1994-1996 (New York: New York, 1993)

The people and animals who lived on the reservation depended on that land for water to drink, food to eat, and for their livelihood. When the land changed, so did the environment it supported. Through the plants in their family gardens and in the meat they ate, uranium found its way onto the dinner table in Navajo homes. A person who bathed

in, or had their clothes washed in the contaminated water, or who were covered by the tailing dust blown about in the air, or who even shook hands with the other people who also lived in the community, were exposed. Uranium and radiation exposure was an everyday part of Navajo life in the uranium age.

The people of the Navajo Nation of Arizona and New Mexico remember and live daily with the physical changes, like higher radiation levels in the land. It is one of the first things remarked on in oral interviews. In a herd of cattle owned by the Snow family, for example, noticed signs of damage in their cattle herd after they moved it into some open land next to a uranium mill. Gerald, a friend of the family remembers:

> They were coming out with mutated cows. I've seen a cow with two heads-a calf. I've seen 'em with five legs... their birth weight down... That particular area, we was lucky out of five hundred cows to come up with a hundred calves.

Gerald estimated that six hundred and fifty calves were a normal amount for a herd that size. Plant life around the Navajo community was also affected by mutations. Gerald remembers growing "carrots as big as your arm". Melinda Marquez, a woman who worked in the uranium field, notes that numerous tailing piles left many areas where nothing will grow.[43]

The Uranium industry transformed the Navajo homeland from a place of honor and security, into something that caused insecurity and fear, and a place of harm. Some groups and government agencies, including the Navajo tribal government, attempted to reclaim the land from the damage that mines had caused. Waste piles were covered up with non-radioactive dirt so that vegetation would grow and give them the appearance of being normal. This lowered radiation emissions, but it was not a permanent solution. Uranium has a half-life, the time it takes a radioactive substance to lose half of it

radioactivity, of 4.5 billion years.[44] The land could never really be considered clean for human life. And the new dirt is always at the mercy of the high desert wind. The newly reclaimed piles looked better, but to the local people they were even more dangerous: it was almost impossible to tell the safe areas from the camouflaged radioactive places. Melinda Marquez, a woman who worked in the uranium field discussed this concern with an interviewer:

> Melinda: They're covering it up so that when you cause the exposure, patching it up, once they patch it up they try...but they try to reclaim it by blending into the environment...They bring those dirt over -they cover it- or they'll cover it with gravel. And they try to blend it in and make vegetation re-grow in those areas.
>
> Interviewer: Because they got – you mean on purpose they got dirt that didn't have radiation in it so that vegetation would grow?
>
> Melinda: And then they covered it over the area where they re-claimed
>
> Interviewer: So no one would notice that there was a bald vegetation?
>
> Melinda: Yes. Right.

To Melinda this was an action that just disguised the problem, making it more dangerous, not fixing the problem. Less and less in their lives or community could the Navajo consider "safe", so everything became dangerous[45]. Even the sand filling a child's sandbox could be something to be afraid of if it came from the wrong sand pile.

The changes caused in the land by uranium mining forced Navajo people to view each other differently. People living in mining areas came to be viewed of as different or tainted. Outsiders saw something wrong with the community members and even made jokes about people in uranium industry towns: "How do you find your kids at night? Just look for the glow." Not just the mines or the mill tailings, but the whole community, its

people, its homes, its water, everything became "contaminated" in a real, as well as cultural sense.[46]

The men of the Navajo nation saw an opportunity to adapt on a larger scale to the wage labor industry. Up until the introduction of the uranium mining industry, the Navajo reservation was mainly a rural, farm-and-animal-herding community. If they made any wage income it was from selling of crafts. There had never really been any opportunity for wage labor. The uranium mining industry created large numbers of wage earning jobs, and men jumped at the chance. In testimony from former miners, like Big John, they state that if they had understood the full implications of the effects of uranium mining, especially its health hazards, however, many men would not have participated in the further destruction of the land that they held so sacred.

