

**Local Residents' Experience of the Coal Ash Spill in Kingston,
Tennessee: A Phenomenological Study**

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Abstract

On December 22, 2008, near Kingston, Tennessee, a Tennessee Valley Authority (TVA) retention pond holding approximately 1.7 million cubic yards of coal fly ash failed, spilling the ash into the nearby Emory River and inundating farms and homes in the Swan Pond community. As a result more than 100 people were permanently displaced from their homes and the clean-up effort is ongoing.

The purpose of this study was to explore the experience of living near Kingston, Tennessee, in the aftermath of the spill. Using existential phenomenology as the guiding research methodology, I interviewed 9 participants from the area and asked the question, "Please tell me about a time when you have been aware of the ash spill." Interviews were digitally recorded, transcribed, and analyzed using an approach to existential phenomenological research developed by Thomas and Pollio (2002). Analysis of the interview transcripts revealed four themes: 1) Change, Loss, and Uncertainty, 2) Inconvenience, 3) Powerlessness in the Face of Government ("You can't fight city hall"), and 4) Shouldering the Cost Burden/People Getting Something for Nothing (in general, economics). In addition, three sub-themes were identified with Change, Loss, and Uncertainty: landscape, community, and recreation. Each theme stood out against the dual grounds of the world and time.

A review of the literature in conjunction with the theme analysis indicates two theories at work: inhibition of collective action and a generational power structure that contributes to quiescence.

Table of Contents

Chapter 1: Introduction.....	1
Rationale.....	4
Personal Interest.....	5
Introduction to Empirical Literature	7
Introduction to Research Methodology	9
The Philosophy and Method of Phenomenology	10
Summary.....	12
Chapter 2: Review of Literature.....	13
Introduction	13
Disaster Literature.....	14
Environmental Concern	23
Sense of Place and Ecosystem Management.....	26
Environmental Justice.....	31
Dimensions of Power	34
Chapter 3: Methodology.....	40
Introduction	40
A Note on Methodology and Method	41
Introduction to Phenomenology	42
Research Methods.....	46
Procedure	46
Bracketing.....	49
Data Collection	53
Data Analysis.....	56

Assessing Validity	57
Chapter 4: Findings	59
Introduction	59
Participant Descriptions	59
Mike	59
Victoria.....	60
Sasha	60
Mary.....	61
Deidre	62
Jane.....	62
Sue	63
Diane	64
Lyle	65
Themes.....	66
Theme 1: Change, Loss, and Uncertainty	66
Theme 2: Inconvenience	72
Theme 3: Powerlessness in the Face of Government	75
Theme 4: Shouldering the Cost Burden/People Getting Something for Nothing ...	77
Contextual Ground.....	80
Chapter 5: Discussion	83
Introduction	83
Discussion of Study in Relation to Literature.....	84
Implications of Study Findings for Disaster Response and Public Policy.....	95
Implications of Study Findings for Further Research	97
Literature Cited.....	99

Appendix A – IRB Application	105
FORM B APPLICATION	106
THE UNIVERSITY OF TENNESSEE	106
Appendix B – Informed Consent Form	114
Vita	116

Chapter 1: Introduction

Early on the morning of December 22, 2008, near Kingston, Tennessee, a Tennessee Valley Authority (TVA) retention pond holding approximately 1.7 million cubic yards of coal fly ash failed, spilling the ash into the nearby Emory River and inundating farms and homes in the Swan Pond community (Administration, 2009; See Figures 1 and 2, below). The clean-up effort, which was originally estimated to last four to six weeks (Barker, 2008), is now expected to last at least four years (Staff, 2010, see Figure 3, below) and cost almost 1.2 billion dollars. The slurry lifted one home off its foundation and made several others uninhabitable. TVA purchased more than 100 homes in the area to create a buffer zone between the clean-up and the community, and the families that lived in those homes in most cases left the neighborhood. The spill also garnered national media attention and caused a flurry of activity in an insular community.

This event is illustrative of the type of technological disasters the world faces regularly today. From oil spills in Alaska and the Gulf of Mexico and coal waste spills in Kingston and West Virginia to nuclear meltdowns caused by earthquakes in Japan and toxic chemical releases in India, as our reliance on natural resources and technology increases so too does the danger technology poses when things go wrong. This study examines the lived experience of people in a community affected by an ash spill. My primary goal in undertaking this research project was to describe the major components of the experience in the hopes of helping ease the burden of future disasters by providing an understanding of the issues local residents may encounter.

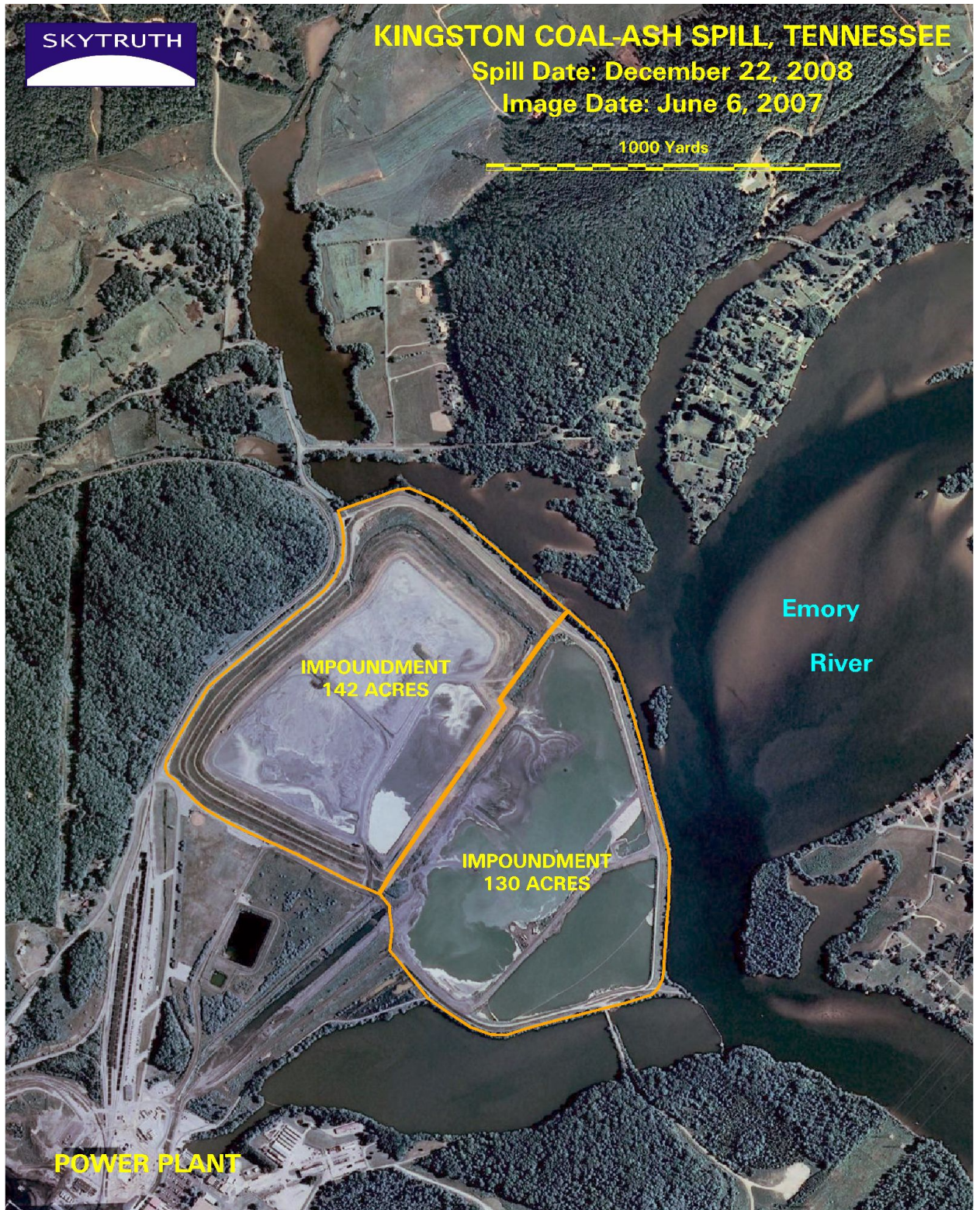


Figure 1: Aerial view of Kingston Coal Ash Retention Pond before the December 22, 1998 spill (Source: Skytruth).

