

RADIOACTIVE HERITAGE: AN AUTOETHNOGRAPHIC INVESTIGATION OF CHERNOBYL AS A DARK
HERITAGE SITE

BY

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DISSERTATION

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Abstract

This research aims to unearth Chernobyl's radioactive heritage through autoethnographic methodology. The autoethnographic method takes readers on a first-person tour of Chernobyl and the Exclusion Zone. In doing so, readers are given the unique first-person opportunity to experience the site, its heritage, and its value. The overarching questions addressed are whether Chernobyl's heritage is universally valuable and does that value warrant UNESCO's attention and possible consideration for future enlistment on the World Heritage List. This work should help bring new meaning to Chernobyl as more than just a dark tourism site. In visiting and learning more about Chernobyl, tourists will not only renew their awareness of nuclear disasters but will be inspired by Chernobyl's heroes, nature's resurgence and the transformative power of dark tourism sites.

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CHAPTER 1

INTRODUCTION

At first, the question was, who's to blame?

But then, when we learned more, we started thinking. What should we do?

(Vygovskaya, 2006)

The research question raised in this study is whether or not Chernobyl has a universally valuable heritage, in the context of a dark tourism site that people would want to experience. Furthermore, does that value warrant UNESCO's attention and possible consideration for future enlistment on the World Heritage List?

Chernobyl is a dark tourism site with a complicated heritage. The dark tourism experience is "...the phenomenon which encompasses the presentation and consumption of real and commodified death and disaster sites (Lennon and Foley, 2000). Heritage is associated with the visitor's subjective and emotional interpretation of the past (Zuzanek, 1998). The first question addressed is whether or not we should commemorate these dark heritage sites. If the answer is yes, then what is it about Chernobyl that is worth commemorating, and what is it about Chernobyl that is worth visiting? If the Chernobyl tragedy provides an important lesson for mankind and a site tourists want to experience, then does it have a universally valuable heritage deserving of UNESCO's attention?

The fields of dark tourism and heritage are indelibly connected. Previous works by authors such as Seaton and Lennon (2004) established that dark tourism sites, just like more

traditional heritage sites, involve ideological and political issues. Stone and Sharpley (2008) recognize and describe how people have always been attracted to death and disaster. Furthermore, as in the cases of Auschwitz and Hiroshima, UNESCO has re-considered the meaning of universal value specifically in the context of world heritage sites. I use an autoethnographic approach to answer the questions of whether Chernobyl is worth commemorating and whether it has universal value deserving of UNESCO's attention. Ellis (2000) has established that autoethnography is a methodology that allows the writer to do something meaningful for themselves and society as a whole (Ellis 2000). The moving personal stories of Holocaust and atom bomb survivors bear witness to the communicative power of this autoethnographic approach.

The purpose of this research is to let readers see Chernobyl and the Exclusion Zone through the eyes of an existential tourist, experience its universal value, and discover heritage in a place unlike any other in the world. Chapter 2, the Background, introduces the reader to Chernobyl: the accident and its effects are presented. This is followed by a discussion of Chernobyl tourism today, a reference to the Fukushima disaster, and an overview of UNESCO World Heritage Sites. Chapter 3, the Literature Review, establishes the indicators for being enlisted on the World Heritage List without strictly meeting one of the requisite 10 criteria. This is followed by an overview of dark tourism, and the motivations for visiting dark tourism sites. Chapter 4, the Methodology, describes why autoethnography was used for this research. Furthermore, a summary of autoethnography as a methodology, referencing the work of Carolyn Ellis and Norman Denzin, is presented. Chapter 5, the Results, is an autoethnographic tour of Chernobyl. The entire Chernobyl tour is recreated including: my purpose for going in *The Existential Tourist*, a look at the Chernobyl Museum in *Sketches from the Deathbed*, the trip

from Kyiv to Chernobyl in *The Road*, the buried village of Kopachi in *A Doll in the Forest*, the city of Pripyat in *I Was Here*, Reactor Four in *The Sarcophagus*, future containment in *An Empty Field*, the wildlife in Chernobyl in *Evolution on Steroids*, and my trip home in *Coming Full Circle*. Chapter 6, the Conclusion, readdresses the research question followed by the presentation of findings and implications. My findings indicate that Chernobyl does have a valuable heritage, and it is possible to extrapolate my individual experience, based on a value model derived from UNESCO's inclusion of both Auschwitz and Hiroshima, to a larger spectrum of potential visitors. My overarching conclusion is that Chernobyl should be considered in the future for enlistment on the World Heritage List.

This study contributes to the established theoretical framework of dark tourism and heritage by exploring Chernobyl's universal value and in doing so, helping to define what "outstanding universal value" means in the context of dark tourism sites. Chernobyl is a testament to technology gone awry and to man's arrogance in underestimating the risks of his mastery over the atom. This study also demonstrates the value of the methodology of autoethnography, this time from the perspective of the "existential tourist" (Brown, 2013), in expanding the horizons of tourism research.

CHAPTER 2

BACKGROUND

An Accident

An accident has occurred at the Chernobyl nuclear power plant—one of the atomic reactors has been damaged. Measures are being undertaken to liquidate the consequences of the accident. Those affected are being given aid, and a government commission has been created.

(Radio Moscow, 1986)

Moscow issued this announcement after workers at a nuclear power plant near Stockholm, Sweden detected radioactive particles on their clothing from an unidentified source. Two days earlier, and over 1000 kilometers southeast, Reactor Number 4 at the Chernobyl Nuclear Power Plant had exploded. In the initial days following the accident significant releases of radioactivity occurred, and the deposition of radiation was unpredictable. It depended highly on particle sizes, wind, and rain. The heaviest particles were mostly deposited within a 100-kilometer radius of the reactor. The gases and smaller particles, such as radioiodine, radiotellurium, and radiocesium, were carried much further by the wind, and later deposited by rain. Because the wind was initially blowing northwest, in addition to Ukraine, Belarus, and Russia, even the Scandinavian countries were affected. The accident at the Chernobyl Nuclear

Power Station was the largest nuclear disaster in history, releasing 400 times more radiation than the Hiroshima bomb.

One in 10,000 Years

In February 1986, two months before the accident, the magazine *Soviet Life* featured the Chernobyl plant in an article by Maxim Rylsky entitled “A Town Born of the Atom.” In the article, Vitali Sklyarov, the Minister of Power and Electrification of the Ukraine, was interviewed.

Q: Nuclear plants are being built close to big cities and resort areas. How safe are they?

A: The odds of a meltdown are one in 10,000 years. The plants have safe and reliable controls that are protected from breakdown with three safety lines. The lines operate independently without duplicating one another. New equipment with higher reliability is being developed. Pilot models are tested under conditions similar to working conditions.

The environment is also securely detected. Hermetically sealed buildings, closed cycles for technological processes with radioactive agents and systems purification and harmless waste disposal preclude any discharge into the external environment (Soviet Life, 1986).

Chernobyl

Ukraine is located on the western borderland of what used to be the Union of Soviet Socialist Republics (USSR). Chernobyl, 133 kilometers north of the capital city of Kyiv, is located at the intersection of the Pripyat and Uzh rivers. While Ukraine was known as the

breadbasket of Europe (the yellow half of Ukraine's flag is meant to symbolize golden wheat fields), the Chernobyl region, also known as Polissya, was not well suited for agricultural cultivation (Marples, 1986). The terrain is mostly peat bogs and marshland. Unlike much of Ukraine that boasts rich black soil perfect for farming, the soil in the Chernobyl region is sandy. "What little industry there was consisted of food processing and small-scale shipbuilding; the main agriculture consists of flax and potato growing, and only about one-third of the overall territory is suitable for crop production" (Marples, 1986, p. 115). Consequently, even by Soviet standards, this region's population remained relatively small. Despite a poor find in terms of agricultural production, Chernobyl's first settlers, in 1193, had unknowingly found the perfect location for a 20th century nuclear power plant.

The Polissya region, which in 1986 was considered to be in the Soviet heartland, was historically a multiethnic borderland with a rich and complex cultural history (Brown, 2004). In the sixteenth century it stood at the eastern limit of the Polish-Lithuanian Commonwealth. When the tsarist empire moved west in the late eighteenth century, the region became the Pale of Settlement, beyond which Jews were forbidden to live. The Hasidic movement originated in this borderland, and the town of Chernobyl was once the center of a Hasidic dynasty. The borderland between Ukraine and Poland was also the boundary between the Catholic and Orthodox churches and gave birth to the hybrid Uniate Church. The Soviet Great Purges in the 1930s radically resettled the region, deporting nearly half the region's Poles and Germans. During World War II, the borderland became the Bloodlands (Snyder, 2010). During the past century, the Chernobyl region has been depopulated by deportations, war, and finally radiation. Much of this history, which has cultural significance to many, has been obscured by the shadow of the Chernobyl reactor accident.

The USSR was enormous, and supplying energy to the furthest points of the Union and to Eastern Europe was increasingly difficult. Meanwhile, the demand for electricity was considerable and growing rapidly. As a result, by the 1970's, the Soviets were seeking alternative supplies of energy that were less geographically restricted. They could no longer rely on distant oilfields and coal mines to meet their growing energy needs—especially considering that coal and oil required extraction and transportation. The solution to their problem was nuclear energy. Nuclear energy was reliable, economical, and could produce electricity to meet the ever-growing demand.

In 1954, in the city of Obninsk, the Soviets claimed to have built the first ever nuclear power plant for civilian use. But it wasn't until the 1970's that nuclear power was seriously explored by the Soviets as a major supplier of energy. "Not only was nuclear energy seen as a way to plug an energy gap, but the exporting of nuclear energy was perceived as the most convenient way to circumnavigate the need for Soviet oil in Eastern Europe" (Marples, 1986, p. 50). Ukraine, and Chernobyl in particular, were the perfect location for the USSR's nuclear energy efforts. In 1970, Soviet authorities decided Ukraine's first power plant would be located in Chernobyl.

By October 1977, the first power block came on stream, a graphite moderated 1000 megawatt reactor, similar to the one developed earlier at the Leningrad nuclear power plant. Other units followed in 1978, 1981 and 1983. On average, each unit of twin reactors had taken seven or eight years to construct. The fifth reactor was scheduled to come on-stream in 1986 and a sixth in 1988. By 1986, Chernobyl accounted for 10 percent of the USSR's total electricity-generating capacity, and was, along with

Leningrad, the Soviet Union's largest nuclear power plant at 4000 megawatts (Marples, 1986, p. 116).

Still, questions remain as to why the Chernobyl Nuclear Power Plant was ever constructed. "A former Soviet official was quoted in an American newspaper as saying that there was acute opposition to the building of the Chernobyl station within the Ukrainian hierarchy" (Marples, 1986, p. 116). Ukraine was energy rich on its own and did not need power from the Chernobyl plant—especially considering the risks involved in generating nuclear power. Over the years there has been a multitude of speculation, most notably that the plant was actually created to produce plutonium for the USSR's nuclear weapons program: "the fact that it used a graphite moderator, unique in Ukraine since all the other plants under construction use water-pressurized reactors, seemed to support this [the nuclear weapons] theory, whose adherents have included nuclear physicist Jens Scheer of the University of Bremen and the Financial Times" (Marples, 1986, p. 116). There was, ultimately, no reason for the Soviet's to use a graphite moderator in their nuclear power plant. Water is a proven, infinitely safer moderator. Indeed, graphite is particularly dangerous because it is essentially carbon, and carbon combined with oxygen forms carbon monoxide (CO), a flammable gas. This of course is exactly what happened: the explosion at Chernobyl ignited a graphite fire that burned for a week and was responsible for a great deal of the radioactive contamination that followed the disaster.

According to observers outside Unit 4, burning lumps of material and sparks shot into the air above the reactor. Some of them fell on to the roof of the machine hall and started a fire. About 25 percent of the red-hot graphite blocks and overheated material from the

fuel channels was ejected. ...Parts of the graphite blocks and fuel channels were out of the reactor building. ...As a result of the damage to the building, an airflow through the core was established by the high temperature of the core. The air ignited the hot graphite and started a graphite fire (Medvedev, 1990, p. 32).

A Safety Test

The Chernobyl Unit 4 reactor was scheduled to be shut down for routine maintenance on April 25, 1986. Ironically, the operators decided to run a safety experiment. They took advantage of the shut down to determine if, in event of a loss of station power, the slowing turbine could provide enough electrical power to operate the emergency equipment and core cooling water pumps, until the diesel emergency power supply became operative. The operating personnel were not alerted to the nuclear safety implications of this test. At low power the reactor becomes unstable due to the competing effects of the “positive void coefficient” vs “the negative fuel coefficient.” With the positive void coefficient, when the power to the reactor increases, or water flow decreases, there is increased steam production in the fuel channels. Neutrons that would have been absorbed by the denser water now pass more easily through steam, which increase fission. With the negative fuel coefficient, as the power increases, so does the temperature of the fuel. The increase in the temperature of the fuel reduces neutron flux. The net effect of these opposing factors varies with the power level. At high power levels of normal operation, the temperature effect predominates. At power output levels less than 20% of maximum, the positive void coefficient predominates and the reactor becomes unstable.

While the reactor should have been stabilized at 1000 MWt for the test, due to operational error, the power fell to 30 MWt where the positive void coefficient became dominant. The operators tried to raise power by switching off automatic regulators and freeing control rods manually. Although a minimum of 30 control rods is necessary to retain reactor control, all but 6 to 8 were withdrawn. The remainder of the control rods was withdrawn to compensate for the buildup of xenon which absorbed neutrons and reduced power.

As the reactor became more unstable, the operators reduced the flow of feed water to maintain steam pressure. Pumps that were powered by the slowing turbine were providing less cooling water to the reactor. The loss of cooling water exaggerated the unstable condition by increasing steam production in the cooling channels (positive void coefficient). The reactor experienced an overwhelming power surge (100 times normal output) that resulted in a steam explosion that destroyed the reactor core. The initial steam explosion was followed by a second explosion, most likely a hydrogen explosion due to zirconium-steam interactions, a few seconds later. The explosions destroyed the core of the reactor and the roof of the reactor building. Unlike most reactors in the west, the Chernobyl reactors did not have an outside (e.g. concrete shell) containment, and the radionuclides were dispersed into the atmosphere. While the conventional fires were extinguished by early morning, the graphite began to burn and continued to disperse radionuclides until May 9 when it was finally extinguished by smothering it with hundreds of tons of boron, lead, sand, clay, and dolomite that were delivered by 1800 helicopter flights over the smoldering core.

Evacuation

On April 27, 1986 at 2 pm, 1200 buses arrived to evacuate the citizens of Pripyat located 4 km from the plant. Founded in 1970, Pripyat was a city built for the workers of the Chernobyl Nuclear Power Plant and their families. According to former mayor Vladimir Voloshko: “we are building the town and the plant at the same time” (Soviet Life, 1986, p. 13). Pripyat had all the amenities its residents could ask for: nice-sized apartments, ample green space, public recreation centers, theaters, supermarkets and the like. It was the model Soviet city. The average age of a resident was only twenty-six, people were happy, and the city was experiencing its own baby boom (Soviet Life, 1986). At the time of the disaster, the population of Pripyat numbered 50,000 people. Most of those residents were asleep, and unaware when the Chernobyl disaster first occurred at 1:23 a.m. on April 26. Thirty-six hours after the accident the following evacuation notice appeared:

For the attention of the residents of Pripyat! The City Council informs you that due to the accident at Chernobyl Power Station the radioactive conditions in the vicinity are deteriorating. The Communist Party, its officials and the armed forces are taking necessary steps to combat this. Nevertheless, with the view to keep people as safe and healthy as possible, the children being top priority, we need to temporarily evacuate the citizens in the nearest towns of Kiev Oblast. For these reasons, starting from April 27, 1986 2 p.m. each apartment block will be able to have a bus at its disposal, supervised by the police and the city officials. It is highly advisable to take your documents, some vital personal belongings and a certain amount of food. The senior executives of public and industrial facilities of the city has decided on the list of employees needed to stay in

Pripyat to maintain these facilities in a good working order. All the houses will be guarded by the police during the evacuation period. Tovarishchs (“Comrades”) leaving your residences temporarily please make sure you have turned off the lights, electrical equipment, water, and shut the windows. Please keep calm and orderly in the process of this short-term evacuation.”