They even unwittingly brought samples of rock to show mining companies were to dig.[47] One day in 1943, Luke Yazzie, a native of the tribe, led geologists to a small out cropping of rocks near his home. The rocks contained the highest radioactivity of any that had been discovered. That outcropping, twenty miles east of Monument Valley, became a very prosperous uranium mine.[48] Luke's father, Adakai, warned Luke not to show the white men the rocks he had found, as if he knew the dangers Luke's discovery would bring.[49]

How could a people who respected the earth they called mother embrace such an industry? The answer is simple; they did not have a choice. The drilling machines had come; the blasting started; and political deals had already been made by the time anyone in the communities knew they were coming. They showed samples of rock without any idea of the mining operations that would follow. Navajo men found it increasingly

difficult to successfully provide for themselves and their families with the traditional herds due to the government's Stock Reduction Program, which implemented in 1933 a plan to shrink the number of animals in Navajo herds. The "traditional" ways of ranching had led to so many animals that white annalists form the U.S. government felt that the land could not support them and would be over grazed.[50] The men applied for work in order to help support their families. They had no comprehension of the safety problems or environmental impacts to the land that would come from their labor. While many men testify that if they had known of the effects of the industry, they would have not participated, the need to support their families would have outweighed the "unknown possibilities" of the further.

There is a warning in the creation myth about yellow powder, known as "*cledge*" in the Navajo language. The Navajo once had a choice between yellow powder and yellow corn pollen. All the good things about life are found in the corn pollen, so the Navajo chose the corn pollen. The yellow powder was placed under the ground. To bring it out of the ground would mean releasing an "evil serpent into the world to bring evil, death and destruction".[51] The yellow powder in the myth is now interpreted to be a warning about the yellow cake found with uranium. If the Navajo heeded this warning, they may have been a little more careful in their interaction with it.

Health and Traditional Medicine

One of the largest effects that uranium mining had on the Navajo community was its effect on the health of people who come in contact with it. Tailings blew about in the wind, water sources gradually became more and more contaminated, and even the stones used to build their houses were dangerous to their health. As early as 1967, uranium

poisoning started to kill the men who had worked in its mines. Peter Yazzie went to the Indian Health Service Hospital for a gnawing pain on his left side only to find out it was cancer in both lungs. All the doctors could do was give him something for the pain. He died at the early age of 40 leaving a wife and 10 children behind. His wife collected $250 a month from social security after his death to support her family. Other stories follow similar patterns. Billy Johnson worked in the uranium mines for 20 years before he was diagnosed with severe lung cancer. His death on May 21, 1972 left his wife Louise and five children widowed and fatherless. Testimony after testimony documents, the thousands of former miners who suffered devastating health problems due to their work in and around the mines. It is not uncommon to come across a former miner saying that all the men he used to work with are now dead.[52] Timothy Hugh-Benally, director of the Office of Navajo Uranium Workers says, "The people I worked with are now all dead from cancer or other causes"[53] Kellewood Yazzie also said that all the people he worked with are now deceased. Not just coworkers, but their family, friends and community members as well. [54] Gerald observes:

> The mental effects are very hard. I mean for god's sake, I'm only fifty-two years old and I'm and orphan... all of a sudden you wake up one day and you realize that everybody you knew – is dead. I mean, yeah sure, maybe radiation don't kill people, and maybe it'd kill one or two. But for god's sakes everybody that you've known you're entire life? I mean that's a little hard to deal with.[55]

Traditional Navajo medicine was the first hope for a sick Navajo seeking help. But traditional healers did not have the background, skills, or knowledge to handle the sickness caused by the occupational and environmental hazards of uranium mining. Miners and their families tried traditional ceremonies and traditional remedies. Hugh-Benally remembers when miners started to die in the 1950s: "We tried traditional

ceremonies to cure husbands. We tried traditional remedies, and some tried the Native American Church. They gradually went down. They were usually heavy set men and when they died, they were skin and bone."[56] From the early 1950s on, more people got sick and the reliance on traditional medicine continually dropped. The testimonies of the sick miners or their spouses, instead demonstrate a greater reliance on western medicine after the 1950s. [57] One might guess that if it had been a Navajo-created problem, then maybe the Navajo ways would have cured it, but it was a problem that was brought on by U.S. industry, and it therefore required modern medical treatment. This, however, was only partly true.