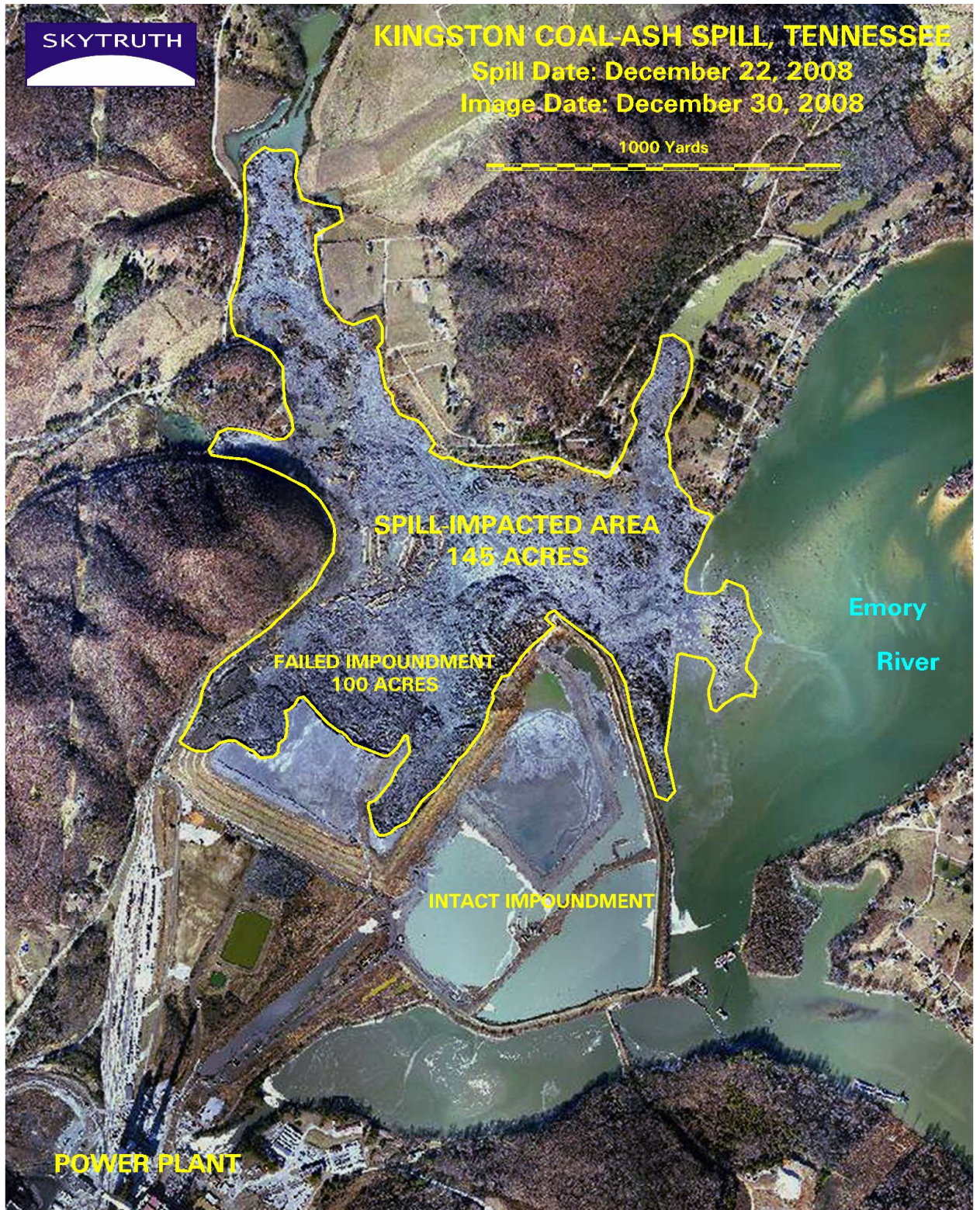


Figure 2: Aerial view of Kingston Coal Ash Retention Pond 8 days after the December 22, 1998 spill (Source: Skytruth).



Figure 3: A view of the clean-up effort, May 2011.

Rationale

For some time I have been interested in the relationship between communities and the natural resource management agencies that operate within them. I have observed that often the goals for the two stakeholders are similar but there is an undercurrent of distrust in both directions. The current empirical literature on the relationship between communities and government agencies lacks avenues to help understand and ease this distrust. Moreover, in times of disaster, even the best relationships are strained. In an ongoing unpleasant situation, such as this spill and the subsequent clean-up, care should be taken by all stakeholders to understand other points of view and to endeavor to make one's own concerns known.

Personal Interest

I grew up in an area with an unusually large percentage of government-managed lands, including a State Park and Natural Area, a State Forest, a State Wildlife Management Area, and a National Wild and Scenic River. All of my life I have witnessed the distrust of the local citizenry toward management agencies as well as the citizenry's love of, and attachment to, the lands those agencies manage. It was my own attachment to those public lands which caused me to focus my graduate studies on natural resources management. Moreover, in my professional career I worked for several years on the damage assessment and restoration of an oil spill into the Obed National Wild and Scenic River. That oil spill injured public trust resources and engendered discord in the local community regarding the clean-up and restoration.

A number of things made me especially interested in the Kingston Coal Ash Spill from an academic perspective. It occurred in the county southeast of my own, in an area I knew from childhood. It was similar in scope and policy to the oil spill I was immersed in at the Obed, and it involved the Tennessee Valley Authority (TVA). TVA was created by Congress in 1933 as a federal corporation with a mandate to improve navigability, enhance flood control, and provide for agricultural and industrial development. TVA set about achieving these goals by building dams and fossil-fuel power stations in the Tennessee Valley. The Kingston Fossil Power Plant was built in 1951 and was the largest coal-fired power plant in the world for some time after its completion.

As a quasi-governmental entity, TVA is experienced throughout the Tennessee Valley in a myriad of conflicting ways. The utility has historically brought inexpensive electricity, relatively high-paying jobs, and free water-based recreation to its service area. Its inception brought power to rural Appalachia and the (mostly realized) promises of a greatly increased standard of living and equalization with the more urban areas of the region. TVA services touch every home in East Tennessee in a positive way.

However, the local view of TVA is not always positive. To build the vast network of dams and reservoirs which bring the Tennessee Valley cheap power, good jobs, and water-based recreation, TVA flooded innumerable homes, farms, and communities. In many cases families were forced from their ancestral lands through the exercise of eminent domain, the government's right to appropriate private property for public use. In even more cases, the landscape as people had known it their whole lives was altered dramatically and forever. Decades after its initial creation, TVA's decision to impound the Little Tennessee River to create Tellico Lake in 1979 created controversy on a national scale, testing the new Endangered Species Act (ESA) and bringing new vigor to the age-old debate between the wise-use and preservation movements. Ultimately, despite a Supreme Court decision against TVA's argument to bypass the ESA, the dam was completed and the Little Tennessee River impounded. The outcome of the Tellico Dam Project illustrates the utility's power in the region (Wheeler & McDonald, 1986). Thus the initial thrust of TVA's authority into an area with a strong history of independence and sense of place caused distrust and acrimony that lingers today.

In the context of this complex relationship between TVA and its constituents, the ash spill occurred. I believe that if I can effectively study the relationship between TVA and the residents of Roane County in regards to the coal ash spill, my findings can help other agencies understand how to better relate to the constituents they serve, not only in the face of technological disasters such as this, but also in their day to day dealings with the people for whom they manage the land.

Introduction to Empirical Literature

A host of concepts in the disciplines of sociology, political science, and the human dimensions of resources management are applicable to the current study. Chapter 2 examines the most pertinent: environmental concern, environmental justice, sense of place and its role in guiding ecosystem management, the study of disasters and their affect on society, and the dimensions of power in communities. Each of these is briefly described below, and looked at in depth in the following chapter.

The literature of environmental concern seeks to determine what makes a person more or less concerned about the environment. Most often focusing on demographic variables such as age and education (Van Liere & Dunlap, 1980), race (Robert Emmet Jones, 1998), and religion (Hand & Van Liere, 1984), findings have been less than completely congruous. Some authors suggest that where one lives, or one's proximity to an environmental problem, are stronger predictors of environmental concern than any demographic variables have thus far proven to be (Cantrill & Senecah, 2001).

The environmental justice literature questions whether environmental "bads," such as the siting of toxic waste dumps and landfills, affect those with lower

socioeconomic status or minority status more often than middle and upper class Caucasians (Rhodes, 2002). Beyond looking at whether poor minorities are affected by such things, this body of literature also examines whether such sitings are intentional (Been, 1994). Often, it seems, there is no true nefarious intent on the part of corporations or government agencies who chose to site environmental “bads” near poor or minority neighborhoods, rather these “bads” are built where they are because of lower land values and/or a less politically active citizenry (Downey, 1998). The question then becomes whether the corporate and government entities who make decisions based solely on the bottom line irrespective of the harm their actions might pose to those least able to protest should be held accountable for the damage done.