The 50,000 evacuated residents of Pripyat were never allowed to return to their homes. Instead, the military established a 30 kilometer radius from the Chernobyl Nuclear Power Plant designated for complete and permanent evacuation. Put under military control, this area became known as the Chernobyl Nuclear Power Plant Zone of Alienation, the Chernobyl Exclusion Zone, the 30 Kilometer Zone, or simply the Zone. In addition, many smaller villages were evacuated as a result of the Chernobyl disaster. Some of these villages were bulldozed and buried under the ground.

Health Effects

Chernobyl was bound up with many misunderstandings and apprehensions about the radioactive release caused by the accident and its real or perceived effects. This was the natural result of the confusing and, at times, contradictory nature of the information released. Perceptions of the catastrophe ranged from those who believed that Chernobyl had been one of the worst nuclear disasters in history to those who saw it as an event with relatively limited health consequences despite the tragic circumstances (Gonzalez, 2007, p. 572).

There was a good deal of secrecy surrounding the disaster, especially at the outset. “Following an unexpected increase in environmental radioactivity on their monitors, it was the

Nordic countries, rather than Moscow, who voiced the first evidence of the accident” (Gonzalez, 2007, p. 572). This warranted a mistrust of the Soviet regime that is still evident, and Ukraine’s relationship with the Russian Federation remains politically complicated. Today, it no longer can be denied, however, that serious and lasting health issues have resulted from the Chernobyl disaster.

Thirty-one acute deaths were attributed to the accident. The immediate deaths occurred among the operators and emergency personnel who rushed in to fight the reactor fire. One person died in the explosion, and a second died of a heart attack. A third died in the early morning from thermal burns. Twenty-eight later died from acute radiation sickness (WHO 2005a). Approximately 20 more have since died from probable radiation- related diseases (Baverstock, 2006, p. 1313).

There were about 600 emergency workers at the Chernobyl Nuclear Power Plant until May 26, 1986 and about 600,000 liquidators, including both civilians and servicemen, until 1990. Estimated external doses in the 134 emergency workers with symptoms of acute radiation sickness ranged between 0.8 and 16 Gy (Gray unit), being markedly higher than internal doses, calculated to be between 0.021 and 4.1 Gy for the thyroid in the 23 firemen who died of bone marrow failure (Saenko, 2010, p. 237).

The danger posed from radiation did not end when Chernobyl ceased to burn. According to the World Health Organization, radioactive iodine swept up by the wind was deposited in pastures, eaten by cows, and concentrated in drinking milk putting thousands of children at risk of exposure. The first evidence of chronic radiation-related disease was a marked increase in the incidence of thyroid cancer, especially among children, that began four years after the accident.

The medical authorities in Belarus and Ukraine were aware in 1990 that the incidence of the rare (background incidence typically about $1/10^6$ children/year) thyroid cancer was increasing, particularly in children living close to the reactor (IAEA 1991). The first reports of the increases were received with skepticism by the scientific community, but were later shown to be real (Williams 1996). “The child’s thyroid is one of the most sensitive human tissues to cancer induction by radiation” (Baverstock, 2006, p. 1313). Recent epidemiologic studies have now established the dose-response relationship between radioiodine doses and risk of thyroid cancer in children exposed to Chernobyl radiation (Brenner et al, 2011). Between 1986 and 2006, 4369 cases of thyroid cancer were registered among children in Ukraine. Epidemiologic studies of liquidators have also observed increased risk of leukemia and ocular cataracts (Worgul et al, 2007). Ongoing exposure to radiocesium, which has a half-life of 30 years and contaminates much of the territory of Ukraine and Belarus, will likely result in many more cases of cancer in the future (Saenko et al, 2011).

Perhaps the greatest health impact of the Chernobyl accident has been the psychological effects (Bromet et al, 2010). In addition to radiophobia and post-traumatic stress disorders, residents have suffered the effects of being “environmental refugees” (displacement from their ancestral homes) as well as stigmatization. “[The psychological impacts] arise from an understandable fear of exposure to an unknown amount of an intangible but potentially dangerous agent, fear for exposed children, mistrust of reassurances from the authorities, and for hundreds of thousands of people, the consequences of forced evacuation from home and land” (Baverstock, 2006, p. 1313). For some, the stress is unimaginable: mothers fearing their child may be born with defects as a result of radiation exposure. And while there have been claims of increased birth defects, serious defects (i.e. limb deformities) do not appear to have increased or

cannot accurately be reported. (Baverstock, 2006, p. 1313) Although this may put some mothers at ease, it is not always what we can see that should concern us. There has been speculation that children born with mini-satellite instability (MSI), a genetic effect, is a result of being born to a father exposed to radiation at Chernobyl. (Dubrova,1996). “Some deaths from suicide ... could also be regarded as indirect consequences of the accident and the subsequent measures taken. (Baverstock, 2006, p. 1313).

Twenty-five Years Later

On March 11, 2011, an earthquake and subsequent tsunami hit the Fukushima Daiichi Nuclear Power Plant, in Japan, leading to equipment failures, a probable nuclear meltdown, and the release of radioactive materials. It was 25 years ago, nearly to the day, that reactor 4 at the Chernobyl Nuclear Power Station had exploded. History, as it often likes to do, had repeated itself.

The nuclear power industry has been resurrected over the past decade by a lobbying campaign that has left many people believing it to be a clean, green, emission-free alternative to fossil fuels. These beliefs pose an extraordinary threat to global public health and encourage a major financial drain on national economies and taxpayers. The commitment to nuclear power as an environmentally safe energy source has also stifled the mass development of alternative technologies that are far cheaper, safer and almost emission free — the future for global energy.

When the Fukushima Daiichi reactors suffered meltdowns in March, literally in the backyard of an unsuspecting public, the stark reality that the risks of nuclear power far

outweigh any benefits should have become clear to the world. As the old quip states, “Nuclear power is one hell of a way to boil water” (The New York Times, December 2, 2011)

Chernobyl Tourism Today

The Exclusion Zone was established on May 2, 1986 when the Soviet government established an area of 30-km radius from Reactor 4 as the designated area for evacuation. In February 1991 newly independent Ukraine passed a law *On the Legal Status of the Territory Exposed to the Radioactive Contamination resulting from the ChNPP Accident* that updated the borders of the Zone based on monitoring of radionuclides in soil. The last operating reactor in the Zone was shut down of December 15, 2000. Approximately 3,000 workers are employed in the Zone engaged in construction of containment, decommissioning of the reactors, and monitoring. In addition approximately 200 former residents have returned to live in the Zone. The Zone is currently administered by the State Agency of Ukraine on the Exclusion Zone Management, which is within the State Emergency Service of Ukraine.

Until 2011, the Chernobyl Zone was accessible to only a limited number of outside visitors, primarily scientists, who required special permission to enter. Visitors also entered the area illegally. On November 18, 2011 the Ministry of Justice of Ukraine approved a procedure proposed by the Ministry of Emergencies for visiting the exclusion zone and zone of unconditional resettlement that opened the Zone to tourism. The procedure required submission and approval of a written request and strict rules to be observed while within the Zone. Several tour companies were established that provided 1-3 day supervised visits. Costs of the group bus tours range from \$150-200; the cost for an individual traveler is approximately \$300. Up to

10,000 visitors are estimated to have visited the Zone in 2012, largely spurred by the influx of tourists for the Eurocup.

UNESCO World Heritage Sites

The Fukushima disaster unearthed the buried memory of Chernobyl. A renewed interest in the world's most significant nuclear disaster, particularly during a time of global nuclear expansion, brought varying questions to the forefront. The most important of which is consolidating a universal meaning and understanding to Chernobyl. This is a difficult task because of a politically and socially sensitive heritage. An adequate reference for such complicated mergers has been established by the United Nations through their World Heritage List. The World Heritage program was founded with the Convention Concerning the Protection of World Cultural and Natural Heritage, and was adopted by the General Conference of UNESCO on November 16, 1972. The List is composed of sites the World Heritage Committee considers as having outstanding universal value. This value is determined by a set of ten criteria. A site must meet one or more of the criteria to be considered for designation. Scholars argue these sites have advocated supremacy of a Eurocentric hegemonic heritage discourse. According to Schmitt (2009), "world heritage is 'produced' through the interplay of local, national and global actors and institutions. Europe's quantitative dominance in respect of World Heritage Sites is at least partly a result of the different conditions of production on the national level" (Schmitt, 2009, p. 112). Meaning, the Heritage List is a reflection of an established administrative culture in economically strong, in most cases European, countries. "On the other hand, the European dominance can in part be explained by the Eurocentric cultural concept of World Heritage List, which tend to attach most importance to architectural monuments"

(Schmitt, 2009, p. 112). Not surprising, many of the World's non-European sites are connected to European colonial history. "Within UNESCO, in many of the (non-European) member states and *in concerto* in the debates of the World Heritage Committee, Europe's quantitative dominance is perceived as a problem which needs to be corrected" (Schmitt, 2009, p. 112). An important argument, but what Schmitt and others fail to address, is that the majority of these sites focus only on man's achievements despite general agreement that we often learn more from our mistakes. While Schmitt's argument is important to the cultural diversity of the Heritage List and very much in line with UNESCO's goals, adding "darker" sites, such as Chernobyl, would strengthen the list's commitment to education. Both Auschwitz and Hiroshima, two of the darkest and most complicated sites in the world have successfully established a consolidated meaning and understanding through UNESCO's recognition and designation of their universal value. Of the nearly 1000 UNESCO Heritage Sites worldwide, only Auschwitz and Hiroshima have been enlisted despite not strictly meeting one of UNESCO's standardized criteria for universal heritage membership. Still, both sites have become major tourist attractions, and are widely considered to be the two most important heritage sites currently enlisted. Chernobyl has the potential to be listed on that short list of exceptions, as man's greatest technological failure and a reminder of the threat of our increasing reliance on dangerous technology. The time is now to shape a universal understanding of Chernobyl's radioactive heritage.

CHAPTER 3

LITERATURE REVIEW

Sometimes I think it'd be better if you didn't write about us. Then people wouldn't be so afraid.

(Burakova, 2006)

In this chapter, I review the literature in three areas most relevant to my study. First, I seek to determine the undeclared definition of “outstanding universal value” through a study of UNESCO’s recognition of other dark tourism sites, specifically Auschwitz-Birkenau and the Hiroshima Peace Memorial, that are on its World Heritage List. Second, I investigate Chernobyl as a dark tourism site to highlight the importance of considering Chernobyl as a place of “outstanding universal value” so that its message and meaning may be preserved. Finally, I review the literature on motivation for travel to show that Chernobyl is a place where people would be motivated to travel, if they had the means and opportunity.

Outstanding Universal Value

Heritage can be viewed as a symbolic embodiment of past, re-imagined and re-constructed in the collective memories and traditions of contemporary societies (Park, 2010, p. 116). Heritage is most recognizably connected to UNESCO World Heritage Sites. The UNESCO World Heritage Convention (1972) states that a world heritage site must furnish proof of “outstanding universal value” for all humanity. In order to meet this threshold, a site must meet one or more of the following criteria:

- (i) "represents a masterpiece of human creative genius"

- (ii) "exhibits an important interchange of human values, over a span of time, or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning, or landscape design"
- (iii) "bears a unique or exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared"
- (iv) "is an outstanding example of a type of building, architectural, or technological ensemble or landscape which illustrates a significant stage in human history"
- (v) "is an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture, or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change"
- (vi) "is directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance"
- (vii) "contains superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance"
- (viii) "is an outstanding example representing major stages of Earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features"
- (ix) "is an outstanding example representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems, and communities of plants and animals"
- (x) "contains the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation."

Within UNESCO's framework, this study seeks to determine through autoethnographic methodology whether Chernobyl and its exclusionary zone have an outstanding universal value great enough to be recognized by UNESCO as a World Heritage Site, despite Chernobyl's failure to meet one or possibly all of the ten criteria. Investigating UNESCO's inclusion of Auschwitz and Hiroshima proves that outstanding universal value exists beyond the UNESCO's ten criteria and can be applied to dark tourism sites.

Auschwitz-Birkenau was enlisted as a UNESCO Heritage Site in 1979, thirty-four years after it officially closed as a working concentration camp. Although the site did not strictly meet one of UNESCO's ten criteria, the site was enlisted under criterion (vi), as an exception, which states:

Auschwitz – Birkenau, monument to the deliberate genocide of the Jews by the Nazi regime (Germany 1933-1945) and to the deaths of countless others bears irrefutable evidence to one of the greatest crimes ever perpetrated against humanity. It is also a monument to the strength of the human spirit which in appalling conditions of adversity resisted the efforts of the German Nazi regime to suppress freedom and free thought and to wipe out whole races. The site is a key place of memory for the whole of humankind for the holocaust, racist policies and barbarism; it is a place of our collective memory of this dark chapter in the history of humanity, of transmission to younger generations and a sign of warning of the many threats and tragic consequences of extreme ideologies and denial of human dignity.

Auschwitz-Birkenau is a physical reminder of one of the darkest chapters in human history. It represents man's greatest crime against man, and as such, Auschwitz-Birekenau has outstanding universal value. It is a symbol and lesson for all humankind and deserving of its

formal recognition by UNESCO. Its universal value is evident in the three reasons articulated by UNESCO: it represents a great crime perpetrated against humanity, it is a monument to the strength of human spirit, and it serves as sign of warning.

The Hiroshima Peace Memorial was also enlisted as an exception, under criterion (vi) and states:

The Hiroshima Peace Memorial (Genbaku Dome) was the only structure left standing in the area where the first atomic bomb exploded on August 6th, 1945. Through the efforts of many people, including those of the city of Hiroshima, it has been preserved in the same state as immediately after the bombing. Not only is it a stark and powerful symbol of the most destructive force ever created by humankind; it also expresses the hope for world peace and the ultimate elimination of all nuclear weapons.

Similar to Auschwitz-Birkenau, the Hiroshima Peace memorial has universal value because it represents the most destructive force ever created, expresses hope for world peace, and stands to serve as a catalyst for the global discussion on the elimination of nuclear weapons.

The common indicators for universal value in dark tourism sites as outlined by UNESCO in their two exceptions are a historic tragedy, the expression of strength and hope of humanity, and a symbol for change. Based on these three indicators the argument that Chernobyl has universal value should garner attention for inclusion as a UNESCO World Heritage Site under criterion (vi). Chernobyl is the world's most recognized nuclear disaster. Though it has not been professionally maintained, the structures in the city of Pripyat still stand in what has become a post-apocalyptic landscape filled with inspirational and provocative street art. The physical site represents our increasing reliance on nuclear power and the threat of future disasters. It

continues to remind us of technological failure and tangibly expresses hope for safer technological development in a world increasingly dependent on such technology.

Dark Tourism

People have always been attracted to death and disaster (Stone & Sharpley, 2008). In fact, the concentration camps at Auschwitz-Birkenau are Poland's top tourist attraction; and Hiroshima is one of Japan's most appealing tourist destinations, visited by travelers from all over the world. A small number of academics have begun studying the appeal of death and disaster for tourists. "Leading the field are Lennon and Foley who labeled it Dark Tourism, Seaton, who coined the term Thanatourism, and Rojek, who developed the concept of Black Spots" (Yuill, 2003, p. iii).

The term 'dark tourism' first coined by Foley and Lennon (1996) is defined as tourism involving travel to sites associated with death and suffering. Lennon and Foley identify degrees of darkness based on time. The more recent the death, the fresher the blood, the darker the site. Sharpley (2009) also identifies intensity levels of dark tourism. He cites a distinction between dark and darker tourism based upon the location of the site and attraction. For example, the Chernobyl Nuclear Power Plant would be a much darker tourist experience as compared to simply visiting the Chernobyl museum located in the capital city of Kyiv. Comparable are tourists' much more profound experience when visiting Auschwitz-Birkenau as compared to visiting the Holocaust Museum in Washington, D.C.

Dark tourism sites despite their new label have long been considered within a broader tourism context. For example, Seaton (1996) has identified a long history of dark tourism. It first emerged in the Middle Ages from what he refers to as thanatopic tradition (the

contemplation of death). It intensified during the late eighteenth and early nineteenth centuries as people were “motivated by the desire for actual or symbolic encounters with death, particularly, but not exclusively, violent death” (Seaton, 1996, p. 240) (Sharpley, 2009).