American popular culture seems to have a way of looking at things as black and white, either one way or the other. In the past and even to this day, some white physicians show up on the reservation believing that their methods are superior to traditional medicine.[58] But this was not true in the case of Navajo traditional medicine. While doctors have spent considerable time, beginning when Fort Defiance was built in 1851 through today, among the Navajo, a level ground of respect developed on both sides. The Water Clan has a medicine woman named Annie Kahn. She is a woman of the twentieth century-- a woman who was trained all her life, even before birth by here parents, to carry on the inherited lineage of the healer. The whole family -- her parents, relatives and especially her grandparents-- taught her about the world around her and the sky above her. While she was being taught the traditional ways of healing by her family, her grandmother (also a medicine woman) sent her to school to learn English.[59]

As part of her healing process, she is in constant pursuit of raising her consciousness, of the plants and land around her. But, as a modern medicine woman, Kahn also works very hard to connect Navajo and English-speaking society.

Figure 4 Annie Kahn: Medicine Woman also known as Flower That Speaks in a Pollen Way. Photo by Bobette Perrone. Found in Perrone, Bodette, H. Henrietta Stockel, and Victoria Krueger *Medicine Women, Curanderas, and Women Doctors*.(Norman and London: University of Oklahoma Press, 1989)

Her grandmother spoke two languages: Navajo, and the language of the spiritual world. Kahn, adapting to the current times, speaks three languages: the two languages of her grandmother, plus English. She sees the adaptations she has to make as a way of bringing all three worlds (Navajo spiritual, Navajo physical and English-speaking) together.

Annie Kahn consults with western doctors to help diagnose patients. She knows that these doctors have access to equipment that are a great help in their treatment. When

someone needs stitches, Kahn sends them to the hospital, because "traditional healers do not stitch."[60] Western doctors also seek traditional help form medicine women and men like Kahn, especially in cases of patients with mental illness, when doctors may have few other options. Basically, when a practitioner of one of the schools of medicine runs out of options, they turn to the other school for help. Both sides work together for the best treatment of the patient. One woman psychologist came all the way from Chicago to seek Kahn's help when other doctors of western medicine were unable to control her headaches with medication. The medical roots that Kahn prescribed were later reported by the psychologist to have alleviated her headaches, both in their frequency and their intensity. Chemical analysis discovered that the roots Kahn prescribed contained ibuprofen, the 1985 wonder drug. With this information the psychologist's physician began prescribing pain relievers containing information.[61] This is one example of the old way and the new way working together. One method did not discount the other, but they worked together.

When traditional medicines failed to help the ailing miners, it seemed natural for Navajos to seek help from western medicine. The traditional healers like Kahn may not have had any effect on the physical illnesses, but they could still perform the ceremonies that the Navajo believed would restore the balance in the world. The uranium mining industry, some Navajo believe created the imbalance that caused all the bad things, like sickness in the world. Western medicine from this perspective is busy stitching up the wounds, while traditional medicine is busy repairing the balance of the universe.[62]

When asked if she thought western medicine was interfering in the ways of traditional Navajo spiritual and healing beliefs Kahn answered no. She keeps her

Navajoness and also functioned in the dominant society.[63] Western medicine and traditional medicine continued to work together. The Navajo adapted to the use of western medicine without letting it overpower their beliefs in their medicine.

Family and Community

Family was always a cornerstone of the Navajo way of life. It was the responsibility of the elder members of the family to pass down the traditions and wisdom of the past that made the Navajo who they were. The uranium mining industry, however, has left a heavy mark on the families of the Navajo community as well. One of the most obvious effects of the mining was the numbers of people killed by radiation from the minesThose were mainly grandfathers, fathers, brothers, sons, nephews, uncles, and friends to thousands of families on the reservation. As they passed away, important pieces of what they could have taught to the next generation went with them. There numbers do not include the grandmothers, wives, mothers, aunts, nieces and daughters who lived at home and were also affected. It was not necessary to be working in the mine to feel the effects of radiation poising. The water used for drinking in the homes of the Navajo families is contaminated with radiation.[64] The dirt from the tailing piles was used to mix the concrete that built miners' homes. .[65] Miners went home, to their spouses and children, their bodies and clothes covered in uranium dust, because there was no place for them to change or take a shower at the mine. [66]