Sense of place is a concept enmeshed the discipline of human geography. It makes the distinction between ‘space’, undifferentiated space that one is unfamiliar with, and ‘place’, areas one has a familiarity with, including memories and emotions which cause a strong sense of attachment (Tuan, 1977). People often feel strong place attachment to places where they recreate, such as reservoirs, parks, wildlife refuges, and government-managed forests. The literature suggests that understanding place attachment can help natural resource managers foster useful collaboration between themselves and the local residents and organizations (stakeholders), thus reducing conflict and engendering better relationships within the communities in which they exist (Williams & Stewart, 1998).

The study of disasters and their effects on society is wide-ranging. One of the biggest debates in the literature is whether it is necessary to differentiate between

natural and technological disasters (Beck, 1992; Green, 1991; Hilgartner, 2007). Many authors find the differences to be related to where the community places blame and whether they believe government officials could have prevented, or more effectively mitigated, the effects of a disaster (Couch & Kroll-Smith, 1985; Freudenburg, 1997). Another avenue of research that is relevant to the present study is what factors drive community members to organize in the wake of disasters, or conversely what inhibits them from doing so (Shriver, 2000; Zavestoski, Mignano, Agnello, Darroch, & Abrams, 2002).

The literature suggests that power plays a large role in how a citizenry reacts to environmental disasters, as well as less acute environmental and social problems such as general pollution or poor working conditions (Gaventa, 1980). The ways in which that power manifests will be discussed below.

Introduction to Research Methodology

Researchers undertake qualitative inquiries in order to answer questions of “how” or “what” rather than the “why” questions often posed in quantitative research (Been, 1994; Creswell, 1998); in this case the broad research question is, “What is the experience of having one’s life touched by a technological disaster”? Explication in and of itself offers the possibility to learn something about this population’s experience that is otherwise absent in the popular and scientific literature. While qualitative research does not seek to quantify the ways in which one disaster is like another, by asking questions of people whose lives have been affected by one event it is possible to gain a better understanding of this type of experience.

The Philosophy and Method of Phenomenology

In the process of determining an appropriate research methodology for a study of the Kingston Coal Ash Spill, I became increasingly interested in a phenomenological approach. The philosophy of phenomenology has its beginnings in the writings of Kierkegaard and Husserl. Rooted in the philosophy of existentialism, phenomenology focuses on the themes of individual existence. As a research methodology, phenomenology aims to distill participants' common experiences to their "essential, invariant structure (or essence) or the central underlying meaning of the experience and emphasize the intentionality of consciousness where experiences contain both outward appearance and inward consciousness based on memory, image, and meaning" (1998, p. 52).

The coal ash spill certainly includes the outward appearance of the disaster as well as the inward consciousness of the people who experienced it. Phenomenology allows practitioners and participants to examine the lived experience of a phenomenon. As I searched the literature on technological disasters, I found no studies which examined the experience with a phenomenological lens. Since disasters such as this are visceral experiences, phenomenology seems an especially appropriate research methodology from which to study the experience.

I was fortunate that two renowned phenomenology practitioners, Howard Pollio and Sandra Thomas, hold a research working group on the University of Tennessee's campus, known as the University of Tennessee's Existential Phenomenology Research Group (EPRG). After meeting with Pollio and Thomas and reading some of their works,

I determined to adhere to their existential phenomenological method, including participating in their research group as other phenomenological studies were presented and discussing my ongoing research and interviews with the group. While it is not necessary to present interviews in a research group to adhere to the tenants of the phenomenological method, sharing one's transcripts with other practitioners adds a layer of analysis and quality control which serves to further validate the findings of this study. The first six of the nine interviews I conducted were analyzed in the EPRG. The last three interviews uncovered no new themes and saturation was determined to have been reached.

The phenomenological method takes an unstructured approach to interviewing, with only the first question (or prompt) being planned and posed to each participant. From that jumping off point, the interviewer reacts to what seem to be the most pertinent of the participant's reflections, asking unplanned follow-up questions as necessary. Thus, a great deal of thought was put into the initial question for this research project. The question needed to be sufficiently broad to trigger each participant's discussion of their experience. Care was taken to avoid language that would suggest positive or negative connotations regarding the spill. After discussion with the EPRG I settled on the specific interview prompt I would ask of each participant: "Tell me about a time when you have been aware of the ash spill." I believed this question to be broad enough to allow participants to focus their discussion on whatever caused them to be aware of the spill most often or triggered their awareness most strongly.

Summary

The TVA Kingston Coal Ash Spill offers the opportunity to learn about how individuals experience the intrusion of a disaster into their community. It is my hope that the findings of this research project will be instructive for response efforts in future technological disasters, helping agencies and businesses minimize the inconvenience, intrusion, and unpleasantness of inevitable accidents. Moreover, this study presents the opportunity to observe local residents' attitudes toward TVA and the environment in which they live.

Chapter 2: Review of Literature

Introduction

A broad spectrum of literature relates to the issues surrounding the TVA Kingston Coal Ash Spill and the spill's effects on the people who live in the area. My personal interest focuses on the interactions between natural resource agencies, the natural resources they manage, and the citizenry who use and enjoy those resources. It has been my observation that even when the citizenry is concerned about or feels attachment to the natural resources in their local area, they are often unaware of the reasons behind the management decisions agencies make. This lack of awareness often leads to unnecessary mistrust or even conflict. It is also well established that agencies often discount the knowledge of local residents in their efforts to manage natural resources (Gunderson & Holling, 2002). Regularly, the ultimate goal might be the same for the citizenry and the agency, but lack of effective communication can engender conflict, mistrust, or apathy.

Mistrust and apathy are certainly present in the TVA region. The legacy of TVA began with the exercise of eminent domain, which likely set the utility on a rocky path to acceptance by the local citizenry. One source estimates that when TVA was created more than 50,000 people were displaced (Luke, 2010). Towns and farms were permanently flooded and, as often happens in the exercise of eminent domain, people felt that "fair market value" did not adequately assess sweat equity, family history, or the communities that would be lost. For these reasons, there is a lingering, generational distrust of the utility in the region. Perhaps contradictorily, TVA has long been

considered a prime employer throughout its service area. While in recent years the utility has begun relying more heavily on contract labor, residents in East Tennessee continue to attach a certain status to jobs with ‘the TVA,’ telling others about how they know someone who works there who is going to help “get them on” and expecting that once someone is “on,” they are “set for life.” Some families have generational employment in the utility. In an area where educational attainment and income are well below the national average and the number of people living in poverty is well above, securing a job with this stable, quasi-federal and therefore high-paying, employer is considered a coup of sorts. These two perspectives of TVA seem to cast the agency in divergent lights, as both benevolent provider and heavy-handed government robber. This type of relationship between a community and an employer is reminiscent of the issues discussed in the sociological study *Power and powerlessness : quiescence and rebellion in an Appalachian valley* (Gaventa, 1980), which examines the power relationships between local residents and natural resource extraction companies.

Citizens’ attitudes toward power entities and the social ramifications of disasters are both focuses of the literature. Beyond these concerns is the question of environmental justice – whether disasters happen where they happen in part because of the socio-economic status of the people in the vicinity. These issues and others will be discussed in the following literature review.

Disaster Literature

The social sciences literature examines disasters in depth, both those caused by natural events and those precipitated by technology. Quarantelli (1999) asserts that

humankind will see more and worse disasters in the coming years than in the past, mainly because of two factors: urbanization and industrialization. The continual growth in the urban populations of the world means that more and more people will be affected by disasters which occur in or near urban areas. Industrialization becomes a driving force for disasters, Quarantelli says, because of a number of factors listed below:

“(i) the accelerating expansion of accidents and mishaps in the chemical and nuclear areas; (ii) technological advances that reduce some hazards but make some old threats more dangerous; (iii) new versions of old and past dangers such as urban droughts; (iv) the emergence of innovative kinds of technologies such as computers and biogenetics that present distinctively new dangers; and (v) an increase in multiple (e.g., natural disasters creating technical ones) or synergistic-type disasters resulting in more severe environmental consequences. (p. 10)

Quarantelli notes that the social sciences are an appropriate venue for examination of disasters, because “floods, earthquakes, and other so-called ‘natural’ disaster agents have social consequences *only* because of the activities of the communities involved, before, during, and after the impact of the disaster” (1999, p. 11). He goes on to say, “the point is that if something is socially problematical, social solutions must primarily be sought.”