In particular, Seaton (1996) identifies five purposes for dark travel: to witness reenactments of death, to see symbolic representations of death, witness public enactments of death, sites of individual or mass death, and memorials. In the case of Chernobyl, several of Seaton’s (1996) categories apply. First and foremost, Chernobyl has symbolic representations of death. The city of Pripyat represents death on its grandest scale. Not only did it experience the individual deaths of its worker citizens commemorated by a memorial that currently sits outside Reactor Four, but the city stands vacant, eerily quiet and void of human life – a dead town. In addition, Chernobyl has reenactments of death. For example, on the roof of the Pripyat hotel, there is a portrait of a woman screaming – a permanent portrayal of experiencing the horrors of death. Finally, Chernobyl has a considerable amount of memorials for people to visit. In particular, the Statue of an Angel is an intriguing and thought-provoking memorial to the city of Chernobyl itself that interestingly gets its name from the surrounding wormwood forest. The statue represents the fallen Angel from the Book of Revelations which states:

“The third angel blew his trumpet, and a great star fell from heaven, blazing like a torch, and it fell on a third of the rivers and on the springs of water. The name of the star is Wormwood. A third of the waters became wormwood, and many died from the water because it was made bitter” (Revelation 8:10-11).

According to Foley and Lennon, a site may be unsuccessful as a dark tourism attraction if the site is based on events that took place too long ago to remember. This means that these sites must induce a sense of modern anxiety to ultimately be successful. In essence, dark tourism is a

predominantly modern (twentieth century onwards), primarily Western phenomenon (Sharpley, 2009). Chernobyl is a twentieth century event that continues to be reproduced through contemporary mediums. Much of the world's population alive today remembers the Chernobyl disaster. More importantly, there exists a very real and immediate anxiety of nuclear power. This is especially true after the recent Fukushima Daichii nuclear meltdown following the 2009 tsunami and the alarming rate at which power plants are being built in developing countries all over the world.

In just the past few months, Brazil, South Africa and Saudi Arabia announced plans to move ahead with the construction of nuclear plants — 16 of them, in Saudi Arabia's case. In those nations and in India, China and other parts of the world where nuclear reactors are scheduled to go up by the dozens, the complex calculus of risk may yield a different result.

So even as countries like Germany, Switzerland and — to a lesser extent — Japan swerve away from nuclear energy, many faster-growing economies are staying on course. They see an urgent need for vast amounts of electricity, and see no cleaner, safer, more reliable way to make it (The New York Times, December 2, 2011).

Stone (2012) presents a theoretical framework for dark tourism based on the argument that “dark tourism is a modern mediating institution, which not only provides a physical place to link the living with dead, but also allows a cognitive space for the Self to construct contemporary ontological meanings of mortality.” A dark tourism site is the “place of the Other Dead” while the dark tourism experience is “visiting the Other Dead.” The range of experiences includes dark tourism as narrative (“first step in the overall mediation of mortality process, whereby death and

suffering is presented and interpreted”); education; entertainment (“dark leisure”); haunting; memorialization; moral instruction; and memento mori (“reminders of death”). A visit to Chernobyl offers all of these things. There are countless narratives of heroes, scoundrels, and death by explosion, radiation sickness, and suicide. The visitor is educated in the fundamentals nuclear energy, nuclear safety, and health consequences of radiation. For some, the visit to the ghost town of Pripyat could be a form of dark leisure while others might be haunted by imagined memories. Memorials have been erected to the heroes, victims, and evacuees. The moral instruction can span from the Soviet disregard for the safety of its citizens to the global threat of unleashed nuclear power. Finally, memento mori – from abandoned dolls to piles of gas masks – are everywhere.

In accordance with tourists’ resurrected curiosity with sites associated with death and disaster, the commercialization of such attractions has emerged. Rojek’s work concerning ‘black spots’ was the first work to address this new commercialization (Rojek, 1993). Complimenting Rojek’s work, Foley and Lennon develop a formula for what makes ‘black spots’ successful tourist destinations. First, it is “largely dependent on the ability of global communication technology to instantly report [the event] and, subsequently, repeat them ad infinitum” (Sharpley, 2009, p. 12). Second, the site must “challenge the inherent order, rationality, and progress of modernity” (Sharpley, 2009, p. 12). And finally, the site’s message must be commercialized. (Sharpley, 2009, p. 12)

This contemporary commercialization of dark tourists sites is a reason UNESCO World Heritage Site recognition is so important for those dark sites that have actual universal value. Without the designation that consolidates the meaning of the site, the message becomes lost inside the commercial product. For example, in the case of Chernobyl the importance of the site

being the world's largest nuclear disaster, a place of inspirational and provocative street art, and a warning regarding nuclear power and the future of energy has become marginalized by the commercialization of the site most notably through video games and movies that exploit the post apocalyptic scenery of Pripjat and Chernobyl's Exclusionary Zone.

Motivation for Travel

Pearce (1982) posited that an individual's travel motivation was dependent on the actual travel experience and that travel motivation changes with the individual's travel experience. "According to this framework - the travel career ladder (TCL) – the needs or motivations of travelers' are organized in a hierarchy and when tourists become more experienced they seek satisfaction of higher level needs. Many people have predictable travel motivational patterns but some may either jump straight to a higher level or remain at a particular ladder" (Hsu & Huang, 2008, p. 16-17.) The first time you travel you may choose a place and activities that make you feel safe. The second time you travel, as you become more comfortable, your need for safety diminishes and you are more motivated to explore. At the apex of one's travel career, one may opt for a trip that they never would have dared taking years earlier. Over the years the TCL framework has become more prominent because of globalization and a rising middle class that has accounted for more accessible travel for a greater number of people. Furthermore, an increase of travel to dark tourism sites is another indication of increased travel. Dark tourism can serve as a meaningful apex for many people's travel careers not only because many of these sites are dangerous, but because they satisfy a traveler's desire for meaningful experiences. Chernobyl is a good example of an apex because of its inherent danger from radiation exposure and its ability to connect the tourist to a fusion of tragedy, hope, and self-awareness.

While dark tourism theory posits that the primary motivation for tourists visiting dark tourism sites is to link the living with the dead, empirical evidence suggests that the motivations are much more complex. Biran et al (2011) surveyed visitors to Auschwitz, the epitome of European dark heritage sites, to ask about the motivations for their visit. Surprisingly, an “interest in death” was the least important reason for their visit. Tourists motives were varied and included “a desire to learn and understand the history presented, a sense of “see it to believe it’, and “interest in having an emotional heritage experience.” The findings suggest that visits to dark tourism sites should be viewed more through the lens of heritage experience than through thanatourism.

Today’s most experienced traveler also seeks that which is authentic. Because tourism managers have become increasingly more clever, finding the ‘authentic’ has become increasingly more difficult. MacCannell (1973, 1976) states that although tourists demand authenticity, it has become difficult to distinguish between true authenticity and “staged” authenticity. Tourists today seek the non-contrived “backstage” experience.

Dark tourism lends itself well to the contemporary tourists’ inclination for authentic travel experiences. Dark tourist sites are connected to heritage and involve real death and disaster, which makes them difficult to manufacture. Further, the emotional experience for tourists visiting such sites is organic and authentic. According to Tarlow (2005) there are four basic emotions which are connected to a dark tourist's psychological state: insecurity, gratitude, humility and superiority (Niemella, 2010). While visiting a nuclear site, such as Chernobyl, one may feel insecure about their safety. When visiting a site, such as Gettysburg, Americans may feel gratitude towards the many soldiers who lost their lives to ensure freedom for all citizens.

The same battlefield could raise feelings of humility for those who feel like they haven't done enough for their country or who go against the principles established by such battles. Many battles sites are even part of national identity which can make the visitor have a proud feeling of "we" surviving against "them" and lead to feelings of superiority (Niemella, 2010).

In addition to a quest for authenticity, the traveler has become a searcher. This search includes finding oneself, willingness to know different cultures and to get to know an area's or country's "psychological aura, fauna and flora" (Niemella, 2010). Ashworth (2004) would describe it as a pilgrimage, search for identity, quest of knowledge, and a sense of social responsibility (i.e. 'Lest we forget,' 'Never again'). 'As individuals and societies, we need the past to construct and anchor our identities and to nurture a vision of the future...'" (Yuill, 2003, p. 103).

The quest for knowledge is particularly important for dark tourism sites such as Chernobyl. Large-scale tragedies such as the Chernobyl nuclear disaster leave many people, both directly and indirectly affected by the disaster, asking the question why. Why did this happen? Dark tourism sites can serve as a physical forum to better answer this question. This can be accomplished through education and a site's commitment to disseminating knowledge.

Two examples of dark tourism sites that successfully promote knowledge and educational opportunities are Pearl Harbor and the Oklahoma City National Memorial. Both sites serve as reminders of past mistakes that future generations can learn from. In the case of Pearl Harbor, one visitor acknowledged, 'If a visit to this memorial leaves visitors with a better understanding of why the attack took place and with the strong feeling that we must not let this happen again, then surely those entombed will not have died in vain'" (Yuill, 2003, p. 51). The Oklahoma City National Memorial serves to educate visitors about terrorist attacks. After visiting the site,

people will walk away with more knowledge about that particular event and also a more universal understanding of terrorism and its global effects. In a discussion on the renovation of a German concentration camp Baudrillard (1988) wrote that “forgetting the extermination is part of the extermination itself” (Baudrillard, 1988, p. 23). These dark sites, in particular, need to be managed for tourists to better understand the questions why, “to assure survivors that victims did not suffer alone, and that their deaths meant something more...” (Foote, 1997, p. 81).

In the chapters that follow, I invite the reader to join my own search for identity and quest for knowledge during my tour of Chernobyl and the Exclusionary Zone. In doing so my hope is that the reader will discover and experience the universal value and heritage in Chernobyl.

CHAPTER 4

METHODOLOGY

They've written dozens of books. Fat volumes, with commentaries. But the event is still beyond any philosophical description. Someone said to me, or maybe I read it, that the problem with Chernobyl presents itself first of all as a problem of self-understanding.

(Sobolev, 2006)

When I weighed which is the best research strategy to explore Chernobyl's "outstanding universal value," I decided on autoethnography. What better way to explore and communicate the impact of this dark heritage site than from the perspective of the existential tourist? Cohen defines the existential tourist as one who "lives in two worlds, the 'world of the everyday', which is devoid of meaning and where he lives in exile, and the world of the trip, where he is his real self." Brown (2013) calls for research into the pivotal moments of vision experienced by tourists during a trip. Autoethnography, the telling of an interpretative personal story that weaves connections between experience and theory, offers insights into the transformative power of these personal experiences.

The act of telling a personal story is a way of giving voice to experiences that are shrouded in secrecy. By finding words to express these experiences and share them with others, we "attempt to lift the interior facts of bodily sentience out of the inarticulate pre-language of 'cries and whispers' into the realm of shared objectification" (Scarry, 1985,

p. 11). By making intricate details of one's life accessible to others in public discourse, personal narratives bridge the dominions of public and private life. Telling a personal story becomes a social process for making lived experience understandable and meaningful (Ellis, 2009, p. 197).

Carolyn Ellis identifies four interrelated historical trends that contributed to the formation of autoethnography: (1) Recognition of the limits of scientific knowledge and growing appreciation for qualitative research; (2) a heightened concern about the ethics and politics of research; (3) a greater recognition of and appreciation for narrative, the literary and aesthetic, emotions and the body; and (4) the increased importance of social identities and identity politics (Ellis, 2013, p. 25-26). She outlines three principal characteristics of autoethnography. First, that an "autoethnography uses the researcher's experiences as primary data. Second, that autoethnography intends to expand the understanding of social phenomena. And third, that the autoethnographic processes can vary and result in different writing products" (Ellis, 2013, p. 108).

As autoethnographers we write about what we see and what we feel. We draw on our autobiographic data. This is one of the principal benefits of autoethnographic research. We are allowed exclusive access to data unavailable to others. Having had the privilege of visiting Chernobyl, I have an obligation to make this important experience available. "Accessing and utilizing personal data enables autoethnography to make distinctive contributions to the understanding of human experiences within socio-cultural contexts" (Ellis, 2013, p. 108).

Sharing the experience of touring a dangerous place of tragedy, can help reshape the meanings of Chernobyl and protect its importance to humanity for future generations by combating the social

and cultural perceptions that marginalize its value. Further, the reasons for employing an autoethnographic approach go beyond the telling of personal stories. In telling our stories we set the stage for weaving intricate connections among life and art, experience and theory, evocation and explanation (Stinson, 2009).

A qualitative research approach allows the researcher to study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them (Denzin and Lincoln, 2005, p. 3). Choosing a qualitative methodology such as autoethnography is not an indictment of the quality of quantitative research. “Quantitative research offers an understanding of the overarching facets of social life. It is good at providing a snapshot of widely held beliefs, commonly practiced behaviors, and underlying cultural values. In sum, quantitative research is useful to us because it focuses on generalized knowledge based on data gathered from large numbers of people” (Ellis, 2013, p. 26). In the case of my study, to unearth the particularities that contribute to value of Chernobyl as a universal heritage site, I required a methodology that would allow me to not only understand the historical, cultural, and scientific aspects of this dark site, but also to understand how my own perceptions and experiences are shaped by who I am.

All work, qualitative and quantitative, is subjective. The concept of the objective researcher is an academic fallacy. Even in strict quantitative studies, the researcher has been guided, often unknowingly, by a personal history. For example, a researcher studying the objective health effects of alcoholism among former residents of Chernobyl carries with them distinct personal experiences that put them in the position to research that exact topic at that exact moment in time. Those reasons are numerous, but affect the work in a silent interplay of social, cultural and personal grounds. Autoethnography emerged to account for this role of

personal experience in research, to help illustrate why the personal is important in our understanding of cultural life, and to more fully articulate the complex research and decision-making processes researchers engage in in the conduct of their work” (Ellis, 2013, p. 33). For example, it makes a difference whether or not the aforementioned Chernobyl researcher has been affected by alcoholism. However, this does not mean that an autoethnographic approach is the only measure for such a study; rather it snubs objectivity in favor of embracing the capriciousness of academic inquiry in the hope of producing the most truthful and meaningful results.

Before deciding on the autoethnographic approach, I first considered conducting interviews with key stakeholders. Our Institutional Review Board agreed to this approach only on condition that the identities of the interviewees be kept confidential. Separating the story from the storyteller would have made the work meaningless. Autoethnography grew, in part, out of the rising concerns for the interests of research subjects such as these. These emergent research ethics focused on reconciling the risks presented to those people and places being researched. In a place like Chernobyl, the possibility of marginalizing the social, political and cultural effects of an incredible disaster are a serious concern. A quantitative explanation for the inherent value in a disaster site, proved less ethically appropriate than making myself and my experience the subject of the research.

In choosing autoethnography I became the storyteller. Denzin (2010) states that this world can never really be captured directly. What we study and attempt to capture are only representations. They are “crystallized secretions of once living human experience.” (Turner 1982a, p. 17; Madison, 2005, p. 151) “Once an experience presses forward from the field of the mundane, it moves to expression ... no longer a personal reality, but a shared one” (Madison,

2005, p. 151). And these experiences can be shared in many ways: performances, stories, rituals, myths, songs, memoirs, and autobiography. Ethnography takes the position that human behavior and the ways in which people construct and make meanings of their worlds and their lives are highly variable and locally specific. The product of ethnography is an interpretive story. In autoethnography, the researcher is the subject. Researchers have begun to recognize the credibility and value for stories because of the restraints that accompany quantitative research such as the inability to ask or have answered the sensitive social, political, or emotional questions. For example, how could a study of death and dying dismiss or disguise the physical experience and embodiment of experience of a dying person and that person's close others and still offer insight to these processes" (Ellis, 1995; Trujillo & Vande Berg, 2008)? How could a person study speech anxiety without ever having embodied such anxiety (Pelias, 1997)? In the case of Chernobyl, how do people see and experience the universal value in a site of death and destruction without ever seeing and experiencing it for themselves? As an autoethnographic storyteller, I can bridge these methodological gaps.

An ethnographer has a duty to "penetrate borders and break through the confines in defense of –the voices and experiences of subjects whose stories are otherwise restrained and out of reach. This means the critical ethnographer contributes to emancipatory knowledge and discourses of social justice" (Madison, 2005, p. 5). As autoethnographers we must work to identify the "systems that shape, constrict, disrupt, inform both the story and the storyteller in autoethnography" (Pathack, 2010, p. 8).