Fannie Yazzie's husband was a uranium miner for 25 years. During that time she and her family lived in a remote area of the reservation where they had no running water, and she would often wash her husband's work clothes, along with the rest of the family laundry, by hand. She also remembers that her husband would often not change out of his work clothes when he came home. "When he came home, he used to sleep in the clothes

in the house."[67] She now blames the unexplainable health problems of herself and her children on the exposure brought into the house unknowingly by her husband.

But still the miners themselves left the biggest hole in their families and community.

Figure 5 A family without a father due to the effects of uranium mining in Cove, New Mexico. Photograph by Dan Budnik. Found in *Metal of Dishonor*, e.d John Catalinotto and Sara Flounders of the Depleted Uranium Project 1994-1996 (New York: International Action Center, 1993)

Their continued decline left one Hopi man to say this:

> And the old man says: the woman used to ---in our knowledge—that the man used to walk in the front going through a woods or someplace. Women and children follow them. Now, today, later, women will be up and in the front. … I mention; so now it's up to the women to start cleaning up the mess. Menfolk messed this up; they don't want to clean up. It's time for the women to really get after them and help them clean this mess up before it is too late…[68]

According to this statement, women had become the leaders in the home. As leaders, and since the men who made the mess were not doing anything about the problem, women shouldered the responsibility to fix it. After the deaths of many heads of

households, the women had no choice but to take the lead. Young men with families who died in their thirties and forties left their women to tend to children and manage a household on as little a $250 a month from social security or whatever other government assistance they could receive.[69] During the high point of the uranium mining industry in the 1940s and 1950s on the Navajo Reservation the American ideal of a nuclear family consisted of a household led by a father, who would earn the income for the family, a mother who would run the household, and their children. With an unemployment rate of near 70 percent, among the Navajo, there were few wage-earning opportunities for women on the reservation.[70] The introduction of uranium mining affectively undermined that 1950s ideal among Navajo people. The industry killed the male provider and created single moms.

Uranium mining also destroyed the health of their children and grandchildren further eroding the nuclear family model. Gilbert Badonie is the son of a uranium miner. Although he never worked in the mine, he suffers from a mining-related disease. Could his father have passed it down to him? George Lapahe, of Gray Hills, NM, has seen the same things happen to his children:

> Now they also found some tumors in their inner organs, both my boys and daughters. Where is this coming from? There never used to be stories like this. Now those of us who worked with uranium see our children beginning to be affected by it.[71]

Their children are getting sick and may not survive. There is also the possibility that the older generations will decide not to have any children at all. The communities near or involved with the uranium mining industry saw the sickness that radiation brought to themselves and their children. They have also seen the mutations that it caused in the animal population. Most Navajo lived very closely with the animals they raised.

Living so closely with the animals they raised, there was a growing fear that their own children would be born with the same mutations. The concern that a parent would pass on diseases or mutations to their children kept some Navajo from having any family at all.[72] If these trends continue it could have devastating effects to the continuation of Navajo culture.

Anyone in the family was susceptible to the effects of radiation, and radiation effects could separate families at any time, not just from those who died. In the documentary video, "The Return of Navajo Boy", the remaining members of the Cly family view a movie entitled, "Navajo Boy", which was made in the early 1950s about their family. The Cly family lived in Monument Valley, Utah for as long as anyone could remember and even in the early film, "Navajo Boy", the effects of the radiation from the uranium could be detected. Happy Cly's daughter died due to respiratory infections and because the grandmother, Happy, was showing signs of sickness as well, she was not deemed fit to raise the youngest child, John Wayne Cly, who was therefore placed in a white missionary foster home. In that home, there was no teaching of the ways that would make him Navajo. He and his foster Navajo brother and sisters were raised white. He knew that he was Navajo, but he knew nothing of the traditions or myths of his people. The effects of radiation not only killed his mother and made other members of his family ill, including his older brother Bernie, but it also robbed him of his culture. While he was growing up, all he had to connect to where he came from was a letter from his namesake John Wayne, the actor. [73]