Some authors find the distinction between natural and technological disasters to be useful (Couch & Kroll-Smith, 1985; Freudenburg, 1997; Picou, Marshall, & Gill, 2004), while others see it as much less so (Beck, 1992; Green, 1991; Hilgartner, 2007; Quarantelli, 1999). In discussing the importance of planning for disasters, Quarantelli (1999, p. 10) argues that since all disasters are “initially and essentially social occasions, planning for them has to be primarily by social means.” For disaster preparedness and response to reach maximum efficiency, he says that it is “not useful

to approach disasters in agent-specific terms,” but rather there needs to be “shift away from a focus on the physical aspects involved toward a more social conception of disasters.” Noting that many communities have separate disaster plans for events such as floods, hazardous chemical releases and tornadoes (among other potential disasters) he says:

Such kinds of social organizational arrangements, although often understandable in terms of bureaucratic and political realities, are poor models of how to deal effectively and efficiently with disasters. They are unnecessarily economically costly, generative of conflict among agencies, lead to administrative duplication, and are wasteful of the time, effort and attention of anyone genuinely interested in doing something about disasters. (1999, p. 16)

While his point about the efficiency of disaster preparedness is well taken, many authors feel the distinction between natural and technological disasters is important at a theoretical level. Couch and Kroll-Smith (1985) focus on two distinctions between natural and technological disasters – those of time/duration of occurrence and human involvement/culpability. They note that natural disasters often happen very quickly, with an abrupt start and end point, such as tornadoes, earthquakes, and hurricanes. In contrasting natural and technological disasters, they focus their analysis on chronic disasters such as toxic waste contamination, which they say generally has been happening long before its presence is discovered, and which continues to affect victims over longer spans of time than one expects a natural disaster to last. However, they do not consider acute technological disasters, such as ash or oil spills. Because of this oversight, it seems their distinction involving time is less pertinent than they argue. When one considers how even natural disasters are often amplified by human negligence/error (such as the fully avoidable and predictable failing of levees in New

Orleans after Hurricane Katrina or the nuclear emergency following the 2011 earthquake in Japan), it seems that Couch and Kroll-Smith's distinction of human involvement/culpability is also a less than solid division between the two types of disasters. As Hilgartner notes (2007, p. 153), "the sociotechnical networks intended to monitor, manipulate, and manage risk have reached a level of density where today any disaster – whether attributed to the agency of natural or unnatural forces – will fall under the jurisdiction of some set of technical experts and organizations. All major disasters therefore demand a social accounting."

In 1997, William Freudenburg argued strenuously for the distinction between natural and technological disasters, saying, "the preponderance of evidence points to technological disasters as creating a far more severe and long-lasting pattern of social, economic, cultural, and psychological impacts than do natural ones, indicating as well that the underlying reasons for these impacts are broader and more complex" (p. 26). Freudenburg identified a number of differences between the two types of disasters which seem more salient than the items put forth by Couch and Kroll-Smith. He argued first that technical disasters include an "ambiguity of harm," where the dangers posed by the disaster (usually contamination) are not well known and cannot be seen with the naked eye, and therefore cannot be definitively known to have ceased. Second, he noted that where natural disasters often precipitate "therapeutic communities" where there is an outpouring of assistance, after technological disasters there often emerges a "corrosive community." The corrosive community, he explains, is one in which authorities, instead of bringing aid and order, deny blame or attempt to shift it, and "the victims find they become suspicious and cynical toward those who appear to be

responsible for the accident but to be unwilling to accept responsibility for it” (p. 31).

Finally, Freudenburg says, technological disasters create sociocultural disruption and concerns about recreancy, or the “failure of an expert, or for that matter a specialized organization, to do the job that is required” (1997, p. 33). The social disruption comes about because:

Simply by occurring, such accidents can provide victims, and others, with evidence that the person entrusted with the operation of systems may have failed to carry out their responsibilities with the necessary vigor. Such evidence, moreover, can convey a larger message. . . they can send the rest of society a ‘signal’ that it may not be so prudent, after all, to trust the authorities’ assurances that matters are satisfactorily under control. (p. 34)

Picou and associates (2004) joined the discussion of the distinction of natural vs. technical disasters with a study to determine stressors for those affected by the 1989 Exxon-Valdez oil spill in Prince William Sound, Alaska. They discuss three factors they find particularly useful in understanding how corrosive communities emerge: 1) the mental and physical health of the victims, 2) recreancy, and 3) protracted litigation. They explain that while the mobilization of citizen groups “should engender support and collective trust from disaster victims . . . litigation often exposes such experts, or specialized organizations, as irresponsible, incompetent, and untrustworthy” (p. 1496). This exposure “results in a loss of ‘trust and goodwill’ in agencies and organizations established to protect the public (and) . . . contributes to a pattern of long-term psychological stress and perceived damage to the community.” The authors examined seven arenas of stress caused by the oil spill: work disruption, community attachment, recreancy, litigation stress, oil spill risk, community damage, and intrusive stress. Their results upheld Freudenburg’s hypothesis of a corrosive community, and indicated that

continuing litigation “serve(s) as (a) prominent source of perceived community damage and event-related psychological stress” (p. 1493). These results led the authors to conclude that “litigation is a critical characteristic of technological disasters that precludes timely community recovery and promotes chronic social and psychological impacts” (p. 1493). Further, they suggest working to find plausible litigation alternatives (such as alternative dispute resolution) whenever possible.

Picou and associates (2004) called disasters “catalysts for collective action,” but what if they are not? A handful of authors have examined the question of why people from communities touched by disaster do not organize and mobilize, and what factors impede such organization. Zvestoski and colleagues (2002) examined the lack of community response following the discovery of high levels of dioxin in a New England community. They suggest that “changing government policies and procedures at the beginning of the twenty-first century may result in less recreancy Instead, there are more and more cases of community contamination in which agencies, instead of concerned and often alarmed citizens, ‘discover’ the contamination” (p. 386). These ‘discoveries’ allow federal agencies to be “better positioned to control the situation by disseminating information and engaging citizens in decision-making processes through well-tuned risk communication techniques. They are also more likely to get the support of elected officials who in other circumstances might side with constituents who distrust the agencies” (p. 386). This results in “improved risk management strategies by public authorities (which) create the perception that the public is protected” (p. 387). Further, the authors theorize that in communities with a history of heavy industrial activity, “residents may actually anticipate the discovery of contamination in their communities

and therefore fail to perceive a need to mobilize against something . . . inevitable” (p. 387). Finally, they assert that it takes more than a complicit citizenry to assure a consensual community response. They say that consensual community response occurs when:

Little or no conflict emerges either among residents or between residents and other entities (such as elected officials, bureaucrats, or business interests). In addition . . . little or no conflict exists between or among the agencies and elected officials themselves. When these conditions are met, residents for the most part accept whatever decisions are made. Perhaps most importantly, residents cope with and overcome whatever disruption of ongoing patterns of social and cultural relations the chronic technical disaster causes. (p. 388)

The authors say that consensual community response may represent instances when “the symbolic meaning attached to a risk relatively accurately reflects the actual risk and in turn allows citizens to maintain or restore the socially constructed reality vital to carrying on everyday life” (p. 391). However, the danger is that government and public officials may “construct for public consumption a symbolic account of a risk that . . . does not accurately reflect the actual risk” (p. 391). The question one must then ask when there appears to be a consensual community response is whether the government and public officials of record are in fact doing everything there is to be done, or are they only creating the impression that they are? In this case there was some evidence that “officials constructed official versions of risk, then created the impression of collaboration with local citizens, meanwhile engaging in decision making that suggests underlying public health risks were much more serious than the official versions depicted” (p. 404). Zavestoski and associates assert that this strategy, in conjunction with the residents’ understanding and acceptance of the community’s industrial past, together resulted in a consensual community response. They caution

that this type of sophisticated risk management strategy on the part of officials, “when used to promote citizen complicity with official risk decisions in the face of actual levels of risk that may pose public health threats, compromise(s) the social processes of lay discovery and definition of risk that are essential to maintaining public health and safety” (p. 404).