Science is a magnificent force, but it is not a teacher of morals. It can perfect machinery, but it adds no moral restraints to protect society from the misuse of the machine. It can also build gigantic intellectual ships, but it constructs no moral rudders for the control of

storm tossed human vessel. It not only fails to supply the spiritual element needed but some of its unproven hypotheses rob the ship of its compass and thus endangers its cargo (William Jennings Bryant).

Beyond telling a story, an autoethnographer has a greater purpose: disrupt the norms, utilize personal data, work through emotions, break silence, and ensure sure work is accessible (Ellis, 2013).

Working through our subjective and personal experiences allows us the opportunity to dig deeper and investigate the more proscribed, but important, topics of research. For example the quantitative study on alcoholism may provide important information to health organizations and governments, but may miss the more elaborate reasoning behind that increase. Further, in recognizing and inserting the personal into that story, the researcher widens their audience and allows for the betterment of not only the research subjects but also for those who become positively affected, by the more qualitative nuances which create a deeper personal connection to the writing. “As autoethnographers we see an explicit and intentional directedness toward others, either through the offering of insight that might help those who relate to a person’s experience or in a desire for others to bear witness to particular struggles” (Ellis, 2013, p. 33). In our investigation of taboo, and often painful, research topics we carry the burden and hope of bettering the world we live in. We publish and perform our work with the purpose of sharing our stories and providing what Burke (1974) calls the “equipment for living”, so that these stories are not only read but processed and carried beyond the stated goals of our work. In reenacting a tour of Chernobyl I not only aim to satisfy the reader’s generic curiosity of this place, but rather hope to provide them with a story they share, carry and reenact in their personal and professional lives.

Autoethnographers take Denzin's "call to arms" and become the rudders that morally and ethically steer future academic research. "The goal is to provoke change, to create texts that play across gender and race, utopian texts that involve readers and audiences in this passion, moving them to action" (Denzin, 2010, p. 115). In bringing my story to the reader, I attempt to show the universal value in this dark tourism site. My hope is that the reader will recognize Chernobyl's universal value as place that represents tragedy, depicts the strength of humanity, and warns of our world's nuclear future. Moreover, it can show that forcefully evacuating residents, burying towns, and constructing a sarcophagus is not a solution to the problems associated with nuclear power. As qualitative researchers we have "an obligation to change the world, to engage in ethical work that makes a positive difference" (Denzin, 2010, p. 115). I want the readers of my work to understand the smallest things can make the greatest impact: the atom, which is split to create a nuclear explosion, is submicroscopic.

In my study on Chernobyl, I am the data. I will relive and communicate my experience, and the emotions and insights I incurred while touring Chernobyl and the many dark spots within the Exclusionary Zone. The supporting data includes my own heritage, my family's work in Ukraine, my photos from inside the City, the street art in Pripjat, and my conversations with the tour guide. By telling my story and recreating my experience of touring Chernobyl, I am able to fashion an itinerary for the reader that helps them to investigate and appreciate the value of this dark tourism site one stop at a time.

I aim to break the silence surrounding Chernobyl's radioactive heritage. Chernobyl's heritage has been buried by the commercialization of this dark tourism site through mediums such as film and video games. Furthermore, the insensitive marginalization of the disaster's victims has occurred at both extremes: downplaying the health consequences of this tragedy on

one end to portraying the residents of Pripyat as zombies on the other. In this and “many other autoethnographic works, (we) write through silence and (re)claim the voices of subverted and subjugated experience” (Ellis, 2013, p. 36).

Finally one of the most important goals of an autoethnographic approach is accessibility. If nobody reads the work than it can't make a difference. “We all want social justice. Many of us want to influence social policy. All of us – positivists, postpositivists, poststructuralists, posthumanists, feminists, queer theorists, social workers, nurses, sociologists, educators, and anthropologists – share this common commitment” (Denzin, 2010, p. 42). I want the reader to see and experience Chernobyl and uncover the universal value in this radioactive place of death and destruction. To do so, this work needs to be accessible. I want everyone to be able to read it, because I'm revealing a universal quality in a place few people have visited. By revealing Chernobyl's universal value, I am beginning the process of its designation as world heritage site. By telling my story, I am hoping to make a difference.

CHAPTER 5

RESULTS

The Existential Tourist

And finding myself is what I am doing. I use this river as a bridge between two landscapes: the plains of the Midwest and the mountains of Montana and Wyoming. And on this bridge I look in two directions at the same time. I see two reflections: my father on the one side, my grandfather on the other. And in this moment, as these two reflections come together, I see myself more clearly than ever before.

(Denzin, 2010, p. 194)

I am no ordinary tourist. My visit to Chernobyl is not simply a cognitive experience – it is an emotional experience, shaped by who I am. If the reader of my story seeks to find meaning from my interpretation of this experience, than the storyteller is as important as the story.

I am the grandson of political immigrants who fled Ukraine during World War II.

“We had to leave,” my grandmother told me years ago. “There was nothing there for us. The Nazis were coming from the West and the Soviets from the East. We were stuck in the middle.”

“Why did you come to Champaign?” I asked her.

“Your grandfather was offered a position in the University’s forestry department. He worked in Mumford Hall.”

In my office, a few blocks from Mumford Hall, I have a framed receipt from when he spent \$2.50 for a room at the Park Hotel in Beardstown, Kentucky while on a trip evaluating a “brushing poisoning experiment.” The house they rented, described to me by my grandmother as a “typical Midwest house,” is no longer standing. It was torn down years ago to make room for a bank parking lot. In 1950 my father was born and they shortly thereafter moved to Chicago when my grandmother was accepted into a medical residency program.

My father followed in his father’s footsteps and also became a faculty member at the University of Illinois. He is a Professor of Public Health and has spent the past decade studying the health effects of the Chernobyl accident. For his work on Chernobyl, he received commendations from the White House and from the Ministry of Emergency Situations of Ukraine.

Today I am a doctoral student at the same University where my grandfather taught over sixty years ago. I completed my Masters degree in Russian and Eastern European Studies under a FLAS fellowship and am now pursuing a doctor of philosophy in cultural tourism. Both my father and I are studying Chernobyl, albeit it from different perspectives.

My first trip to Ukraine was with my grandparents fifteen years ago. I spent a summer traveling the entirety of Ukraine learning about where my grandparents came from and by extension: who I was. The highlight was seeing both homes (still standing) where they were raised. It offered me an insight into who they were: an insight that could only come from standing in those doorways. That first trip with my grandparents shaped me, more than any book or class, as a traveler and tourism scholar. Ever since I have searched for those doorways, or as MacCanell (1973) writes, for the authentic in human experience.

I have become the existential tourist. “In common sense terms, existential authenticity denotes a special state of Being in which one is true to oneself, and acts as a counterdose to the loss of ‘true self’ in public roles and public spheres in modern Western society” (Berger, 1973). Like with Turner and Manning, I find that “authenticity is only possible once the taken-for-granted world and the security it offers are called into question. This is dependent on a specific mood – anxiety – which, in subjecting everydayness to questioning, reveals the groundlessness of human existence” (1988, p. 137). Very few places I have ever visited have completely stripped me and blanketed me in such anxiety. And it is these places, these moments, and these stories that I seek. These are the world’s most valuable places. These are places that need to be visited and experienced. And I set forth to question whether or not such outstanding universal value can be discovered through an individual’s search for authenticity – an authenticity I found in one of the darkest site in the world, standing on the roof of the Pripyat Hotel.

The hotel was standing but severely run down. We wanted to reach the roof to get a better view of the city.

“I can see it from here,” he told me.

“No, Give me your hand. We’ve come a long way.” I grabbed his hand and hoisted my father to the roof.

“That would never pass an inspection,” I told him. The fire escape was rusted over and the corrosion at the point of contact with the side of the building slid the stairs back and forth. It wasn’t safe to climb, but we had indeed come a long way. The roof gave us a complete panorama of the city. Reactor Four was in the background, and the vastness of Chernobyl’s Exclusionary Zone was on full display.

“What do you think?” my father asked as we looked out together.

“I think it’s great,” I told him hoping he knew I meant thank you.

I found myself in Chernobyl. My heritage and my career converged to fill a space and tell a story in a place where stories have been silenced and spaces hollowed out. The experience of visiting dark sites creates spaces for the tourist to step into, and for a moment better understand themselves and broadcast personal mysteries that untangle themselves in these dark places. These are educational spaces where tourist not only learn about a site, but also about themselves. Neumann (1992) writes that “travel often provides situations and contexts where people confront alternative possibilities for belonging to the world and others that differ from everyday life. Indeed, part of the promise of travel is to live and know the self in other ways” (1992, p. 183). In the end, deciding to make Chernobyl the subject of my research was not only an easy decision, it was the only decision. This was my story.

Sketches from the Deathbed

At the morgue they said, “Want to see what we’ll dress him in?” I do! They dressed him up in formal wear, with his service cap. They couldn’t get his shoes on him because his feet had swelled up. They had to cut up the formal wear too, because they couldn’t get it on him, there wasn’t a whole body to put it on. It was all – wounds. The last two days in the hospital – I’d lift his arm, and meanwhile the bone is shaking, just sort of dangling, the body has gone away from it. Pieces of his lungs, of his liver, were coming out of his mouth. He was choking on his internal organs. I’d wrap my hand in a bandage and put

it in his mouth, take out all that stuff. It's impossible to talk about. It's impossible to write about. And even to live through. It was all mine.

My love. They couldn't get a single pair of shoes to fit him. They buried him barefoot.

(Ignatenko, 2006)

The Ukrainian National Chernobyl Museum is located in the Podil district of Kyiv on Khoryv Lane off of Kontractova Ploscha. It is difficult to find and there is no public parking. When asking for directions when exiting the Kontractova Ploshcha metro station, Kyivans will zig zag there hand and say “look for the building with the emergency vehicles.” The museum was founded with funds from the national and city governments and also relies on private and foreign donations. It occupies an early 20th century building that formerly housed a fire brigade. The mission of the museum is to “Help the mankind understand the scope of the disaster through the destinies of thousands of those people who witnessed the accident, participated in the mitigation and suffered from the disaster. The aim is to make people realize the necessary of reconciliation between man, science, and technology that endanger the existence of the human civilization and Earth, to conceive the lessons of the tragedy in all the spheres of life, lest the world forget the lessons of Chernobyl. The museum is warning for the new millennia generations.” The museum comprises three showrooms in an area of 100 sq meters and houses a collection of visual media, artifacts, and scale models of the reactor. The number of exhibits expanded from 700 in 1992 to over 7,000 today.

The museum aims to go beyond the technical aspects of the tragedy and to relay the human stories behind the tragedy. A symbolic display of road signs slashed with a diagonal

stripe, as one would find when exiting a town, symbolize the many villages that were evacuated as a result of the accident. I later learned that this display is a recreation of a similar display, the “path of displaced villages,” in the town of Chernobyl. I was struck in retrospect on how museum displays such as this are often three degrees of freedom removed from the actual event, e.g. the actual sign that you are leaving the abandoned village of Kopachi on the road leading to the reactor; the copy of this sign on the “path of displaced villages in the town of Chernobyl;” and the symbolic representation of this sign, now with the colors changed to black, white, and pink, in the Chernobyl museum.

A unique feature of the museum is the electronic database called “The book of remembrance of those who participated in the liquidation of the consequences of the accident at the Chernobyl nuclear power station.” This project, which began in 1997, aims to archive the names and roles of the hundreds of thousands of participation in the efforts to contain the disaster.

“The ‘Memory Book’ gives an opportunity to comprehend the extent of man-caused radio-ecological disaster through the destinies of thousands different in occupations people – civil and military, who are witnesses and participants, heroes and victims at the same time.”

By turning over her ‘pages’ you could find the names of your parents and grandparents, brothers and sisters, look into their eyes and find out what they do in the dangerous zone, in which events did they take part, what was the radiation dose that they got, and how did the state appreciated their victory over the radiation, how did their fortunes form.

The “Memory Book” has collected the stories of over 5,000 liquidators. The 595,000 other stories remain as yet unrecorded.

While the photos, replicas, soundtracks, and simulations attempt to bring the visitor into the moment, the most evocative feature of the museum is its collection and display of “Chernobyl art.” Some pieces are on permanent display while others, like photojournalistic tours and paintings, are time-limited exhibitions. While wandering the museum, I was struck by one exhibit, that I will refer to as “sketches from the death bed” that best captures the museums goal of preserving the memory of Chernobyl through the stories of its victims and heroes through the medium of art.

The sketches are drawn with a black pen on lined loose-leaf paper. The first depicts a control room on the inside of the reactor. There are four people in the room. All four are wearing helmets and face masks. There is an arrow in the upper right corner pointing to a pile, with a caption detailing the radioactive levels and labeling it as dangerous. All four people in this room are named by the artist, who was likely their coworker. In the bottom left corner there is a much darker picture. Workers are standing in shin high water. The worker in the front of the sketch is throwing up. The scene likely depicts the decontamination process that was occurring for the emergency response workers following the accident. They are vomiting from radiation exposure and submerging themselves in water to rid themselves of all radioactive particles.

The next set of sketches depicts another control room. The date reads the 26th of April, 1986. The time is 9:20 am. These workers are also wearing masks and helmets. The caption reads that they continued to work following the disaster. 9:20 am is roughly seven hours after the initial explosion. These working conditions were extremely dangerous. The adjoining

sketch depicts the inside of a hospital room. There is a man, who has lost his hair and looks ill, lying in a bed. The caption indicates that he was a “boss,” of some sort. The caption further reads that he is “having trouble breathing, he can’t sleep at night and his legs are burning.”

From the content of the images, it is apparent that the artist was on the scene at the time of the accident, was decontaminated, and in a dispensary. It is unknown whether he lived or died. Death from acute radiation syndrome is a slow death. The radiation destroys the rapidly dividing cells in the body, which include those in the gastrointestinal tract, bone marrow, and skin. The initial symptoms may include nausea and vomiting, especially if the doses are high enough to destroy the gastrointestinal tract. Nausea within hours of exposure is an ominous sign as most such cases have sustained lethal doses of radiation. Lower doses can still be fatal. The rapidly dividing bone marrow is most susceptible to destruction by radiation. Other than skin burns, for the first week or two the patient may be asymptomatic. During this time their white blood cell count is dropping precipitously. They may begin losing their hair. As the white cell count drops, they become prone to infection and are put into reverse isolation to protect them from the people around them. It is a slow, deliberate march to death and the person has time to reflect – or as in the case of this artist, to draw. Death usually occurs 3 to 4 weeks after exposure. Heroic attempts to save these victims through bone marrow transplantation failed to the last patient.

The sketches from the deathbed provoke complex emotions: sadness, anger, compassion. How could I see art in horror?

Theodore Adorno famously wrote that “writing poetry after Auschwitz is barbaric.” Still, art and tragedy have always been connected. Art is often a byproduct of an emotional response.

That response can be triggered through human suffering and tragedy. Furthermore, art is a way of reconciling the collage of emotions that clouds our understanding of tragic events. The development of art therapy, as a medical and academic discipline, has helped contradict Adorno's claims. "One of the strange things about tragedy, as an art-form, is what philosophers have called the paradox of tragedy: this is the fact that tragedies, like Sophocles' Theban Plays or Romeo and Juliet, are stories about great human suffering and catastrophe, to which audiences respond with emotions such as fear, pity and sadness, which raises the questions of why we intentionally seek out these works and why we enjoy them." Human beings strive to be happy, yet are willing to freely expose themselves to art that can disrupt that very happiness. One reason for this could be our need for resolution. A story should have morals: it should have a beginning, middle and an end, or denouement. When a tragedy occurs, such as Chernobyl, we learn to understand the technical reasons for it happening, and the subsequent efforts taken to minimize the effects. Still, we are left with the most important element: the denouement. The resolution can take many forms, but one of the most powerful is found in the arts. Our emotional connection to a work of art makes us ask the question Why? Art is important in tragedy because while it may not provide the answers to the why, it helps us ask the difficult, and often ignored, questions. In exploring these questions, and resolving the story, we can step back from the whole of the tragedy and begin learn from our mistakes both individually and collectively.

The Road

Our battered suitcases were piled on the sidewalk again; we had longer ways to go. But no matter, the road is life.

(Kerouac, 1957, p. 212)

The road to Chernobyl is straight and long. It passes through forests, swamps and dairy country. Twenty-five years ago the cows in these fields had eaten contaminated grass and concentrated radioactive iodine in their milk. The milk was sold by adults and ingested by children. Chernobyl is 133 kilometers north of Kyiv, the capital of Ukraine. The trip takes two hours depending on the traffic and how fast you drive. We were equipped with a white Volkswagen van and a professional driver. The van was roughly ten years old but in good condition. The trip there would take two and a half hours.