But in a turn of events, the effect of uranium mining also brought John Wayne Cly back to his family. His brother, Bernie Cly, worked in the uranium mines. He

attended a meeting of Navajo miners seeking compensation under the Radiation Exposure Act (RECA).[74] RECA is a U.S. government act that compensates uranium miners and their widows who meet its requirements: They must have worked in a mine from January 1, 1947 through December 31, 1971.[75] Bernie Cly told his story of the effects of mining uranium and he spoke of his lost brother to a reporter there. When that story was printed in the newspaper, John Wayne was able to reconnect with his family. The Navajo fight for compensation was not only a fight to rebuild the lives of radiation victims, but in this case, a method of rebuilding a family that radiation exposure had torn apart.

People do not have to die for radiation to have a direct effect on family and community structure. Mining left the toxic levels of radiation in the land or water and forced the Navajo to from areas needed to create new mines. The Navajo have no word for "relocation". Moving away is to leave and never return. Basically, those who move away become dead to those they once knew.[76] So, when people were relocated, it broke the bonds of the extended family and community. In this way, dependence on the nuclear family became stronger, like those of the 1940s and 1950s American ideal.

Today the 1950s ideal of a wedded wife and husband is seriously affecting Navajo households. In order for widows to receive compensation under the RECA, they must show proof of marriage. Most Navajo couples of 1940s through the 1970s participated in traditional ceremonies and do not have legal or documented proof of their marriage; thus, they were excluded from much-needed compensation. The agencies responsible for monitoring compensation payments to Navajo miners are much more concerned about making sure those with fraudulent claims do not get a settlement, then

they are about making sure those Navajo with genuine claims get paid.[77] The act therefore, undermined the value of traditional ceremonies and _____ Navajo to _____ to mainstream module of family and marriage.

Traditional culture was also effect by the adoption of wage labor. Manuel Pino says this shift from farmers and animal herders to wage earners affected traditional culture, language, and participation in ceremonies. Instead being able to leave the fields for a day or leaving the animals in their pens, men working eight to five could not participate in traditional ceremonies. Because of this shift in priorities, the younger, wage-earning generations know very little about their traditions.[78]

The Navajo have adapted to the wage-earning economy, but only to be able to survive in a world that could no longer support their lifestyle of livestock-ranching and farming. Uranium mining was the first major wage opportunity that presented itself. Had there been other job opportunities, they might also have enticed Navajo workers into the wage labor economy. Herding sheep is still very important, but it is no longer the main source of income for the Navajo family. Also, at the present time, there has been a resurgence of people wanting to make the time to know where they come from. A renewed interest in the Navajo traditions and language started a revival among young people who are learning the traditional ways of the Navajo. So, one day they will be able to pass on what they have learned to the next generation.

The effects of the uranium industry on the Navajo family and community have been great, but the Navajo still managed to not totally conform to the social structures put before them. Unlike the 1940s and 1950s ideal of the man leading the household, the Navajo chose to accept the leadership of women in families as a progressive step into the

future. But they did become more reliant on the nuclear family structure due to the instability of life and movement in the community. Instability was also the main reason they embraced the wage-labor economy of the uranium industry. It was all done in an effort to survive.

Conclusion

Even before there was a Navajo tribe, nation , or people, the ancestors knew how to adapt to their surroundings. It would be presumptuous to condense their history into a 30-page essay, but the Navajo seem to prove themselves over and over again not to be conformers or a group of people waiting for assimilation, but people who survive by adapting to the needs of their situation. To completely rebel against the changes happening around them would have meant disaster and the total annihilation of their people. But, they fought as their ancestors did against the evils (*hochxo)* that try to destroy this world and they fought to make it true to its name, "Glittering World".