Continuing to examine why some communities do not engage in collective mobilization, Shriver and colleagues (2000) examined its absence in Oak Ridge, Tennessee. A city about twenty miles from my study area, Oak Ridge was established at the onset of World War II for the purpose of housing the workers who were, in most cases, brought in to work in the newly built nuclear weapons development complex. Among other pollutants, the plant and its environs are known to be contaminated with mercury. The authors note that, when the existence of the pollutants became known to the public, “a congressional investigation concluded that the government had deliberately misled the public and hid the data, using national security as a convenient shield” (p. 53). Nonetheless, apart from a few lone activists, the citizens of Oak Ridge maintained a solid front of support for the plant, so much so that a smear campaign eventually ruined the career of a nationally renowned oncologist who was originally recruited to the area because of his expertise when his tests supported concerns that their symptoms were consistent with exposure to pollution related to nuclear weapons production.

The authors note “most social movement analysts have implicitly assumed that the absence of collective resistance signifies the absence of grievance” (p. 47). Their

argument that this is not always the case rests upon another, even broader assumption – that people do not wish to be exposed to pollutants or toxins. Given there can be no doubt the environment in and near Oak Ridge is contaminated, and also given that a congressional investigation found the government deliberately misled and hid pollution, one could then reasonably conclude one of the two assumptions does not hold true in the Oak Ridge community. The authors determined to test the first assumption by examining why individual activism did not blossom into community activism in the Oak Ridge community. They focused on identifying forces which may have inhibited the transformation from individual to collective resistance. Suggesting the collective identity of the community stood in opposition to mobilization, they note while most researchers have “focused exclusively on (collective identity’s) role as a facilitator of social movement participation. . . . our research explores the converse role in which collective identity inhibits rather than facilitates mobilization; consequently, we view collective identity as the property of the larger community from which mobilization may emerge” (p. 43). Further, while most research on collective mobilization looks at the emergent group, to understand the forces that inhibit mobilization, the authors instead looked at the dominant group as the unit of analysis.

Residents of Oak Ridge, they found, maintained a “powerful collective identity based on secrecy, patriotism, and residents’ economic dependence on the (weapons) reservation” (p. 48). This identity was forged during WWII, when the townspeople found out they were in part responsible for the end of the war, and was nurtured in the decades of the Cold War, when they knew they were on the frontlines of protecting the country from the Soviet menace. Newcomers, who moved to the area after the 1960’s,

did not become as indoctrinated in the old ideals, and the authors found them to be a bit removed from the collective identity. Since Oak Ridge's collective identity and their economic well-being were both wound up in the plants, the authors say "the community responded (to these revelations by activating and enhancing its collective identity" (p. 52).

The community activated and enhanced its collective identity in a number of ways. First, the authors identify a heightened salience of economic dependence – responding to the reports of contamination by closing ranks, or increasing the sense of 'we-ness', or us-against-them mentality in the community. Second, the consciousness of the community compensated for the reports in the media. Residents seemed to "avoid learning of or critically evaluating information about health risks" (p. 55). The authors label this self-censorship, and they identified three manifestations: 1) scientific refutation of the reports of contamination, 2) assertions the reports were exaggerated, and 3) minimization of the possible dangers the toxins posed. Finally, residents enhanced collective identity by opposing activism, through means such as sanctioning those who tried to organize or speak out and forming counter organizations (such as Friends of ORNL) to "polish the image of the lab." In all of these ways, the collective identity of Oak Ridge insulated itself against the possibility of collective mobilization against the plants.

Environmental Concern

Much has been written in the sociological literature regarding the prediction of the level of environmental concern a particular demographic will demonstrate, and about

what characteristics are best for predicting environmental concern. The literature of environmental concern is a siren's song of collective, predictive order in a world of individual behaviors. Researchers constantly look for the next variable that can explain why people are or are not concerned for the health of the environment. Is it political leaning (F. H. Buttel & Flinn, 1974; F. M. Buttel & Flinn, 1978)? Age or Education (Van Liere & Dunlap, 1980)? Race (Johnson, Bowker, & Cordell, 2004; Robert Emmet Jones, 1998)? Religion (Hand & Van Liere, 1984)? Income? Urban/rural living (Robert Emmett Jones, Fly, & Cordell, 1999)? Could it be how often one participates in outdoor recreation or what type of recreation one participates in (Nord, Luloff, & Bridger, 1998; Theodori, Luloff, & Willits, 1998)? A host of researchers have looked at these common variables as well as many, many more.

After more than thirty years of research, there is still no definitive standard from which to measure environmental concern. It is fairly well established that well-educated, young, urban, politically liberal European women are more likely to be more concerned about the environment, but not always. It is widely considered true that the type of recreation one participates is related to one's level of environmental concern, but that no one yet has quite figured out how (Floyd, Hochan, & Noe, 1997; Theodori, et al., 1998). It seems that whenever one study finds stark evidence to indicate a demographic variable that seems to reliably predict concern another debunks it, as was the case in Samdahl and Robertson (1989), where the authors found a negative relationship between education and environmental concern, as well as a positive relationship between age and environmental concern, both of which were surprising and different from the general indications of the literature before and since.

In 1991, William Freudenberg observed: “While it may be that environmental concern is sufficiently broad to be measured successfully in a variety of ways, it is likely that different approaches to operationalization will lead to different results, making it imperative that researchers be both clear and explicit in describing their scales and methods” (1991, p. 170). It is true that what constitutes environmental concern seems to change from study to study – in one study environmental concern is operationalized as local pollution, in another, global warming, in a third, overpopulation. Hardly any two studies in the literature operationalize concern in the same way. This inconsistency causes problems with validity, and as Dunlap and Jones (2002) pointed out, limits the accumulation of knowledge. They also observe that some studies rely on a theoretical approach to concern, while others take a policy approach. The policy approach often measures the perceived seriousness of a problem, or respondents’ opinions on major causes, responsibility, support for solutions, or willingness to pay. The theoretical approach is a multi-dimensional concept, with an affective element (emotive and evaluative, attitudes), a cognitive element dealing with beliefs and knowledge, and a conative element, which deals with a person’s ability to act on their knowledge. It is important to note here that while behavior can usually be related back to concern, concern does not always translate into behavior. As an example: I recycle because I am concerned about the environment, but if I don’t recycle it does not necessarily mean I am not concerned, just that I haven’t acted on what I know. The best theoretical research, Dunlap and Jones maintain, “Encompasses the universe of expressions of concern,” attempting to measure all three dimensions, but it has been my observation that few studies have actually done so.

Sense of Place and Ecosystem Management

Some researchers have taken a different track toward understanding the bases for environmental concern. Cantrill and Senecah (2001, p. 188) asserted that while socio-demographic variables may be useful, they do not “seem to exert a uniform effect upon environmental perceptions.” Noting the contradictory findings in the literature, they posited that sense of place, and specifically, ‘sense of self-in-place’ has great predictive power: “In general, where a person calls ‘home’ is more reliably associated with environmental postures and beliefs than are other demographic variables; those who ‘live’ closer to a potential environmental crisis seem to reflect the most consistently pro-environmental stances” (2001, p. 189).

The concepts of sense of place and place attachment have appeared regularly in the literature of ecosystem management over the past two decades (see Cantrill & Senecah, 2001; Cheng, Kruger, & Daniels, 2003; Kemmis, 1990; Williams & Patterson, 1996; Williams & Stewart, 1998). To fully discuss the importance of place attachment in the context of ecosystem management, it is useful to first discuss ‘place’ as it is found in the literature as a separate, but complimentary concept, to ‘space.’

Yi Fu Tuan, a professor of geography, was instrumental in bringing the concepts of space and place to the public consciousness. He is often quoted as having said, “Place is security, space is freedom: we are attached to the one and long for the other” (1977, p. 3). The degree of one’s familiarity with a space largely differentiates the two concepts. A previously unknown ‘space’ becomes ‘place’ to us as we learn about the space we are in. It takes on meaning and begins to elicit emotions as we form an

attachment to place. Steiner (2003, p. 20) draws on Tuan (1977) when she explains space as “undifferentiated geographic world, from the global to the personal scale, that is devoid of personal attachment and historic familiarity from the perspective of any one, or group of, perceivers.” Further, a space may become a place as we come to see it as unique from other spaces we have experienced. Place attachment, Steiner says, occur as “the result of strong ‘place-related’ experiences’ which build up within the memory, residing there and taking on special meaning over time. The role of memory as the locus of the connection between place and meaning is the key” (2003, p. 21).

Some argue that globalization endangers the formation of place. Williams and Stewart (1998, p. 21) say that “concern for sense of place has risen in proportion to the spread of mass culture and consumption through entertainment and retail goliaths like Toshiba, Time Warner, and Wal-Mart.” Indeed, when one considers the homogenization of suburban, strip-mall America, it is obvious that unique places, locally owned endeavors such as cafes, 5 and Dimes, and hardware stores, are disappearing rapidly, replaced by Starbucks, Wal-Marts, and Home Depots with essentially the same layout and wares in every store in every city in every state.