We were running late. We fell behind schedule because I did not have a hat to wear. Our driver insisted that I would not be let in without one. The reason was to prevent radioactive particles from getting into your hair. I took him at his word, and we were forced to stop at a store along the road to buy one. It was still early in the morning and the store was closed. I became anxious and wanted to keep driving. "There are no more stores down the road," he said. So we were stuck waiting in this empty lot just outside the city center.

Our driver stepped out of the van and lit a cigarette. I followed him. He breathed deeply and the butt lit up his face. I could see he was a serious man. I ran my fingers through my hair and looked up at the moon. "Don't worry," he said. "This store has hats." I didn't care about the hat. I was worried about the time.

Thirty minutes later a light turned on in the front of the store. “It’s open,” he said. I ran to the glass doors. They wouldn’t open. I saw a middle aged woman walking the aisles with a clipboard. I knocked on the door and startled her. She looked at me briefly and put up five fingers with her right hand. I looked back towards the van. The driver was on his cell phone. I motioned over to my father to join me.

I heard a knock. It was the woman from the store instructing me to move away from the door. The doors opened and she mumbled something in Ukrainian. I asked about hats and she pointed upstairs. I ran up the escalator and grabbed the first hat I saw. It was navy blue with a white logo in the bottom right corner. It had a Velcro enclosure in the back. I quickly paid, put on the hat and ran back towards the van. The hat was big for my head, and the driver chuckled when he saw me. We got back inside the van, and were back on the road. We were forty minutes behind schedule.

I was impressed with how smooth the road was. My previous trips had led me to believe that Ukraine has especially poor roads. I had even investigated this notion when researching the potential for bike tourism for my work with a Ukrainian investment firm. I was relieved something had turned in our favor.

The sun was now beginning to rise and the forest to our left slowly awoke. I could see now that the road was lined with acres of pine forests. What struck me was how they were planted. As we drove past I relaxed my eyes and the rows of dirt and trees slowly began to separate themselves into perfect rows. It reminded me of corn. Before I could ask about why these trees were so carefully planted, the car began to slow. I saw the red brake lights of cars up ahead in the distance.

“Traffic”? I asked in disbelief.

“Accident,” I was told.

As we slowly drove forward I could see that the accident was not blocking the road but that the traffic was a result of every car ahead slowing down to see the details. People always seem to have a morbid interest in seeing what happened. I pressed my face up into the window to get a better look. The perfect rows of trees slowly tangled into the periphery as I looked onto the wreck.

The car was a light brown sedan, and it was heavily damaged in the front. A police car, with its lights on but siren off, was parked ten yards ahead. In between the two cars the officers stood over the body of a man. His face and the upper half of his torso were covered with a dirty green towel. The man was wearing black and white Adidas shorts and leather sandals popular in Ukraine. My cousin had given me a similar pair on my first trip here fifteen years earlier. Looking closely at the skin of the man’s legs, I suspect he was in his thirties. Not much older than me.

The gate blocking the road into Chernobyl has two signs. The first sign is white and has the word “Stop” written in capital letters with the corresponding Ukrainian written underneath. The second sign is yellow and has the word “Danger” in capital letters with the corresponding Ukrainian. The gate itself is a piece of metal painted white and red. It would be easy to walk around if not for the guards.

“Passport!” I wasn’t paying attention and the officer was irritated. He was dressed in a camouflage outfit with a badge that read “MBC.”

“Passport, now!” I handed him my passport and he reviewed it quickly. I could see him put a check by my name on a list he was reviewing on a clipboard. I knew they expected me but I was still impressed with their organization. He wasn’t simply peeling a stub to confirm I had paid admission. This was certainly no movie. This was a dangerous place that only a select group of travelers had entered before. It necessitated this degree of formality, and I was happy to oblige.

The process of obtaining official permission to enter the Exclusion Zone was onerous. In 2011 Ukraine’s Ministry of Emergency Situations had opened the Exclusion Zone to tourism, but it was just as quickly shut down on June 22 for unexplained reasons. Rumors were that tourists were apprehended stealing radioactive materials from the Zone. At \$180 per person per tour, the new tourism trade had the potential to generate millions of dollars. The Ministry said that the revenue could help fund industrial projects within the contaminated area, such as repairs to the crumbling sarcophagus. The general prosecutor’s office said the money did not go to repairs and in fact could not be traced (<http://borderland-chronicles.com/ukraine-bans-tourism-to-chernobyl-zone>). At the time of my visit, the case was still under review by the Kiev District Administrative Court.

Visits to the Zone by outsiders were still permitted for “scientific work.” My father, who is an International Member of the Ukrainian Academy of Medical Sciences, appealed to the Academy for permission to undertake a scientific visit. His request was legitimate because his Data Management Center in Kyiv was doing the data management for the bi-national U.S.-Ukraine study on thyroid cancer in children following the Chernobyl accident. The Academy indicated that a request would need to be submitted to “Chornobylinterinform, the State Enterprise Agency of Information, International Cooperation, and Development, which would

take a minimum of ten days to process. A Ukrainian radiation health effects scientist would need to accompany us to ensure the scientific validity of the visit. The request was approved and even signed and stamped by the Minister himself.

After the guard determined that our papers were in order, he instructed us to proceed to the administrative building of “Chernobylinform” in the town of Chernobyl a few kilometers ahead. He opened the gate by hand and allowed to proceed. I noticed our speed slowed considerably once we passed the gate. I did not see any speed limit signs, and wonder if our driver had done this for effect. Once you pass the gate and drive into the Zone you immediately recognize this is a protected space. First, there are no other cars. Second, it’s completely quiet. Not a peaceful quite, but an unnatural silence that feels forced. Imagine asking a young child to be quiet, versus putting your hand over their mouth to ensure they don’t make a sound.

We slowly drove up the road and a desolate town quietly began to reveal itself through the dense foliage. I first noticed the chimneys poking through the trees. As we pressed further the houses became more frequent and we soon drove into the center of a moderately sized town. We were in Chernobyl. The driver pulled up to an old, two-story, Soviet-style building. The sign read “Chernobylinform: State Enterprise Agency of Information, International Cooperation and Development.” He turned off the engine. “We’re here.”

I got out of the van, stretched my legs, and was immediately greeted by our guide who appeared to be a member of the military. He was much younger than I thought he would be. He was tall, with a slim build and had light sandy hair. He was about my age. He wore a camouflage shirt and pants, with black boots laced up to his knees. As he approached I could see he was three to four inches taller than me. He threw away his half-smoked cigarette,

outstretched his hand and welcomed me to Chernobyl. I liked him immediately. He escorted me to the second floor of the old grey building and instructed me to wait in the conference room. The room was ten feet by fifteen feet. There was a big wooden table in the middle that was actually several smaller tables pushed together. Wooden chairs lined the walls. Above them hung faded pictures and maps of reactor four and the surrounding exclusionary zone. In the corner there was an old television set. I don't think it worked. The room reminded me of my Ukrainian school in Chicago. From preschool through high school I attended a Ukrainian school that taught language, culture, art and history. The school met each Saturday during the regular school year and I grew up envying my American friends who were able to sleep in and watch cartoons. I walked towards the windows to look outside, but before I reached them the door behind me opened.

It had only been a few minutes, but it was long enough for me to know that I could have waited much longer. I don't believe he wanted to do this as much as it was the common practice. He first asked me what language he should speak. My choices were English, Ukrainian or Russian. I instinctively chose Ukrainian. I wanted to impress him, and for a moment those Saturday mornings were more prideful than regretful. He then gave me a briefing on radiation and a waiver to sign that would release "Chornobylinform" from any liability associated with our visit.

Our guide held a long wooden pointer as if he were going to give us a lecture. When he learned of the nature of our visit, he shortened the educational part of his speech and proceeded directly to safety. He recited a long list of "don'ts." "Do not proceed to any area without supervision...Do not pick anything up...Do not take off your hat..." He then proudly produced a hand-held, real-time, gamma-ray dosimeter to demonstrate that we would be aware of the

radiation flux during every moment of our visit. The yellow dosimeter, that was marked “Ekotest” in Cyrillic with a registered trademark, showed a current reading of 0.13 $\mu\text{Sv/h}$. It also had an audio alarm if the measured radiation levels were too high.

Most of the radionuclides in the Zone are contained in the sarcophagus (nuclear fuel) or are buried in numerous waste dumps throughout the site. Environmental surface contamination is common throughout the site because it is physically impossible to thoroughly decontaminate an area of this size. As radioactive materials disintegrate, they emit rays (gamma rays) and radioactive particles (alpha, beta, and neutrons). Radiation dosimeters are designed to measure the amounts of radiation per unit time that are emitted by these radioactive materials. We live in a sea of radiation from background sources such as cosmic rays that are continuously bombarding the earth. Average background radiation levels around the globe are about 0.3 $\mu\text{Sv/h}$. Our guide had been demonstrating the radiation levels in the “Chernobylinform” administrative building were in the range of background. Besides the concentrated radiation sources in the sarcophagus, buried waste dumps, and “red forest,” the environmental contamination is unevenly dispersed throughout the Zone with numerous radiation “hot spots.” Since radiation is invisible, the only way to detect entry into a dangerous radiation field is through the use of dosimeters. The unpredictability of exposures adds to the adrenaline rush experienced during a Chernobyl tour. The guide handed me the dosimeter and told me that I would be responsible for monitoring my own radiation levels. This made me nervous. I asked him to show me how it worked a second time. He was happy to oblige, and for the first time since I began my journey I was scared.

When we came outside we saw that the driver had fallen asleep leaning up against the front of the van. He awoke from the sounds of our approach, and quickly rose to full attention.

He did this begrudgingly. He then hurried around the front of the van to open the doors, but the guide let him know that we would first do some walking. The driver pretended to know this and said he thought I might want some water. I declined, which I immediately regretted, and then recanted. “Actually, I would really like some water,” I said. He reached in the van and handed me a new bottle. “Thanks,” I said with a slight smile. He had helped me with the hats, and now we were even.

We walked just a few blocks through the town until we reached an empty field with a military tank. The tank was clearly not operational and had been sitting there for many years. As we got closer the dosimeter began to beep. The closer we got to the tank the faster it beeped. I stopped ten feet from the tank’s large caliber main gun, but the guide continued on. When he reached the tank he bent over and put his Geiger counter near the wheels oblivious to the beeping warning. “There are radioactive particles in here. This is what you came for,” he proudly proclaimed. At this point the beeps had culminated into a very noticeable and continued warning sound. This suddenly made the entire trip very real. I couldn’t believe he was standing there. He asked if I wanted to come closer. “I’m ok,” I said. I would later learn that he had volunteered to be stationed in Chernobyl. When I asked him why, he told me it was because he was recently married.

“Does your wife live near here?” I asked.

“No, but this way we get to spend more time together.” He told me that the personnel inside the Zone have a mandatory two weeks off every month. This was a precautionary measure to limit the amount of prolonged radiation exposure. The added benefit was having the opportunity to spend more time with her.

“Always better to be close to home,” I said sounding like my mother.

He laughed and got up to his feet. He pulled out a cigarette, lit it and put his hand on my shoulder. “Always good to be close to your woman,” he said.

We walked a few blocks north of the tank and came up to another open space the size of a soccer field. In the middle ran a pathway that was lined on both sides with black and white road signs. The signs were waist high and in alphabetical order. Each sign had one name written in black. The guide told me they stood for each town evacuated as a result of the Chernobyl Disaster.

“How many?” I asked.

“One hundred and eighty eight,” he told me.

“We are going to one next.”

I asked him what town. He told me that it was called Kopachi. We walked back to the van. The driver opened the doors, I took a drink of water and we got back on the road.

A Doll in the Forest

“A sometimes think: what is the purpose of our expedition? The windows are broken in that house, the floor is covered in snow, and you trample through the zone and look – and there, beneath the ice you see scattered pictures of people, who used to live in that house. And you renew your image of your Nation, you uncover it beneath the snow. We were somehow give three photographs from the village of Kopachi: this is seven kilometers from Chernobyl, not thirty, not ten, this is the epicenter. The man who gave us those photographs said that his relative had climbed a tree and photographed the village when it was still alive, before the catastrophe. And thereby, in this Ukrainian Home, through these three photos you begin to imagine the names of the streets and who

lived there. This is the virtual resurrection of Ukraine, this tragic work – this is “extreme ethnography.”

(Kostenko, 2006)

Kopachi was a small village located 7 kilometers from the epicenter of the disaster. According to archives from the Kyiv Oblast administration of the Ukrainian SSR, Kopachi was home to the “Ukraina” collective farm that encompassed 3,200 hectares. The village had a cultural building, a library, and a grammar school through 8th grade. Seventy-eight of the residents had received medals for the valor during the Great Patriotic War. The village had a monument to the “unknown soldier.” Archaeologists had uncovered evidence of prehistoric settlers. The name Kopachi means the “diggers.”

On September 29, 1966, the Cabinet of Ministers of the USSR ordered the development of a 10-year plan for the development of nuclear energy using RBMK reactors. A proposed nuclear power station for the southern portion of the Soviet Union should be designed to provide power to a population of 53 million. The most economical approach was to locate such a station, which was originally called the Central-Ukraine nuclear power station, within an epicenter with a radius of 350-450 km. Soviet and Ukrainian institutes identified 16 potential sites. The village of Kopachi in Kyiv Oblast was selected as the ideal site due its proximity to water supplies, road and rail transport, and low productivity of the displaced agricultural land. The plan to give up agricultural land was approved by the “Ukraina” collective farm. Planning for the construction of the reactor complex began in 1966 and first reactor came online in 1974.

The 1114 residents were evacuated on May 3, 1986, one week after the explosion. As an experiment in radiation containment the town was bulldozed and buried under the ground. Someone passing by, who didn't know of its existence, could easily confuse the mounds for a natural hillside. The name of the town of Kopachi, a village that is itself buried under the ground, is tragically ironic.

Our van pulled over to the side of the road only a few miles from where we had been parked in the town of Chernobyl. The place we stopped looked no different than any other section of the road. It was not a natural place to stop, and there was no indication that the town of Kopachi was nearby. "*This can't be it,*" I thought to myself. We got out of the van, and the guide started walking into the brush. I had a difficult time holding the dosimeter, camera and bottle of water. I turned back for the van and quickly put my bottle of water on the back seat. The driver looked at me. I felt compelled to take a long sip before placing it back on the seat and running back into the woods. There was no official path that we were following. There wasn't even an unofficial path that had been matted into the wilderness by previous tourists. We were simply walking into a forest. The shade from the trees felt great. It was still early morning but it was hot under the hat and the clothes.

The forest was lush and green and I kept my head up, keenly searching for signs of this buried town. Thirty yards into the brush I stopped. There was something bright shining up ahead and sticking out of the forest floor. I hurried forward to see what it was. As I approached I saw the skeleton of an old fence overgrown and falling over. Looking over my right shoulder I realized that I had missed seeing the fence ten yards back. I took off my hat and rubbed my eyes in an effort to cool down and wake myself up.

The fence was at one time painted an aqua green, but now had camouflaged itself perfectly into the dense forest. The fence however, was not what I was looking for. As I continued forward I saw the piece of tan plastic that had reflected the sunlight and first caught my eye. Looking more closely I could see small fingers, and a hand the size of an American quarter. It was a child's doll: dirty, naked and covered in leaves. Looking around the forest floor I uncovered a second doll, and a toy truck. The truck was a rusted yellow and may have been a school bus or a tractor. The second doll had strangely bright grey hair. The color must have faded over time, and she looked like an old woman. The toys had been here for years, and were likely dropped in the rush of evacuation. Time had gotten the best of them. The truck next to the dolls led me to imagine that they belonged to a brother and sister who were playing outside together.

“Do you have any siblings?” I asked the guide.

“I do, I have a brother. He does construction work in Poland. I only see him once a year. What about you?” he asked.

“I have a brother too,” and as I began to tell him more we found ourselves at the door of a small house. I learned the faded aqua green fence was actually part of an old kindergarten. These toys may have indeed belonged to siblings, but they more likely belonged to young classmates.