One of the largest evils they had to face was the coming of the uranium mining industry. It was an evil that had to be adapted to for there was no way to stop it. Its introduction into the Navajo community brought some of the toughest trials the Navajo have ever known. It left devastating affects on almost everything the Navajo held dear. Mining ripped large craters and contaminated the land, water and even the air on the Navajo reservation.. The land they had cherished can no longer be trusted. Even so, the Navajo did not abandon their land, but continue to live on it and fight for its healthy return every day.

The sickness and mutations brought on by radiation challenged the traditional healers and sent many suffering miners and their families to seek western medicine, but

traditional healers, like Annie Kahn, do not see this as the death of traditional medicine. They see it as building a partnership between traditional and western medicine.

The Navajo rely on that partnership to fight the loss of life and its effects on their families and communities. Navajo couples are afraid to have a family of their own, with the risk of passing on radiation-related diseases, and the mutations they have seen in their animals, to their children. The Navajo resisted adapting to the 1940s and 1950s ideal of the husband-led household. Navajo women took over responsibility where the men, either by death or sickness could not. Unfortunately, the instability of the land required movement and caused death and sickness. These forces undermined traditional dependence on the extended family, ironically _____ the Navajo into more isolated, nuclear family units. The Navajo were able to resist the total effects of these changes and only adapted what they needed to survive. They accepted these changes into their culture and made them Navajo. This compromise allowed them to keep who they are as a culture, but helped them survive in an ever-changing world.

Endnotes

1 Charles William Luckmann, *Toward a Participatory Biography of the Blackgoats*, A Navajo Family (Masters Thesis, Western Washington University 1996) , p. 17

2 Ibid.

3 Ibid.

4 Margaret Amalia Hiesinger The *House That Uranium Built: Perspectives on the Effects of Exposure on Individuals and Community* Kroeber Anthropological Society Papers no. 87 (2002)p. 10

5, Peter H. Eichstaedt, *If You Poison Us* (New Mexico: Red Crane Books, 1995)p.33

6, Rachel L.Spieldoch *Uranium Is in My Body American Indian Culture and Research Journal* 20:2 (1996) p. 173

7 Eichstaedt, p. 83

8 Peter Iverson, Diné *: A History of the Navajos* (Albuquerque: University of New Mexico Press, 2002) p. 32

9 Luckmann, p. 19

10 Iverson, p.8-9. In Washington Matthews's *Navajo Legends* (Salt Lake City: University of Utah Press,1994) account the first world is known as red.

11 Ibid.

12 Washington Matthews, *Navajo Legends* (Salt Lake City: University of Utah Press,1994)p. 66

13 Ibid.

14 Ibid.

15 Ibid., p. 76

16 Iverson, p. 8-9

17 Ibid.

18 Luckmann, p. 19

19 Encarta® World English Dictionary [North American Edition] (2004), s.v. "adaptation." http://encarta.msn.com/dictionary_/adaptation%20.html

20 Luckmann, p. 18

21 Ibid., p.19

22 U.S. Census Bureau, *Governments Division General Population Characteristics: Arizona 1960* (Washington D.C: Governments Division, 1960), p. 4-17

23 U.S. Census Bureau, Governments Division *General Characteristics of the Rural Population for Counties: Arizona 1970* (Washington D.C: Governments Division, 1960), p. 4-68

24 U.S. Census Bureau, Government Division General *Characteristics for the Total and American Indian Persons on Reservations: New Mexico 1980* (Washington D.C.: Governments Division, 1980), p. 33-123

25 U.S. Census Bureau, Governments Division *Census 2000 American Indian and Alaska Native Summary File (SFAIAN)* U.S. in ,,Census Bureau American Fact Finder,, *Census 2000 American Indian and Alaska Native Summery File (SFAIAN)* ,,http:factfinder.census.gov/servlet/DTTable?_brn=y&-geo_id=01000US&-ds_name=DEC...,,

26 Rondon, p. 94-95

27 Iverson , p, 18-19

28 Ibid. p.22

29 Ibid. p. 52

30 Albert Laughter, "The Long Walk" found in *Diné : People of the Canyon* Land, hosted by View Zone Four Corners Expedition, written June 1998 last updated July of 1998 ,,http://www.viewzone.com/day3w.html"

31 Iverson, pg. 35

32 Ibid., p.66

33 Ibid, p. 81-83

34 Simon Ager, "Omniglot : a Guide to Writing Systems" Omniglot.com written 1998 last updated 2002 ‹‹http://www.omniglot.com/writing/navajo.htm››

35 Richard White, *The Roots of Dependency* (Lincoln and London: University of Nebraska Press, 1983) p. 237

36 Iverson, p. 7-8 Bardoncito mentions four sacred mountains, North, South, East, and West instead of six. These four were the most important.