So in essence, place is familiar, whereas space is generic. How can a grasp of these concepts help us to more effectively manage ecosystems? The answer lies, for the most part, in how we understand our relationships with the constituencies for which we manage the resources to which we all lay claim. The National Environmental Policy Act (NEPA) mandates public participation in the planning process when federal dollars will be used for actions that could negatively affect the environment. However, natural

resource managers often feel the public has little or nothing of value to add to the management discussion and they opt to follow the Decide-Announce-Defend model of public participation, or, in a nod to public participation, make decisions, then ask the public for input so they can say the public had the opportunity to voice opinions. Cantrill and Senecah say these traditional, top-down “management approaches for public land have often been accused of breeding distrust in governmental action” (2001, p. 186), perhaps because “there is still a tendency to treat people as autonomous individual agents outside the ecosystem, at best a source of values to be incorporated into our decisions, at worst agents of catastrophic disturbance of an otherwise smoothly running system” (Williams & Stewart, 1998, p. 18), there is an alternative. “Too often,” say Williams and Stewart (1998, p. 19), “planners are ‘outside’ the social circles that assign meaning to a place and therefore tend to discount them.” Beginning to understand the often deep sense of place attachment local residents feel for the natural resources around them can help bridge the gap between the layperson and the resource manager. They offer four day-to-day management techniques which they believe will improve relations between agencies and local residents by “giv(ing) the relationship between people and the land the careful, systematic attention it requires and deserves” (p. 21).

The first technique discussed is *Know and use the variety of local place-names*. They explain that names are important and imbued with connotations recently-installed agency employees might not understand. They give an example of an instance where a park ranger went to speak at a Native Alaskan village about a proposed action that was not expected to be controversial, however, the event turned hostile. After the event, a local resident explained to the ranger that he had been using a name for the bay which

no one in the village used, and which reminded them of unpleasant experiences. This had set the villagers on edge before the discussion ever began. In my own experience having worked at a park, speaking with locals about an area seems to go more pleasantly, and they seem to treat me more as an equal, when I use the place names locals have given areas, rather than the names the National Park Service ascribed. Williams and Stewart explain that using traditional place-names “signals that managers respect the ties people have to a place” (p. 21).

The second technique, *Communicate management plans in locally recognized, place-specific terms*, goes along with the first. While managers may tend to see the management unit as a whole, local residents “focus their concern on the fate of specific places” (p. 22). Using the example of a proposed forest clear-cut, the authors note that people are often concerned not only with where the timber will be removed, but also where the clear-cut can be seen from and how the action will affect those views. Thus, people are concerned not only with the place but also the context in which it exists and is experienced.

When discussing the third technique, *Understand the politics of places*, the authors admonish the resource manager to remember that “all politics is local,” or in other words, “what is personal, local, and immediate to people is what they care about, act on, and expect others to act on” (p. 22). They note that owing to the success of recent grassroots movements such as activism against environmental injustice, people are increasingly likely to “claim ownership of any issue that affects them, whether or not

legislatures, corporations, courts, or government agencies would traditionally have given them power to influence outcomes” (p. 22).

Finally, they remind the reader to *Pay close attention to places that have special but different meanings to different groups*. Sometimes the same place is important to different groups for different reasons. When the uses of the groups clash, conflicts can and often do develop. Understanding the root of these potential conflicts and being proactive in management and planning decisions can go a long way toward improving relationships with stakeholders.

In *“Place” as an Integrating Concept in Natural Resources Politics: Propositions for a Social Science Research Agenda*, Cheng and associates (2003) focus on how sense of place and place attachment color natural resource politics, especially collective action such as community-based (or “place-based”) collaborations. Such collaborations, the authors say, “are generally composed of individuals who, despite their diverse backgrounds and frequently opposing perspectives on natural resources management, work together to define and address common resource management issues bounded by a geographic place” (p. 88). They go on to tout these collaborations as perhaps more functional than ordinary politics:

The common thread running through these initiatives is the notion that the interactions occurring in place-based collaborations tend to center on problem solving, emphasize trust building, and focus on achieving on-the-ground actions supported by a broad spectrum of publics. In contrast, the interactions in formal political processes, such as those that occur in legislative arenas or in agency planning processes, tend to center on approving or opposing single-issue policy positions favored by a coalition of interest groups – the politics of interests. (p. 88).

These types of initiatives are being examined more and more often in the literature as healthy and productive alternatives to policy formation (see Cortner & Moote, 1999; Kemmis, 1990; Korfmacher, 2000; Scheberle, 2000; Wondolleck & Yaffee, 2000). The authors explain they believe place-based collaboration is successful because of “the fact that a place is a distinct geographic area toward which all collaboration participants express value – (which) is a central organizing principle for many of these emergent collaborative partnerships” (Cheng, et al., 2003, p. 88). They note that taking a more place-based perspective can:

Transform the decision-making process itself by redistributing power to voices and meanings that may not otherwise be expressed. In general, natural resources politics has been dominated by organized interest groups, commodity industries, elected officials, scientific experts, and resource specialists. All of these groups assign and advocate place meanings that tend to be general rather than nuanced. . . .In choosing efficiency over understanding in making natural resource decisions, many voices are marginalized or even ignored. (pp. 100-101)

Thus, the authors argue that expanding to a place-based collaboration more fully includes those without strong group affiliations. They conclude that “the politics of place is not merely a battle between environmentalists and industry. It is an evolving effort to create more equitable, democratic ways of defining, expressing, and valuing places and, in the process, transforming how people form group identities” (p. 101).

Environmental Justice

The discipline of environmental sociology often focuses on concerns about environmental justice (EJ). When environmental ills (such as the positioning of waste dumps) disproportionately affect disadvantaged groups (such as minority or low-income communities) environmental injustices might be occurring. In the case of the Kingston

Coal Ash Spill, the Swan Pond area is one of mixed demographics, where old trailer homes sit next to new brick homes with three car garages. However, Roane County is below the national average in income and educational attainment, and TVA was situated in the area in part because of the economic disadvantages of the Appalachian region. While the Appalachian region is less economically disadvantaged than it was at TVA's inception, the area still lags behind the nation in most economic and education indicators.

Although Rhodes (2002) states that settling on a measurement technique is the major problem facing environmental justice researchers, authors cannot even agree on what constitutes environmental injustice. Much debate has centered on whether *unintentional* correlations between the location of environmental "bads" and the poor or minorities can be considered injustices. According to the strictest definition, forwarded by Been (1994), environmental injustice occurs only when companies, governments, or other such entities *intentionally* position environmental burdens near poor, minority neighborhoods (or fail to position environmental benefits near such neighborhoods) on the basis of the income or race of the neighborhood's citizens, without compensation or agreement. This definition of environmental justice has been called "Intentional," because the entities positioning the environmental "goods and bads" are intentionally discriminating against minorities and the poor (Downey, 1998). Rhodes notes that intentional environmental injustice is particularly difficult to prove:

The instruments do not exist to directly measure environmental justice occurrences. What can be measured are outcomes or conditions that indicate the possible presence of a particular kind of EJ problem. What can be measured are differences between groups of people with respect to an indicator such as

mortality rate, proximity to an identified environmental hazard, or incidence of cancer indicating differentiated risk impacts. (p. 90)

A broader definition of environmental justice “concerns any and all cases where the impact of environmental activities, policies, burdens, and benefits are differentiated across population groups” (Rhodes, 2002, p. 91). This definition has been called “Institutional,” because researchers who subscribe to this definition believe that “the normal, non-intentionally discriminatory operation of important social institutions leads to racially inequitable outcomes,” and that these inequities constitute environmental injustice (Downey, 1998, p. 770).

When considering this broader definition, injustice does not have to be intentional to be acknowledged. Rhodes says that “one major problem in environmental justice is that the current obtainable measurement of environmental justice actually does not measure the degree of, the presence of, or the absence of environmental justice. Instead they measure indirect outcomes, often several degrees removed from the possible environmental justice situation” (2002, p. 89). I would argue that the measurement of indirect outcomes nonetheless proves that injustice exists. Once such injustice has been uncovered, further studies should be done to determine intentionality and the decision-making body which has fostered or allowed injustice to occur should begin taking steps to allay the injustice. When environmental injustice occurs intentionally it is particularly heinous, but regardless of intent, where injustice exists efforts should be made to stop it. When one unintentionally, through negligence, kills someone while driving a motor vehicle, the responsibility inherent in driving the car

causes the driver to be held accountable for his or her negligence. The same standard of responsibility should also apply to perpetrators of environmental injustices.