You wouldn't know it was there unless you were looking for it. The building, like the fence, was at one time painted a bright color. It was small, aged and I couldn't help but think of a witch's house in the woods. I was careful in my approach to the doorway. The building was

standing, but it's lack of maintenance for the past quarter century was evident. I lowered my head and stepped inside.

To my immediate left there was a row of lockers. They were empty and the doors were missing. I walked up to them. "The work of bandits," the guide said behind me, answering the question before I could ask.

The second room of the building was filled with bunk beds. These were also looted. There were no mattresses, and only a few blankets had been left that were now covered in a layer of dust two inches thick. The beds were made of metal and had rusted over. They were small and clearly made for children. They stood five feet from the ground, and the length would accommodate a small child no older than seven in my estimation. They reminded me of spent shotgun casings scattered on a floor. They were nothing more than a reminder of something terrible that had happened here. I spent very little time there, and moved to the next room.

The floor of the third room was covered in papers. I couldn't imagine anything other than a tornado so thoroughly covering the floor. Looking down at my feet I could see that the papers were a collage of art projects and homework assignments. It was impossible not to step on the work, and I felt a ting of guilt with each step forward into the room. The room had an easel displaying a poster. The poster showed a mother waiting at a stoplight with three young children. She is looking down at the children with her hand raised in the air. The oversized light to her left is yellow. She is instructing them to wait until the light turns red to cross the street. The irony felt deliberate and I suspect it had been carefully staged for me. I took a few pictures. "It's time to go," the guide said as he motioned towards the door. I was happy to leave.

The lost village of Kopachi is among the most moving spots on a visit to the Exclusion Zone. The story of the history of the village of Kopachi is indeed extreme ethnography. From its archaeological digs, to its patriotic heroes, to its collective farm agreeing to the dictate to give up its lands, to its present day ruin – the only traceable archives are the minutes of the meetings of the village council from 1946 to 1982 that have been transferred to the archives of the Ivankiv District Administration. The stories of its inhabitants have been lost—scattered throughout the former Soviet Union through forced displacement.

“Where are we heading next?” I asked our guide.

“Pripyat,” he said with a smile, and we slowly made our way back through the woods towards the road where the van was parked. When we got back to the van the driver was missing and the doors were locked.

“Bandits,” I said jokingly to the guide.

He laughed and a moment later our driver emerged from the brush. He pulled up his zipper and opened the van. We were back on the road.

I was here

“The basic principle of graffiti is often to simply say, ‘I was here.’”

(Anonymous)

We were back in the van and headed for Pripyat. I was excited. The photos you see in the news of Chernobyl are typically from this city. It is Kopachi on a grand scale – a modern

city of fifty thousand people built for the workers and families of the Chernobyl Nuclear Power Plant. Today it is completely abandoned and frozen in time: a Soviet Pompeii.

It was mid afternoon now and getting warmer. I took a drink of water, leaned back in the seat and rested my eyes. A few minutes later we stopped again. “*That was quick,*” I thought to myself. “*I must have fallen asleep.*” I looked out the window and saw that we had pulled into a main square. The square was bigger than I expected. I reminded myself that it was big enough for twelve hundred buses to pull in and evacuate fifty thousand people. We got out of the van and I stretched my legs. Before we start walking the guide tells me to be careful not to step on the moss. “It will stick to the bottoms of your shoes,” he tells me. I look down at my shoes and decide to retie my laces to make sure they don’t hit the ground.

As I tied my shoes I laughed and thought about how at twenty-eight years of age I could only tie my shoelaces one way. I take each string individually, cross them, tighten, form two loops and tie them together. Most people I know create one loop and somehow fashion this into a proper tie. I tried this on my second shoe. It didn’t work. I tied the way I knew how and looked over everyone’s shoes, from my crouched position, to determine how they had tied them. The driver’s boots were facing me directly, and I looked up at his face. As our eyes met he shook his head and lit another cigarette. Embarrassed, I rose to my feet and began taking pictures.

I took only a few pictures of the square. I felt the driver watching me. Each picture I took captured the moment, and I didn’t feel the need to take more, nor did I want to appear overly enthusiastic to the guide about how well these digital, post apocalyptic photos were

turning out. I snapped one more of a young sapling breaking through the cement and moved on. I was excited to get inside a building.

Our guide described the first building we entered as the equivalent of a town hall. “This was the heart of the city,” he said. “Look at the floors.” The parquet- patterned floors, which ran the length of the building, were intricate and beautiful. They were evidence of a better time, a time when this building was important. Today as I take pictures I can’t help but think about the effort it took for the looters to rip out the pieces one by one. The looters had attempted to pull up a section of the floor, but looked to have abandoned halfway through. It was likely too much work to rip up hundreds of individually-placed pieces of parquet floor. I closed my eyes and imagined what they looked like years ago in their entirety.

“You don’t see floors like this anymore,” I tell the guide.

“Chicago has big skyscrapers, this is nothing,” he notes.

But to me they were special. They were indicative of people who had mastered a craft and had taken great pride in their work. “Maybe one hundred years ago in Chicago, but not today,” I replied. He smiled and we moved onto an auditorium. After the auditorium we visited a swimming pool, a ferris wheel, and a gymnasium before making our way into a school.

It’s later in the afternoon. The sun is coming through the windows at a lower angle, blocked partially by the leaves of trees. It’s hot: thirty-two degrees Celsius to be exact. I leave a classroom and walk out into the hallway. I turn right and walk fifty steps. The large tiles on the floor are cracked, and I pay careful attention to where I step. Halfway down the hall I turn left into a new room. This room is different than all the others in the school. It’s difficult to see because it’s dark, but the room feels eerie, and it’s clear that it’s bigger. Twice, maybe three

times bigger. Not as big as an auditorium, but more similar to my grade school homeroom: a room big enough for five “classfulls” of kids. A room we used for our tornado drills. I think back to my time at Willard Elementary: being nervous because English was my second language, my friends, the pledge of allegiance. Once a month we would do safety drills. I look around the room, and recall my teacher’s voice. “Everyone be quiet. Calmly get under your desk and put your hands over your head.”

But there is no desk to hide under here. There is only one small table. The table is three feet high and a foot wide. A table similar to those used to showcase important books or encyclopedias. On top sits a dark mask carefully placed next to a sign in Russian that reads “no war.” It is a gas mask. I recognize it because I had worn one on Halloween when I was younger. After adjusting to the light I look more carefully around the room. It is filled with masks. Just like the one on the table.

There must be a thousand masks. They remind me of leaves that have accumulated on the forest floor, and packed tightly together between the pines where no one seems to walk for fear of being pricked. But this room is more jungle, damp and dark, than autumn forest. These masks are a military green. They look uncomfortable to wear. They are metal and rubber and feel violent. These masks are made for war, not for homeroom drills or Halloween. The wind blows through the broken panes of glass and a dark heat comes down the center of my chest. The guide tells me the windows that were not vandalized were broken intentionally to limit radiation build up in enclosed spaces. I step back into the hallway, take a deep breath and slowly let the cool air enter my lungs.

The GP-5 gas mask (Russian: Гражданский Противогаз-5, tr. Grazhdanskii Protivogaz-5) is a Soviet-made single-filter gas mask. It was issued to the Soviet population starting in 1970; production ended in 1989. It is a lightweight mask, weighing 1.09 kg (2.42 lbs). It can operate in all weather and withstand temperatures from -40 degrees (Celsius and Fahrenheit) to 114 °C (237 °F) (174 Fahrenheit). The GP-5 also comes with sealed glass eye pieces. They were originally made to protect the wearer from radioactive fallout during the Cold War and were distributed to most fallout shelters.

I step back into the dark warm room to take a picture. The camera flashes. The bright light forces the pieces of metal not rusted and covered in dust to light up the room. The small flashes of reflecting light look like an animals eyes in the dark. Not like your grandmother's cat, but a hungry animal pushed into a corner, hair raised on its back, not wanting to fight, but willing.

This is not my homeroom. I wasn't getting a star to tape up to my locker for guessing how many jellybeans were in the jar. Fifteen thousand if I had to guess. Fifteen thousand gas masks piled to the level of my shins. The bell won't ring for recess, and hundreds of kids won't come rushing past me anxious to find their spots at the lunch table. I miss that time ... my friends ... September, and the start of school. I wish I never wore that mask for Halloween. "Shhh. Nick, be quite and get under your desk." I feel a tap on my shoulder and I jump forward. "Didn't mean to scare you," said the guide. "But we have to keep moving."

We left the school, and I was relieved to be back outside.

"We are heading to the grocery store," the guide said.

“Sounds good.” The thought made me hungry and we began to carefully make our way towards a cluster of empty apartments buildings fifty yards away. As we turn a bare corner of an apartment building, I drop my camera. I bend down to pick it up and make sure no moss has stuck to it. As I stand back up, I can hardly believe me eyes.

There is a girl sitting on a red ball. I had one just like it when I was younger. She’s laughing and her hair is blowing in the wind. The red of the ball was especially striking because the colors in the city were mostly green and the grey of concrete. The girl looked like she was seven or eight years old. She is waiting just outside the store.

Following the sudden evacuation of Pripjat, artists from Germany and Belarus illegally entered and painted this Soviet ghost town with their graffiti. Today, their work has unexpectedly become a highlight for tourists visiting Chernobyl and the surrounding Exclusionary Zone. Many scholars and tourists alike argue whether or not this graffiti is art or vandalism. George C. Stowers wrote that “based on aesthetic criteria, graffiti has to be considered an art form.” In fact graffiti has slowly gained recognition among the art community elite, and graffiti art has been shown in various galleries in New York and London. This acknowledgement from the art community has further helped in legitimizing graffiti as real art, and as a result its pervasiveness has increased in countries such as Ukraine.

“She’s not real,” the guide said with a smile.

I knew she wasn’t real, but she was still the only other person I had seen today who wasn’t part of our tour.

“Her brother,” the guide said pointing behind me to another apartment building. I turned around and there he was. He was wearing a bright yellow shirt. He is younger than her;

maybe five or six. He is facing her and has an open hand with his thumb up against his nose and his tongue sticking out. He's teasing her, just as brothers and sisters do all around the world.

"Do you have graffiti in Chicago?" the guide asked me.

"Yeah, we have a lot," I replied.

According to an anonymous Memphis graffiti artist, "the basic principle of graffiti is often to simply say, 'I was here.' This is traditionally done in the form of a tag. A graffiti tag is an artist's personal signature. It is the most common form of graffiti. It is often removed, and considered defacement, because the art is done without the owners consent, the owners being those who own the building wall that the work is completed on. In the United States this is a punishable crime. Other forms of graffiti are an artist's attempt to comment on the social and political conditions affecting their community. These communities, by and large, are poorer and less privileged.

"Do you like hip-hop?" the guide asked.

"I like some. When were these painted?" I asked him.

"A few years ago. Do you like them?"

I did. I felt that they needed to be there. When walking the site, the absence of people and children playing was uncomfortable. When I first saw the brother and sister I was startled, but was happy to see her smiling and him teasing her. It was a natural scene. It's what you would have seen here on a normal day before the evacuation. The art makes the tour more personal and relatable. It's important that someone gives voice to the children who were

evacuated from their homes and likely had no idea what was happening to them. The art lets tourists know that they were here.

“Are you ready to see the reactor now?” the guide asked. I was, and he began walking towards the van.

“The radiation is higher there, we can’t stay very long,” he said as we said goodbye to Pripjat.

The Sarcophagus

There is something about a closet that makes a skeleton terribly restless.

(Wilson Mizner)

It was late in the day, and we were reaching the end of our tour. Everything had led us to this place. We were at the foot of the reactor. The excitement of exploring the forest and abandoned buildings was now replaced with a moment of introspection. Our guide who remained talkative and upbeat throughout the tour stood quietly next to me. He took off his hat. “We lost many men here,” he whispered. I didn’t ask how many. I took off my hat to pay my respects. “Don’t leave it off too long,” he told me. I put my hat back on and walked proudly and respectfully towards the reactor. I stopped at the foot of the statue commemorating the lost heroes. I wanted a picture with my father. I walked toward the van to get my camera and the driver met me halfway. He had the camera in his hand. “Let me take it,” he said.

I have that photo on my office desk. When my students come to my office hours they always ask me who that is in the picture with me. They never believe me at first when I tell them. There are two reasons for this. First, my father looks young for his age. I hope I have inherited those genes, though most people who know my family tell me I look most like my mother; which is the second reason. My father has dark hair and a darker complexion than me. He looks just like my grandfather and younger brother. My grandmother told me their darker features are a result of the Tatar hordes that came through Ukraine centuries ago. I'm not sure if I believe that or not. After close examination most students tell me they see the resemblance. I like to hear that, and I agree with them. When you look past the obvious genetic indicators, there is something more there. "One, two three," the driver snaps the picture.

A small monument, dedicated on November 30, 2006, stands in front of the barbed-wire enclosure that prevents visitors from getting too near to the reactor. The monument depicts a pair of hands that are sheltering the reactor and reads "To heroes, professionals, to those who protected the world from nuclear disaster." The reactor itself is a factory-like structure, twenty-four stories high that is encased in a tomb of concrete blocks called the "sarcophagus." The sarcophagus was hastily built over a period of a few months in 1986 under extremely severe radiological conditions to isolate the destroyed unit from the environment. Currently more than 150 tons of partially dispersed spent fuel is contained in the structure. The current inventory of this radioactive material is about 5.2×10^5 TBq (Likhtarev I. Worker health and safety issues reinforcing the entombment of the Chernobyl reactor. *Health Physics*. 93(5): 480-486, 2007).

Design work on the sarcophagus began on May 20, 1986 and construction lasted for 206 days. The work was dangerous and heroic. Coal miners were brought in to dig a tunnel below the reactor in order to build a cooling slab that would prevent the nuclear fuel from burning

through the floor of the reactor and reaching groundwater. The remaining structures were built over the ruins of the damaged reactor and included erection of reinforced concrete perimeter walls that used 400,000 m³ tons of concrete and 7,300 tons of metal framework. The radiation flux inside the reactor was as high as 10,000 R per hour and reinforcement of the structure with bolts and welding had to be performed by robots, as these radiation doses would be lethal to humans. In 1988 Soviet authorities estimated that the sarcophagus would last 20-30 years before needing replacement. In 1998 funding from the European Bank for Reconstruction and Development helped to keep the roof beams from collapsing. The fix was temporary and the government of newly independent Ukraine sought additional international funding for a permanent solution. In his address to Parliament in 2011, Prime Minister Azarov stated that “Despite the difficult economic situation Ukraine during the past 20 years is financing the costs of relief efforts by itself. The share of expenses for these purposes in difference years reached 10 percent of total expenditures of the State Budget of Ukraine.” These relief efforts include compensation, known as the “coffin subsidy” paid to Chernobyl victims. (Environment News Service. 25th Chernobyl Anniversary prompts vows of safety, security. <http://www.ens-newswire.com/ens/apr2011/2011-04-26-01.html>).

Beyond the concrete, steel, and barbed wire are the untold stories of countless heroes. Much like the emergency response to 911 in the United States, the first responders to the Chernobyl accident, in the early morning hours of April 26, 1986, rushed into a burning inferno. 600 workers were onsite during the early morning of April 26, 1986. 134 received very high doses and suffered from acute radiation sickness. Scores of heroic firemen and first responders put their lives in danger by battling the fire in Reactor Number 4 in the early morning hours. Thirty-two people died from burns, heart attack, and radiation sickness. A total of 237 suffered

severe radiation injuries. In addition to the two operators, most of the dead included firemen and construction workers working on reactor Number 5. The dead also included a physician and paramedic who received high doses while helping the firemen (National Geographic, May 1987). Several were posthumously awarded “Hero of the Soviet Union” and Order for Courage of the third degree.

The sarcophagus embodies the debate over the safety of nuclear power. Some argue that nuclear power represents one of society’s greatest technological failures (MacGill et al, 2006). For one, it did not live up to its early promises of being “too cheap to meter.” Instead, it has a military heritage and has been a vehicle for proliferation of nuclear weapons. It has also created a legacy of dangerous waste for future generations to manage.

The military heritage of nuclear power began with the Manhattan Project that led to the bombs dropped on Hiroshima and Nagasaki. J. Robert Oppenheimer, physicist the science director of the Manhattan Project said in a speech in 1946:

“We have made a most terrible weapon, that has altered abruptly and profoundly the nature of the world. We have made a thing that, by all standard...is an evil thing. And by doing so...we have raised again the question of whether science is good...whether it is good to learn about the world...to give to the world...increased insight and increased power. Because we are scientists, we must say “yes” to these questions...that knowledge is good in itself and such power as must come with it.”