37 Luckmann, p. 23

38 Eichstaedt, p. 23

39, Margaret Amalia Hiesinger, *"The House That Uranium Built: Perspectives on the Effects of Exposure on Individuals and Community", Kroeber Anthropological Society Papers* no. 87 (2002) 7-53., p. 40-41

40 Leslie J Freeman, *Nuclear Witnesses: Insiders Speak Out* (New York, London: W.W. Norton & Company, 1981) p. 92

41 Freeman, p. 148-149

42 Hiesinger, p. 13

43 Ibid, p.17

44 Spieldoch, p. 175

45 Hiesinger, p. 22

46 Hiesinger, p. 25

47 Eichstaedt, p. 26

48 Ibid, p. 178

49 Ibid, p. 145

50 Iverson, p. .98

51 Anna Rondon, "Uranium, the Pentagon and Navajo People", in *Metal of Dishonor*, ed. John Catalinotto and Sara Flounders Depleted Uranium Project 1994-1996 (New York: International Action Center , 1993) p. 14

52 Eichstaedt, p. 172-175

53 Ibid, p. 173

54 Ibid, p. 174

55 Hiesinger, p. 17

56 Eichstaedt, p. 173

57Ibid, p. 172-195

58 Iverson, p. 201

59 Bodette Perrone, H. Henrietta Stockel, and Victoria Krueger *Medicine Women, Curanderas, and Women Doctors.* (Norman : University of Oklahoma Press, 1989), p. 29-40

60. Ibid, p. 35

61 Ibid, p. 42-43

62 Ibid, p.39

63 Ibid, p. 41

64 Freeman, p. 163

65 Eichstaedt, p. 182

66 Ibid, p. 53

67 Ibid, p. 192-193

68 Thomas Banyacya Sr., Testimony (Taken from his speech at the World Uranium Hearing, Salzburg, 1992) in www. Radical.org reprinted with permission from *Poison Fire, Sacred Earth, Testimonies, Lectures, Conclusions, the World Uranium Hearing*, Salzburg 1992 www.ratical.org.radiation/WorldUraniumHearing/ManuelPino.html p. 32-36

69 Eichstaedt p.92

70, Ben Daitz M.D., *A DOCTORS JOURNAL; Navajo Miners Battle a Deadly Legacy of Yellow Dust, New York Times*, May 13, 3003, Section F, Late Edition.

71 *Navajo Uranium Miner Oral History Project 1997 Memories Come To Us In The Rain And The Wind: Oral Histories and Photographs of Navajo Uranium Miners and Their families*.(Jamaica Plain, Massachusetts: Red Sun Press.) Information may be found in Hiesinger, p. 11

72 Ibid, p. 10

73 *The Return of Navajo Boy*, produced by Jeff Spitz, 2 hours, Jeff Spitz Productions, 2000, videocassette.

74 Ibid.

75 U.S. Statutes at Large 104 (1990): 920-26 [Public Law 101-426] *Radiation Exposure Compensation Act*, October 15, 1990.

76 Luckmann, p. 31

77 Keith Schneider, *A Valley of Death for the Uranium Miners*, New York Times, 3 March 1993, sec. A, p. 1

78 Manuel Pino, *Testimony* (Taken from his speech at the World Uranium Hearing, Salzburg, 1992) in www. Radical.org reprinted with permission from *Poison Fire, Sacred Earth, Testimonies, Lectures, Conclusions, the World Uranium Hearing*, Salzburg 1992 www.ratical.org.radiation/WorldUraniumHearing/ManuelPino.htmlp. 146-148

Bibliography

Ager , Simon, *"Omniglot : a Guide to Writing Systems"* Omniglot.com written 1998 last updated 2002 "http://www.omniglot.com/writing/navajo.htm"