Environmental injustice can occur in many forms. In 1994, Bullard described three types of classification for Environmental injustice: procedural, geographic, and social. Procedural Environmental Justice involves fairness in the making and enforcement of rules and laws, Geographic Environmental Justice involves fairness in the location of or distribution of environmental hazards or benefits, and Social Environmental Justice involves the influence of demography in policy-making. Rhodes notes that “geographically specific problems occur when a specific neighborhood or set of communities either suffers disproportionate burdens or fails to receive proportionate benefits.”

Dimensions of Power

Thus it makes sense to argue that environmental injustice is at its core an imbalance of power between those with something to dispose of and those with a place in which to dispose of it, with institutionalized stratification systems assuring the unequal distribution of social “goods” and “bads,” including environmental exposures (Cable, 2012). John Gaventa’s 1980 book, *Power and Powerlessness: Quiescence and Rebellion in an Appalachian Valley*, discusses in depth the dimensions of power and how they played out over 100 years in a coal community approximately 80 miles northeast of my study area. In Gaventa’s examination, the role of the powerful was first ascribed to the coal company, American Association Ltd., which came into the valley, bought a great deal of land, provided jobs with better wages than the local residents

were accustomed to, and invested in infrastructure and amenities (such as roads, hotels, golf courses, and baths) to improve the lives of the local residents and promote tourism. Ultimately, however, the coal company fixed wages, polluted and despoiled the valley and the mountains around it through strip mining, and generally rode roughshod over the local residents who saw no effective route to stand up to the powerful company and demand better treatment and living conditions. While I am not suggesting here that TVA has perpetrated a similar degree of foul play on the constituents of its service area, I do believe that there are similarities between the circumstances and power relations that should be examined.

Gaventa describes three dimensions of power. The first, the pluralist approach, is straightforward, with a focus on behavior. Leaders are seen as representative spokesmen and it is presumed that people will take effective action to change their circumstances if they find their circumstances to be to their detriment. It also makes the assumption that the inaction of a people is not a problem to be addressed, but rather an inertia which will be overcome if a problem becomes bad enough to drive people to action. Essentially, the lack of complaint equates to consent and without complaint it follows that consensus must be implicit.

In this approach, power can be studied by examining “who participates, who gains and loses, and who prevails in decision-making” (Polsby, 1963, p. 55). Further, this model argues that assuming political inaction to be the problem ascribes middle and upper class values to all people. “The empirical relationship of low socio-economic

status to low participation gets explained away as apathy, political inefficacy, cynicism, or alienation of the impoverished” (Gaventa, 1980, p. 7). Moreover, Gaventa says:

Rather than examining the possibility that power may be involved, this approach ‘blames the victim’ for his non-participation. And it follows that by changing the victim – e.g. through remedial education or cultural integration – patterns of non-participation will also be changed. Increased participation, it is assumed, will not meet power constraints. (p. 8)

He challenges this dimension of power as an all-inclusive model by noting that, among other examples, the American civil rights movement developed and prevailed despite relatively low socio-economic status of the majority of its participants.

The second dimension of power, Gaventa explains, has been characterized by Bachrach and Baratz (1970) as power “which is exercised not just upon participants within the decision-making process but also towards the exclusion of certain participants and issues altogether” (1980, p. 9). Of this dimension of power, Schattschneider noted, “whoever decides what the game is about also decides who gets in the game” (1960, p. 105). Or explained another way, “one of the most important aspects of power is . . . to determine the agenda of struggle – to determine whether certain questions ever reach the competition stage” (Parenti, 1970, p. 501).

The literature regarding the second dimension of power stops short, however, from developing the tools with which to empirically measure whether the consent of the silent is, in fact, consent. Bachrach and Baratz say that if “there appears to be acquiescence in the status quo --(it is not) possible, in such circumstances, to determine empirically whether the consensus is genuine or instead has been enforced” (1970, pp. 49-50). Gaventa argues that often the silence is in fact acquiescence, and that

quiescence is a learned behavior, saying: “Just as the dominant may become so ‘secure’ with their position as to become ‘oblivious,’ so, too, may such things as routines, internalization of roles or false consensus lead to acceptance of the *status quo* by the dominated” (1980, p. 11).

With the third dimension of power, the manifestation of conflict is preempted because those with power shape the very wants of the powerless they influence, affecting the powerless’ conception of the issues altogether, often obscuring their understanding of their own best interests. He notes that emphasizing observable conflict leads to neglecting a crucial point made by Lukes (1974, p. 23): “The most effective and insidious use of power is to prevent such conflict from arising in the first place.” In the third dimension of power, Lukes says, analysis of power must allow for “consideration of the many ways in which potential issues are kept out of politics, whether through the operation of social forces and institutional practices or through individual decisions” (1974, p. 24). Moreover, “political actions chiefly arouse or satisfy people not by granting or withholding their stable, substantive demands but rather by changing their demands and expectations” (Edelman, 1971, p. 8).

Gaventa goes on to catalog the mechanisms of power, explaining that with the first dimensional approach to power those mechanisms are relatively straightforward and “involve political resources – votes, jobs, influence – that can be brought by political actors to the bargaining game and how well those resources can be wielded in each particular play” (Gaventa, 1980, p. 14).

With the second dimension, a “mobilization of bias” is added. Bachrach and Baratz describe this as “a set of predominant values, beliefs, rituals, and institutional procedures (‘rules of the game’) that operate systematically and consistently to the benefit of certain persons and groups at the expense of others” (Bachrach & Baratz, 1970, p. 43). They say that in the second dimension, power is sustained because the powerless fear the threat of things such as force (harm to one’s self or family), sanctions (withholding a job or firing a family member), or “the manipulation of symbols, such as, in certain political cultures, (calling someone) ‘communist’ or ‘troublemaker’”(Gaventa, 1980, p. 14). Because the powerless fear these threats, they will not act, so the power process can then be understood to involve non-events.

The mechanisms of the third dimension of power are especially difficult to identify, but Gaventa says their identification:

“involves specifying the means through which power influences, shapes or determines conceptions of the necessities, possibilities, and strategies of challenge in situations of latent conflict . . . in short, locating the power processes behind the social construction of meaning and patterns that serve to get (the powerless) to act and believe in a manner in which (they) otherwise might not, to (the powerful’s) benefit and (the powerless’) detriment. (1980, pp. 15-16)

Further, Gaventa notes that “a sense of powerlessness may manifest itself as extensive fatalism, self-deprecation, or undue apathy about one’s situation . . . lead(ing) to a greater susceptibility to the internalization of the values, beliefs, or rules of the game of the powerful as a further adaptive response” (1980, p. 17). This internalization is accumulative, and eventually, inertia rules until there is a shift of the power relationship.

The methodology Gaventa suggests for identifying the presence of the third dimension of power includes three steps. First, he suggests examining the development of the apparent 'consensus,' asking whether it seems to have been arrived at by choice or if it was "shaped by power relations" (1980, p. 27). Second, he says one must study the situation "to determine whether there is a specific relationship between the actions or ideologies of the powerholders and the action, inactions or beliefs of the powerless" (1980, p. 27). Finally, he suggests positing or participating in "ideas or actions which speculate about or attempt to develop changes"(1980, p. 27). He says that "the response of the quiescent population to such possibilities, and the response of the powerholders to the beginning formulation or raising of issues may help to show whether power mechanisms are at work to preclude challenge from emerging" (1980, p. 27).

Chapter 3: Methodology

Introduction

As noted above, qualitative research is concerned with examining specific cases of a phenomenon for the sake of understanding that phenomenon on its own terms. Researchers undertake qualitative inquiries in order to answer questions of “how” or “what” rather than the “why” questions generally posed in quantitative research (Creswell, 1998). Often, qualitative research is characterized by gaining a *depth* of knowledge, whereas quantitative research gathers a *breadth* of knowledge. In this case the general research question I am examining in depth is, “What is the experience of having one’s life touched by a technological disaster”? Explication in and of itself offers the possibility of learning something about this population’s experience that is otherwise absent in the popular and scientific literature.