Soviet RBMK reactors were designed not only to provide electric power for civilian use, but also to produce plutonium for nuclear weapons. Civilian and military nuclear technologies

share materials, technology, and know how. Ironically and tragically, the Chernobyl accident released 600 times more radioactive fallout than the bomb dropped on Hiroshima.

The nuclear fuel cycle generates radioactive wastes that have very long time frames of risk, and the nuclear industry has a history of poor practices in managing these wastes. Many radioactive wastes are stored on-site at nuclear power plants resulting in concerns over safety and terrorism. Even in the United States, there is as yet no long-term solution (e.g. debate over Yucca Mountain). The Exclusion Zone is now a de facto radioactive waste storage site.

Safety is another obvious concern. Nuclear power stations must maintain “controlled nuclear fission” balanced between extinguishment and uncontrolled criticality. The accidents at Three Mile Island in 1979, Chernobyl in 1986, and Fukushima in 2011 highlight the dangers to the surrounding population. While many of the risks can be managed through better design (e.g. water vs graphite as a moderator and external containment), Fukushima demonstrated that even reactors that have been emergently shut down can continue to pose grave danger. In the case of Fukushima, a shut down reactor still generates large amounts of heat that need to be dissipated. If water cannot be delivered to cool the reactor due to a loss of power (loss of coolant accident), then the reactor can overheat and explode from both steam and ignited hydrogen (generated from an interaction of water with the zirconium cladding of the fuel cells).

Defenders of nuclear power argue that the cost and risks of nuclear power need to be compared to those of other energy sources. The problem of energy poverty affects 1.5 billion people around the globe and the shortage of energy will undoubtedly worsen. Over the next 50 years, energy production from fossil fuels will contribute to global warming through the generation of green house gas emissions – hundreds of billions of tons of carbon in the form of

carbon monoxide. In the long-term, supplies of fossil fuels are limited and peak oil (the point in time when the maximum rate of petroleum extraction is reached and the rate of production enters a terminal decline) may only be a few decades away. Alternative energy sources such as solar, wind, and geothermal are unlikely to produce enough energy to replace that lost by fossil fuels, so nuclear power may be the only answer.

Supporters also argue that despite Chernobyl and Fukushima, new third-generation plants are inherently safer. Even so there are questions about the availability of supplies of uranium to fuel these reactors. Proponents argue that these concerns can be addressed through fourth-generation plants that use a closed-fuel cycle. Conventional thermal reactors operate on a “once through” mode in which discharged spent fuel is sent directly to disposal. Reactors with closed fuel cycles extend fuel supplies by separating plutonium from spent fuel and generating a mixed plutonium-uranium fuel for another pass through the reactor.

The isolation of plutonium again raises the issue of proliferation of nuclear weapons. Proponents of nuclear power argue that the Non-Proliferation Treaty, originally negotiated in 1968, has been effective in preventing many countries from joining the nuclear weapons club. It has been signed by all but three nations, India, Israel, and Pakistan; North Korea withdrew from the treaty in 2003. Possession of nuclear weapons gives nations political power, and as recent events in Iran demonstrate, even nations who claim to be developing nuclear power for peacetime use may have a hidden military agenda.

If you seek an education on the pros and cons of nuclear power, Chernobyl is the place to find it.

The Largest Moving Object on Earth

Corruption is worse than prostitution. The latter might endanger the morals of an individual, the former invariably endangers the morals of the entire country.

(Karl Kraus)

Where's the New Safe Containment?" I asked the guide.

"Over there," he said pointing to an empty field.

One hundred and eighty meters west of the reactor sits a construction site, fenced in by barbed wire and guarded by surveillance cameras. A sign marked "Novarka" identifies the international consortium that won the bid to construct a more permanent containment for the imperiled reactor. Other than the guards, there is little evidence of activity. Construction was scheduled to begin seven years before but had stalled due to lack of funds.

One week before the 25th anniversary of the Chernobyl accident, at the Kyiv Nuclear Safety Summit, governments from around the world pledged \$785 million for mitigation efforts, bringing the total raised for Chernobyl safety works from world governments to \$1.8 billion. These pledges were prompted in part by the Fukushima accident that occurred on March 11, 2011 one month before. The plan is to construct a 30,000-ton steel, arch-shaped structure, similar in appearance to a giant Quonset hut, that would be built a few kilometers away and wheeled over the reactor on a system of giant rail tracks. The structure would be 100 m high, 250 wide, and 150 long. It would be the largest moving structure in the world. If all goes according to plan, the structure, known as the "New Safe Confinement," would be completed by 2015.

Much of the money that had been raised prior to the Kyiv Nuclear Safety Summit had already been used up. International authorities expressed concern over the lack of transparency in the use of funds. An audit conducted by the Accounting Chamber of Ukraine with international co-auditors concluded that there was a 7-year delay in implementation of the Shelter Implementation Plan and that the new cost for construction of shelter was 58.3% higher than originally planned. The auditors also concluded that the activities of the European Bank for Reconstruction and Development, which administrates the Chernobyl Shelter Funds were not open and transparent enough and recommended that an independent audit institution, outside the Chernobyl management structure, undertake an independent review (http://www.environmental-auditing.org/Portals/0/AuditFiles/Ukraine_joint_s_eng_ChernobylShelterFund.pdf). At the time of my visit the construction site was surrounded by rows of barbed wire and surveillance cameras. Vladimir Chuprov, a nuclear expert with Greenpeace Russia, was quoted in Spiegel as saying “It’s becoming something of an international sport to blow as much money as possible on Chernobyl”. (Bidder B, Beyond the Sarcophagus: the overwhelming challenge of containing Chernobyl. Spiegel Online International. April 26, 2011).

“Are they ever going to build it,” I asked the guide.

“I hope so,” he told me.

The dosimeter began to beep. “C’mon, we need to go. Do you want to see the catfish?”

“What catfish?” I asked.

He laughed. “People always want to see the famous catfish.” We headed back for the van and the guide told me to grab a piece of bread.

Evolution on Steroids

“The international community should explore with the governments concerned the possibilities for promoting specialized ecological tourism and for maximizing the contribution that these areas can make to the preservation of international diversity. Little attempt had been made to exploit the reduction of human disturbance to the ecosystems and cultural landscape in a positive way and the current national plans for biodiversity protection and cultural preservation hardly refer to this potential. The [Chernobyl-contaminated] territories could be used to fulfill the three countries’ international obligations to the protection of biodiversity.

(UNDP and UNICEF, 2002)

I took a few pieces of dark rye bread that our guide had given me and headed for the bank. I broke off a small piece no bigger than my thumb and threw it into the cooling pond. Three to four seconds later and the bread was gone ... swallowed up by something, but I did not get a good look. I left the bank and headed for the bridge.

The bridge that spanned the cooling pond was fifteen feet above the water. I broke off another piece of rye bread and threw it down into the water. Another three to four seconds and it was swallowed. But this time I saw the culprit: it was in fact a catfish, though not as big as I was told. I called over to my father to join me on the bridge. I gave him a few pieces of bread, and we both began to throw pieces down into the pond. I threw some larger pieces to try and attract the bigger fish.

Our collective throws created a feeding frenzy. Within a minute the two to three large fish that were first attracted to our bread were lost in an entire school of catfish. The school violently hit the surface of the water to get at the bread. Their commotion attracted even more fish and soon there were too many to count. The big ones must have slowly made their way up from the bottom of the pond to the surface. The stories of river monsters were true. These bottom dwellers were enormous. They easily weighed in at over one hundred pounds.

When I told my friends back home about the giant catfish, they laughed and jokingly asked if any of the fish had two heads. It was a question I was asked more often than not. I tell them that the wildlife in the zone looks normal. Even more than that, it's thriving. It was a paradox as a tourist to Chernobyl. You arrive expecting to see environmental destruction but are instead startled by the environmental resurgence. The destruction you see when touring the zone is of the human environment. Nature has prevailed.

How can an Exclusion Zone, that was predicted to be an ecological wasteland for a millennium, now be thriving with wildlife? Some 100 species that were on the International Union for Conservation of Nature's Red List of threatened species can now be found in the evacuated zone. About 40 of these, including bears and wolves, were rarely seen in the zone before the accident (Nature, August 2005; Chernobyl ecosystems 'remarkably healthy', (www.nature.com/news/2005/050808)). Rare species, such as lynx, Przewalski's horses, and eagle owls now inhabit the Exclusion Zone. In terms of plant life, even the red forest that was named after its radiation-burned pine trees is now a green forest full of birch trees.

While the answers are complex, the Exclusion Zone has provided a unique natural laboratory to study the effects of radiation exposure on ecosystems. Ecologist James Morris of

the University of South Carolina explains it as “evolution on steroids.”

(www.nature.com/news/2005/050808). While there is widespread evidence of DNA damage in many species, the most deleterious mutations seem to be very quickly weeded out, allowing the more robust survivors to thrive.

The radiation that fell on the plants and animals in the Exclusion Zone can be divided into two distinct phases: very high acute exposure (lethal and sublethal) that resulted mainly from short-lived isotopes and quickly dissipated over the first several months, and long-term, multigenerational, exposure to much lower doses. Approximately two thirds of the total dose is estimated to have been received during the acute phase.

The effects of the extremely high, acute doses were evident within two weeks of the accident, especially in the Red Forest where the pine needles yellowed and died. The absorbed dose to these pines exceeded 500 Gy (Geras'kin SA, et al, 2008). The deciduous trees, such as birch, were more resistant to the effects of radiation, and over time, displaced the pines that had once dominated the forest. Moreover, the exposures occurred in spring, while many organisms experience their spurt of new growth. Rapidly dividing cells are the most sensitive to the effects of radiation. Extensive studies on the pine trees demonstrated that the effects were dose-dependent, ranging from death of the plants at very high acute doses to effects on reproductive capacity, e.g. reduced number of seeds per cone, at lower doses.

The ecosystem effects of Chernobyl radiation have also been studied on a wide variety of animal species, especially invertebrates that comprises approximately 95% of all known species. The dwellers in forest litter were severely affected at a distance of 3-7 km from the reactor. Doses of about 30 Gy produced catastrophic declines in the populations of soil inhabitants, while

lower doses resulted in noticeable changes in population density. In the first year after the accident, these populations were very slow to recover, but the populations gradually increased largely due to migration of insects from surrounding, lower-dose, areas. The accident demonstrated that even if animal populations are acutely reduced due to radioactive fallout, as the radionuclides decay and exposure decreases, other animals will move in to replace them.

At the time of the accident, the cooling ponds surrounding the reactors had over 30 different fish species. These cooling ponds continue to be contaminated with radionuclides, especially radiocesium. Catfish from these cooling ponds have been found to exhibit greater genetic damage (DNA strand breaks) than catfish from unpolluted environments. While many young fish living in the reactor's cooling ponds are deformed, the adults tend to be healthy, implying that those harmed by radiation die young (www.nature.com/news/2005/050808).

Studies on small animals, such as mice and voles, showed that acutely, the numbers of animals living on highly contaminated plots had been reduced by a factor of 2 to 10. Yet by 1987, most of these populations had increased, largely due to inward migration from less contaminated areas. These small mammals also have a very high reproductive potential, and even though they may have a shortened life-span due to radiation exposure, their population density is maintained through reproduction.

The presence of larger predators, such as the bears and wolves that have been recently spotted in the Exclusion Zone, depend on a thriving population of smaller animals that in turn depend on maintenance of a healthy and functioning ecosystem. The evacuated zone, that covers more than 4000 square kilometers in Ukraine, Belarus, and Russia, is rapidly becoming known as a wildlife refuge.

The debate over whether the ecosystem effects have been devastating or “minimal” largely depends on who studied what and when (Baker RJ et al, Wildlife and Chernobyl: the scientific evidence for minimal impacts, Bulletin of the Atomic Scientists, April 14, 2011). The evidence for acute, high-dose effects on plant and animals is overwhelming. The evidence for protracted, long-term deleterious effects is mixed. The lessons from the Chernobyl regarding ecosystem effects of radiation include: 1) the effects are dose-dependent and the doses decline over time; 2) organisms differ in their susceptibility to radiation (e.g. pine trees vs birch trees); 3) the timing of exposure is an important determinant of effect (e.g. spring when plants are rapidly dividing); 4) radiation-induced mutations are more likely to result in death of younger animals, leaving the fittest to survive; 5) organisms can adapt to high radiation environments; 6) if animal populations are acutely reduced, the numbers will eventually replenish due to inward migration from less contaminated areas. Perhaps the greatest lesson of all is that man and his activities (farming, fishing, hunting, habitat destruction) appear to be more harmful to the surrounding ecosystem than radiation.

The rebound of the nature in the Exclusion Zone was apparent to experts from the United Nations Development Fund (UNDP) and UNICEF when they issued their 2002 Report “The Human Consequences of the Chernobyl Accident: A Strategy for Recovery.” One of their recommendations for economic recovery in the zone was to promote ecotourism. UNDP and UNICEF, Project 7, specifically called for conservation of the natural and cultural heritage of the affected areas:

The project would encourage long-term environmentally sustainable economic development in the affected territories by promoting unique features of the natural environment and culture of the area, develop the local capacity for natural resources management, and elaborate a plan for conservation of biodiversity and cultural assets through economically and socially sustainable measures as the developing of a network of reserves and the promotion of scientific tourism.

UN officials emphasized that it was time to stop viewing Chernobyl as a crisis zone and start helping it develop itself. UNDP Administrator Mark Malloch Brown was quoted as saying, “By continuing to treat (area needs) as emergency problems, we probably have exhausted the funding available ... A self sufficiency approach will be the next chapter.”

(http://health.phys.iit.edu/extended_archive/0202/msg00264.html).

Coming Full Circle

The phrase coming full circle is a very sacred phase and is a way to express uncovering of the very purposed and possibilities of my life generally and an academic life more specifically, having traversed the places and spaces of research, teaching and service work. Here, I want to explore, in a very intimate way, the meaning of these uncovering in shaping an academic life and career.

(Denzin, Lincoln, Smith, 2008, p. 290).

Looking out the window it was hard to believe the trip was coming to an end. I had waited so long to come here and, despite the threats of radiation, I didn't want to leave. This place, unlike any I had ever visited, defined who I was and who I wanted to be. I knew that in leaving, that heightened sense of self would begin to dissipate as I made my way back home and settled back into my routines. Telling this story helps to remind me.

Almost as if he could sense my reluctance to leave, the guide instructed the driver to pull off the road. "Let's stop there on the bridge," he told him.

"Why are we stopping?" I asked.

"I could use a cigarette," he told me with a wink. We had pulled over onto a bridge that crossed one of the many tributaries of the Pripyat River. Far in the distance was Reactor 4. You couldn't see the town of Pripyat or anything other than the sarcophagus. From here it looked normal. Actually, surrounded by nature and the flowing river, it looked ideal. This is what I imagine nuclear power defenders dream about: a safe and clean energy source that blends into nature.

I walked over with the guide and we rested our hands on the rails of the bridge. I looked down into the flowing water. "No catfish here," I told him.

"No, the water is too fast for them here," he said.

"So what will you do when you go home?" he asked.

"I'll go back to teaching," I told him.

"What will you tell your students about the famous Chernobyl?" he asked.

I thought it over for a moment. “I’ll tell them about you. About Natalia. I’ll tell them about Sergei, and how I don’t think he liked me.”

He stopped me. “He likes you fine,” he said laughing.

“I know,” I said laughing back. I looked out onto the reactor. “I’ll tell them about all the trees, the wildflowers, the bees, the sounds of birds. What about you?” I asked.

“I’m going home to Natalia in two days. I’ll tell her about you. You’re not like the other tourists who have come through here.”

I smiled and shook his hand. “Thank you, Mykola. I consider you a friend,” I said.

“And I you. Let me get your father.” He began to walk towards the van, stopped halfway and looked back at me. “Don’t forget to tell them about the catfish,” he said with his constant smile.

“I won’t,” I said smiling back.

My father walked over and met me on the bridge. He had dozed off on the ride back.

“Did he wake you?” I asked.

“No, just a little cat nap. You know he reminds me of you.”

“We get along really well,” I told him. “I hope we keep in touch.”

“You should. You are both trying to help. If my parents never left that could have been you. So what are you looking at over here?”

“Everything,” I told him. “I’m looking at everything.”