Banyacya Sr., Thomas, *Testimony* (Taken from his speech at the World Uranium Hearing, Salzburg, 1992) in www. Radical.org reprinted with permission from *Poison Fire, Sacred Earth, Testimonies, Lectures, Conclusions, the World Uranium Hearing*, Salzburg 1992 www.ratical.org.radiation/WorldUraniumHearing/ManuelPino.html

Daitz, Ben, M.D., A *DOCTORS JOURNAL; Navajo Miners Battle a Deadly Legacy of Yellow Dust, New York Times*, May 13, 3003, Section F, Late Edition.

Eichstaedt, Peter H., If *You Poison Us* (New Mexico: Red Crane Books, 1995)

Encarta® World English Dictionary [North American Edition] (2004), s.v. "adaptation." http://encarta.msn.com/dictionary_/adaptation%20.html

Freeman, Leslie J, *Nuclear Witnesses: Insiders Speak Out* (New York, London: W.W. Norton & Company, 1981)

Hiesinger, Margaret Amalia, "The House That Uranium Built: Perspectives on the Effects of Exposure on Individuals and Community", *Kroeber Anthropological Society Papers* no. 87 (2002) 7-53

Iverson, Peter *Diné: A History of the Navajos* (Albuquerque: University of New Mexico Press, 2002)

Laughter, Albert "The Long Walk" found in *Diné : People of the Canyon Land*, hosted by View Zone Four Corners Expedition written June 1998 last updated July of 1998 http://www.viewzone.com/day3w.html

Luckmann, Charles William, *Toward a Participatory Biography of the BlackGoats, A Navajo Family* (Masters Thesis, Western Washington University , 1996)

Matthews, Washington, *Navajo Legend* (Salt Lake City: University of Utah Press,1994)

Pino, Manuel, Testimony (Taken from his speech at the World Uranium Hearing, Salzburg, 1992) in www. Radical.org reprinted with permission from *Poison Fire, Sacred Earth, Testimonies, Lectures, Conclusions, the World Uranium Hearing*, Salzburg 1992 www.ratical.org.radiation/WorldUraniumHearing/ManuelPino.html

Perrone, Bobette, H. Henrietta Stockel, and Victoria Krueger, *Medicine Women, Curanderas, and Women Doctors* (Norman and London : University of Oklahoma Press, 1989)

Rondon, Anna "Uranium, the Pentagon and Navajo People" in *Metal of Dishonor*, ed. John Catalinotto and Sara Flounders of the Depleted Uranium Project 1994-1996. (New York: International Action Center , 1993)

Schneider, Keith, *A Valley of Death for the Uranium Miners*, New York Times, 3 March 1993, sec. A, p.1

Spieldoch, Rachel L., "Uranium is in My Body" *American Indian Culture and Research Journal* 20:2 (1996)

The Return of Navajo Boy, produced by Jeff Spitz, 2 hours, Jeff Spitz Productions, 2000, videocassette.

U.S. Census Bureau, Government Division *General Population Characteristics: Arizona 1960* (Washington D.C.: Governments Division, 1960)

U.S. Census Bureau, Governments Division *General Characteristics of the Rural Population for Counties: Arizona 1970* (Washington D.C: Governments Division, 1970)

U.S. Census Bureau, Government Division *General Characteristics for the Total and American Indian Persons on Reservations: New Mexico 1980* (Washington D.C. : Governments Division, 1980)

U.S. Census Bureau, Governments Division *Census 2000 American Indian and Alaska Native Summery File (SFAIAN)* found in U.S. Census Bureau American Fact Finder, *Census 2000 American Indian and Alaska Native Summery File (SFAIAN)* http:/factfinder.census.gov/servlet/DTTable?_bm=y&geo_id=01000US&ds_name=DEC ...

U.S. Statutes at Large 104 (1990): 920-26 [Public Law 101-426] *Radiation Exposure Compensation Act*, October 15, 1990.

White, Richard, *The Roots of Dependency* (Lincoln and London: University of Nebraska Press, 1983)