“It’s a lot to take in,” he told me.

“You know, I wanted to...”

He stopped me. “I know son. You know your grandfather would be very proud of you.”

My eyes watered, “I think he would be pretty proud of both of us,” I said.

“Hey guys let me take a picture,” the guide said walking over.

Before I could invite him in...my father interrupted. “We want you in the picture too,” my father said waving him over.

“You too Sergei,” he said.

“No, no driver,” he said waving his hands. “I want to take it,” he said. “One, two, three.” We headed back for the van.

After dropping our guide back in the town of Chernobyl, we had one last stop. The military personnel ushered us into a small building on the outskirts of the Zone. Inside there were two machines that looked like airport metal detectors.

“Take off your shoes,” the officer told us.

“Wow, just like O’hare (airport)” I said looking over at my father.

“Put your hands up and wait thirty seconds,” we were told. Surprisingly the machines didn’t make any sounds. “Ok, you two can go,” the officer said pointing to the exit. “Not you,” the officer said pointing to the driver. We walked outside and waited. Several minutes passed.

“You think he’s alright?” I asked my father.

“He’s our ride, so I hope so,” my father said.

Five minutes later the driver emerged from the building yelling something back at the officer. He looked at us impatiently. “Let’s go,” he said loudly.

I looked at my father and we both laughed. “Time to go home,” he said. “Back to Kiev at least,” I said as we got back into the van and back on the road.

“What about the animals?” one of my students asked.

“Nature has really prevailed there ... the trees, the wildflowers, the bees, the sounds of birds...and catfish. Really big catfish,” I said widening my hands to indicate their size. I could see I piqued their interest (three or four more questions about catfish). “Ok, we have time for one more question” I told them as I looked down at my watch.

“If you had to sum it up in one word to describe your experience, what would it be?” a student asked.

“That’s a really good question,” I told them. I close my eyes and images flash before me: pieces of dark rye bread soaking on the surface of the Pripyat River, a young official taking a bribe, a fire burning underneath tons of concrete, a small plastic hand reaching out from underneath the earth, a woman desperately trying to put shoes on her dead husband...gas masks...I take a deep breath and look onto my students. “When I first visited Chernobyl, I thought I was visiting this dark site of death, but that’s not what I found.” I closed my eyes, and more images flash before me: Mykola sitting around the dinner table with his wife, a brother and sister playing hide and seek, a flower breaking through a field of concrete, pine trees planted in perfect rows, Mumford Hall, a photo of my grandfather holding my father on the porch of a

‘typical Midwest house’... ‘in what language would you like me to conduct this tour today’?...I open me eyes.

“Heritage. Heritage is the one word I would use. Ok we are out of time, but next week we can talk more about that. We’ll talk about UNESCO World Heritage Sites, and I’ll make my case for Chernobyl. Have a good weekend guys.” The students shuffled out of the classroom as I erased the board. I finished, and grabbed my bag and headed for the door. “You were right about those catfish Mykola,” I said to myself laughing. I turned off the lights and shut the door.

CHAPTER 6

CONCLUSIONS

The research question raised in this study was whether or not Chernobyl has a universally valuable heritage, in the context of a dark tourism site that people would want to experience. Furthermore, does that value warrant UNESCO's attention and possible consideration for future enlistment on the World Heritage List? My findings indicate that Chernobyl does have a valuable heritage, and it is possible to extrapolate my individual experience, based on a value model derived from UNESCO's inclusion of both Auschwitz and Hiroshima, to a larger spectrum of potential visitors. My overarching conclusion is that Chernobyl should be considered in the future for enlistment on the World Heritage List.

The common indicators for universal value in dark tourism sites as outlined by UNESCO in their two exceptions are 1) a historic tragedy; 2) the expression of strength and hope for humanity; and 3) a symbol for change. Through the course of my tour, and autoethnographic account of this tour, I encountered all three of the aforementioned indicators. I weighed the strength of these indicators, both individually and collectively, against the tacit importance of Auschwitz and Hiroshima as heritage and tourism sites. I found Chernobyl comparable to both Auschwitz and Hiroshima as a dark tourism site with a universally important heritage.

The first indicator, based on my model, is the indication of a historic tragedy. Chernobyl is unquestionably historically important because it is the largest nuclear energy disaster in the history of the world. In comparison to Hiroshima, Chernobyl released six hundred times the amount of fallout and contaminated large swaths of Europe. Chernobyl, and later Fukushima,

taught us that nuclear reactor accidents are not simply national events – they are global events that can affect countries a thousand miles away. The response to such accidents is also international. Few countries have the economic resources to mitigate such accidents on their own. Twenty-seven years after the accident, the new containment for the damaged Reactor Number 4 is still not in place.

Chernobyl's importance as a nuclear disaster site is further amplified by contemporary energy costs and needs, which inescapably place it into the forefront of global conversations on nuclear safety and expansion. Defenders of nuclear power argue that the costs and risks of nuclear power need to be compared to those of other energy sources. Given the risks of global warming from the burning of fossil fuels and the rising energy needs over the next several decades, nuclear power may be the only answer to the problem of energy poverty. The new generation of nuclear reactors is inherently safer than the old Soviet RBMK reactors. Opponents counter these arguments by raising the risks of nuclear reactor accidents, as evidenced by the graphite-moderated Chernobyl reactor and the “safer” water-moderated Fukushima reactors. The problems of disposal of nuclear fuel waste have not been resolved. Nuclear energy also has a hidden military agenda. The proliferation of nuclear weapons poses an imminent threat to the future of the planet.

The more complex component of my argument is identifying the *universal* tragedy in the Chernobyl disaster. The Chernobyl accident has a relatively low death count when compared to Auschwitz and Hiroshima. Still, the universality of tragedy in Chernobyl was evident in many places along my tour. Human tragedies are measured in more than acute loss of life. The health consequences of Chernobyl accident have been undeniable. Those who died from acute radiation poisoning suffered a slow, lingering death. The highest risk group for long-term

consequences has been children – thousands of cases of very rare thyroid cancer among children began appearing four years after the accident and continue to this day. Many more children and adults are predicted to develop other radiation-induced cancers in the future. The psychological consequences, from radiophobia to the consequences of stigmatization and evacuation, eclipse the physical health effects.

The Chernobyl zone will remain contaminated for thousands of years. The permanence of the disaster makes it universally important. The buried village of Kopachi serves as a chilling reminder that hundreds of communities within Chernobyl's exclusionary zone were evacuated. As Lina Kostenko observed during her visit to Kopachi, not only the buildings themselves, but the ethnography of the people who lived there have been erased. Even more evident was the evacuation of the city of Pripyat. The evacuation of fifty thousand people, and subsequent abandonment of an adolescent city, because of invisible radiation threats is historically unique. Such large-scale evacuations have historically been associated with wars and natural disasters. And though measures can be taken to mitigate the future effects from Chernobyl's radiation fallout, Pripyat and the many surrounding communities will likely never be re-inhabited. The communities surrounding the Exclusion Zone have fallen into a vicious spiral of residual contamination, forced evacuation, and socio-economic collapse. The rebuilding of these communities will take generations.

The second indicator is the expression of strength and hope of humanity. The human stories of heroism and sacrifice foster belief in the strength of the human spirit and hope for a better future. Firstly, monuments remembering and honoring Chernobyl's initial emergency response workers showcase the strength of the human spirit. The monument in front of the sarcophagus depicts two hands sheltering the reactor with the inscription "To heroes,

professionals, to those who protected the world from nuclear disaster”. These men and women knowingly risked their lives for the preservation of others. In walking the site one garners a greater appreciation for the strength in their sacrifice. The memory of these heroes also provides hope for future generations. Humanity has proven, through Chernobyl, that the needs of the many outweigh the needs of the few. The efforts of the hundreds of thousands of liquidators who came from all over the Soviet Union to mitigate the effects of the disaster are apparent throughout the site – from the sarcophagus that was constructed under potentially lethal radiation fields to the numerous buried waste sites that contain radioactive waste and contaminated equipment. The Chernobyl museum’s project to create a Book of Remembrance commemorating the victims and heroes now includes the stories of over 5,000 liquidators and is trying to gather 595,000 more.

The third indicator is that the site stands as a symbol for change. This is arguably the most important indicator because it is closely connected to the previous two, and makes for the strongest argument for why these sites should be recognized and visited. Serving as a symbol for change, puts sites like Chernobyl into the global spectrum of humanity’s universality. The change encountered when experiencing Chernobyl is multifaceted and complex. Chernobyl, like Auschwitz and Hiroshima, provides a forum for self- examination. When visiting these sites we examine them historically, collectively and personally. We question our knowledge and beliefs about nuclear power and the military applications of the plutonium produced in these reactors. We question our knowledge and beliefs about radiation, and its effects on our health and environment. We also question our belief in our own infallibility and our arrogance in thinking that we can master the enormous power of the atom without adverse consequences. Chernobyl and Hiroshima expose the devastating effects of such power.

My autoethnographic inquiry into the question of Chernobyl's universal value revealed much that I had not expected: art, nature, and, most importantly, personal heritage.

The role of art in helping us understand and transcend tragedy was revealed in the sketches from the Chernobyl museum and from the graffiti that "defaced" much of Pripyat. The deeply moving sketches from the deathbed at the Chernobyl museum made experience, almost first hand, the horrors of the accident. While the sketches were disturbingly personal, the graffiti of Pripyat serves a social and political purpose. Much of the graffiti is intentionally graphic to make sure visitors grasp the horrific consequences of intense and prolonged radiation exposure. The most powerful graffiti in the city depicts innocent children. The art brings human life into a space that is desperate for it. As stated earlier, the principal purpose of graffiti is to let someone know you were there. The artists of Pripyat are giving voice to the evacuated residents who don't have the opportunity to do that for themselves. The illegal artwork throughout the city of Pripyat is a testament to humanity's unwillingness to forget the events, and more importantly the people, that compose the Chernobyl story.

Another unexpected finding was the resurgence and resilience of nature. My expectations of the scenery, fashioned largely by media and commercialization of the disaster, was of a dark and lifeless landscape. However, what I found was considerably different. First and foremost the color palette of the Chernobyl landscape is mostly green. Chernobyl's unexpected greenery is a direct result of nature's ability to re-grow and mature without human interference for a quarter century. This resurgence of nature, and absence of human development, has created a sanctuary for animals. When walking the site the presence of animal life, through sight and sound, was remarkable. A dark site saturated with so much literal life is one of Chernobyl's paradoxes. Even the United Nations Development program recommended

that the site be preserved as a natural sanctuary, and that eco-tourism to the Zone become part of the economic redevelopment of the region.

The most profound insight was that during my search for universal heritage, I discovered personal heritage. When I began this journey, I had no inclinations of examining myself. On the surface, I understood that Chernobyl was an important place with unearthed potential for tourism. The literature review provided a model for how dark tourism sites have been studied and evaluated. But after visiting Chernobyl it was clear that the site was more than a traditional dark tourism site as previous academics have outlined. Therefore, rather than focus on tourism development to Chernobyl, as a dark tourism site, I decided to explore Chernobyl's greater value and a consolidated meaning to its heritage.

As an American with Ukrainian roots, I discovered the complex ethnography of Ukraine, a place that many called home. I discovered how not only the Chernobyl accident, but also how war and ethnic rivalries had devastated the land. I had the wonderful experience of traveling with my father, a Chernobyl scientist, and saw how deeply he was impacted by the visit and how happy he was to share the experience with his son. I also felt a kinship with our young guide – I realized that were it not for my grandparents emigrating, I could have easily been him. As a Master of Arts in Russian and Eastern European Studies, I found a place where the Soviet Union and independent Ukraine overlapped. The Soviet Union was responsible for the disaster. Independent Ukraine was responsible for not doing more to redevelop these lands. I discovered that the legacy of power and corruption had not died with the Soviet Union.

The capacity of Chernobyl to prompt my personal search for identity and unearth my own heritage, within the confines of a tragic environment, emphasizes the importance of these places.

Tourism scholars have explored these dark sites and attempted to define their meanings and our motivations for visiting them. Dark sites such as Chernobyl, Auschwitz and Hiroshima provide more than what Stone (2012) identifies as “physical places linking the living and the dead that allows a cognitive space for the Self to construct contemporary ontological meanings of mortality.” My experience corroborated the findings of Biran et al (2011) that visitors to dark tourism sites seek an “emotional heritage experience” much more so than because they have an “interest in death.” My research shows that dark tourism sites rich with heritage, such as Chernobyl, allow tourists the liberty to firstly discover the Self. Therefore Chernobyl, like Auschwitz and Hiroshima, is more than a traditional dark tourism site. These are heritage sites with a Universal Value that create spaces for self-discovery and change.

As a researcher in cultural tourism, I also discovered the value of autoethnography as a research method. Exploring my work through autoethnography allowed me to confront the more meaningful and universally valuable questions that shaped my experience. Autoethnography allowed me to relieve my experience, bring voice to Chernobyl’s heritage, and make a difference in the best way I could.

Implications

The implications of my study are far reaching. Bringing the experience of touring Chernobyl to a larger audience through autoethnographic methodology will allow more people to experience its value. I conducted this research because I felt Chernobyl was overshadowed, on the global stage, by other tragedies. Further, I felt that a universal understanding of Chernobyl’s heritage had already been established as primarily a nuclear disaster site when in fact the site, and darker heritage sites like it, have proven that their value is much greater and deeper than the

tragedies that occurred there. I sought to give credence to Chernobyl's greater value while also further advancing the effectiveness of autoethnographic methodology, particularly in the academic discipline of tourism. This work should help bring new meaning to Chernobyl as more than a dark tourism site. Chernobyl, like Auschwitz and Hiroshima, is a heritage site with a greater value beyond death and tragedy.

Another implication could include a recharged interest in visiting the site. The Ministry of Emergency Affairs is again allowing guided tours to the site. It is estimated that over 20,000 people have participated in such tours within the past two years. Furthermore, with increased tourism to Chernobyl resulting in increased visibility and revenue, more pressure will be put on the government to complete the construction of the new containment for reactor four. Also, decisions need to be made regarding the preservation of the city of Pripjat. The city's buildings and infrastructure are deteriorating. An increased tourist presence, and recognition of value from the international community, should instigate a long-term plan for the management and development of Pripjat and other tourist highlights.

Also, by successfully employing autoethnographic methodology within the field of tourism, I am hopeful that future scholars from my field will follow in my footsteps. Autothenography is a methodology well suited for the field because it makes dark sites that can be difficult to visit, for varying reasons, accessible to a larger audience. An academic interest in identifying the greater value in dark sites could lead organizations such as UNESCO to more closely examine these sites. In addition, if more dark tourism sites are recognized as universally valuable, then UNESCO would be prompted to issue an official update to its criteria for determining Outstanding Universal Value. This would support my initial hypothesis that Chernobyl is in line with UNESCO's recognition of outstanding universal value and should

garner enough consideration from the global community to attract consideration for the World Heritage List. By nominating Chernobyl as a World Heritage Site, UNESCO can help in unifying what can be considered a radioactive heritage.

Designation of Chernobyl as a UNESCO heritage would pose strict international requirements on the Ukrainian government for preservation of the site and for making it conducive to large-scale tourism. Tourism needs to be properly managed and sites that accept a World Heritage designation have responsibilities to maintain their status. First and foremost, an application for World Heritage status must come from the “State Party;” for Chernobyl to be considered in the future for World Heritage designation, the Ukrainian Government must be in agreement of Chernobyl’s universal value and development plan. Consolidating Chernobyl’s heritage can be the first step in this process. Further, once a site obtains World Heritage Status, the Convention recommends that governments adopt a policy for future management. This can be an expensive and comprehensive undertaking. A primary roadblock in Chernobyl’s case would be Ukraine’s interpretation of Chernobyl in respect to their Soviet history. This can be politically complicated and dependent on which political party is in charge of the country. Another roadblock of Chernobyl is creating a standardized tour for visiting the site that is safe. My recommendation is to construct a boardwalk. The boardwalk can be built through areas that limit tourists’ exposure to radiation, and are far enough from the buildings in the event they begin to collapse.

The international recognition of Chernobyl’s universal heritage would transform its current global perception from that of a nuclear wasteland into an important lesson for mankind and a site that is worth visiting. In visiting and learning more about Chernobyl, tourists will not

only renew their awareness of nuclear disasters but will be inspired by Chernobyl's heroes, nature's resurgence and the transformative power of dark tourism sites.

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