The existential phenomenology methodology used in this study seeks to distill an experience to its essence, drawing on descriptions of experience such that, when the themes are shared, others with similar experiences will say, “yes, that’s it!” Thomas and Pollio call this “ah-ha!” moment the Eureka Factor (2002). Phenomenological inquiry seeks to identify overarching themes between the common lived experience of participants by asking them to describe what they were aware of at the time, how that awareness made them feel, and urging them to elaborate on the experience until a full picture of the experience is gained. The interviews of a relatively small number of participants often reach saturation and congruence due to the overarching similarity of the experience being examined (Polkinghorne, 1986; Steiner, 2003).

While this phenomenological study will not allow me to make quantitative, statistically applicable inferences to similar disasters, it is likely that information assimilated by this study can provide insights into understanding some of the underlying issues or concerns related to not only this but other disasters. Ultimately, the goal of phenomenological research is to find out what is significant about the lived experience. One of the great benefits of a phenomenological methodology is that it may uncover significant portions of an experience that a quantitative methodology may overlook. As Steiner notes (2003, p. 32), “questionnaires can only measure what they ask, (and) they may fail to adequately address those aspects of the experience that are most salient.” What I endeavored to find out about Roane County residents’ experience of the ash spill is whatever is most important to the participants. The phenomenological method allows for this discovery by prompting participants to speak of their experience. It assumes that whatever they speak of is what is foremost to them about the experience. This chapter will introduce the reader to the philosophy and practice of existential phenomenology and describe in detail the research method used.

A Note on Methodology and Method

While the words methodology and method are often used interchangeably, the two are not strictly synonymous. *Method* refers to the specific steps one takes in order to accomplish a task, and can often be illustrated with a flow chart or other visual interpretation, as will be seen below. *Methodology*, in contrast, includes both method (as a practice) and the philosophical, ontological, and epistemological underpinnings which support the method and cause the researcher to identify with that method. In this case, had I chosen to conduct an interview study with no particular philosophical

background, I might have called this chapter “Methods,” and a philosophical discussion of the interview as a data gathering technique would have been superfluous. However, as I determined to use a phenomenological method, and as phenomenology, and particularly existential phenomenology, is not only a method but also a philosophy which must be understood for the method to be appropriately applied, it is necessary that, before discussing the steps I took to reach my findings, I must first describe the philosophical and ontological background of my methodology.

Introduction to Phenomenology

Phenomenology is a research method appropriate for studies where the goal is understanding rather than generalization, where the researcher seeks to describe experiences rather than to ascribe meaning to them. It has its roots in the philosophies of Kierkegaard, Husserl, Sartre, Heidegger, and Merleau-Ponty, with different practitioners deciding with which of those philosophers’ perspectives they most closely agree.

The University of Tennessee’s Existential Phenomenology Research Group (EPRG) subscribes to the concept of Existential Phenomenology. Thomas and Pollio (2002, p. 9) define existentialism as “a philosophy about who we are and how we come to live an authentic life.” Existentialism is generally noted as having its roots in the writings of philosopher Søren Kierkegaard (1813-1855), who focused on elucidating the themes of individual existence rather than the abstract thinking about human reality that was common to the philosophers of the time (Valle, King, & Halling, 1989). Like Kierkegaard, Jean-Paul Sartre (1905-1980), moved the existential philosophy forward. Sartre’s belief that truth was subjective, and that “every truth and every action implies a

human setting and a human subjectivity” (Sartre & Baskin, 1965, p. 32) is especially important to practitioners of existential phenomenology.

The practice of phenomenology began with the German philosopher Edmund Husserl (1859-1938), who turned away from theoretical analysis in an attempt to find the “essences” of human phenomena (Thomas & Pollio, 2002). He endeavored to systematically investigate things ordinarily taken for granted about everyday life, and believed that in focusing on “the things themselves” one could discover “patterns of meaning that were universal, unchanging over time, and absolute” (Thomas & Pollio, 2002, p. 9). Husserl’s concept of “to the things themselves” is an integral concept for phenomenology. As Steiner (2003, p. 34) explains, “(the) phrase describes the phenomenological rebuffing of theoretical analysis and cognitive explanations of experience and behavior in favor of first person descriptions of lived experience.” Adherents to the Husserlian philosophy are said to be using a descriptive phenomenology, one which focuses solely on the world as described in the text and does not take context into account (Finlay, 2009).

Husserl’s ideas were continued and expanded by Martin Heidegger (1889-1976), who perhaps most notably described the concept of “Dasein,” which literally translates to “there” (da), and “being” (sein) but which can be better understood when phrased “being-in-the-world.” Where Husserl sought to focus solely on the data as given, Heidegger instead insisted that an individual’s life context must be included in interpretation. Heidegger’s argument was that a human being never exists outside of his or her circumstances, and that the circumstances shape what a being is aware of.

“Being-in-the-world” is also the basis for the idea that people and the world “co-constitute” each other (Valle, et al., 1989). That is to say that people must exist in the world, and just as the world shapes people, their perception of the world shapes the reality of the world as it is perceived. As Thomas and Pollio explain (2002, p. 16), “We never just receive stimuli from the world or project our ideas onto the world. Perception is always an exchange or transaction between me and my world.” This primacy of perception is a major focus of Maurice Merleau-Ponty’s (1908-1961) phenomenology. Merleau-Ponty, a philosopher who originally focused his studies on perception, came to “combine Husserl’s descriptive approach to phenomenology with an existential ground, deriving, in part, from Heidegger” (Thomas & Pollio, 2002, p. 12). Merleau-Ponty stated that perception “is not a science of the world, it is not even an act, a deliberate taking up of a position; it is the background from which all acts stand out” (1962, p. xi). Further, he argued that each individual’s perception is unique and cannot be separated from its context. Such emphasis on perception and context, in contrast to Husserl’s focus solely on “the things themselves” leads to the practice of existential phenomenology.

This unique individual experience of perception is the basis for the postulate of intentionality. In the phenomenological realm, intentionality differs from its standard dictionary definition. Steiner (2003, p. 35) explains it thusly: “consciousness exists in the world, and in direct relationship to it. . . . The directional nature of human experience refers to the fact that I am always conscious of something. My consciousness is always directed toward the world. Conversely, there is always someone for whom an object, an aspect of the world, is present.” Thomas and Pollio (2002, p. 14) elucidate this concept with the maxim, “What I am aware of reveals what is meaningful to me.”

An individual's context and what he or she is aware of form the figure/ground phenomena. Thomas and Pollio (2002) describe figure/ground by discussing Edgar Rubin's famous drawing of a white vase made of two faces in black profile. They explain that if one originally notices the vase, then the vase is figural and the faces are the ground. Both are integral to the picture; because one does not notice the faces does not mean they are not there, and indeed, if they were removed the vase itself would cease to exist. In this way it can be illustrated that what a person is aware of (what is figural to them) is illuminated by the context, or ground, in which the person's experience is situated.

Marable (2012, p. 45) notes that "there are four major existential grounds against which all human experience takes place: (a) space/world, (b) body, (c) time, and (d) relationship/others." She notes that each individual's lived experience take shape against one (or more) of these grounds. Van Manen (1990) explains that the four grounds, taken together, form an individual's lifeworld.

One last phenomenological concept especially applicable to the study at hand is the idea of "thrownness." A person experiences thrownness when their life comes upon a situation into which they are thrown beyond their wishes. Thomas and Pollio (2002, p. 17) write: "The task of life then becomes one of dealing with our "thrownness" and "projecting" it forward to new situations in which we may realize our genuine possibilities." In the case of the current study, the ash spill is the impetus for the participants' thrownness, and how they come to deal with the experience of the spill will define how they project themselves forward in their lives.

Research Methods

Procedure

Phenomenology is an interview-intense method which relies on rigorous adherence to procedure, from sample selection through data analysis. Each aspect of the procedure will be described in detail below. In addition, Figure 44(below) presents a visual representation of the phenomenological process.

Study Preparation

The University of Tennessee strives for ethical conduct in all research endeavors, and as such requires investigators to take training in Human Subjects Research when a project will include interaction with humans. In preparation for data collection, I took that training. In addition, the University requires that an Internal Review Board (IRB) approve all research projects that will involve human subjects. The IRB approval process endeavors to ensure that participants will not be harmed or discomfited in the research process. The IRB application included an interview protocol and an Informed Consent Form which I read to each of my participants and to which they gave their verbal consent. My study (IRB approval number 8475B) received IRB approval on February 24, 2011 (see appendix A).

Another step I took in preparing for my study was to begin attending the EPRG well in advance of my own study in order to familiarize myself with the process the group employs and to listen to several phenomenological interviews and the group's discussions of them to help me understand the interview and data analysis processes. I

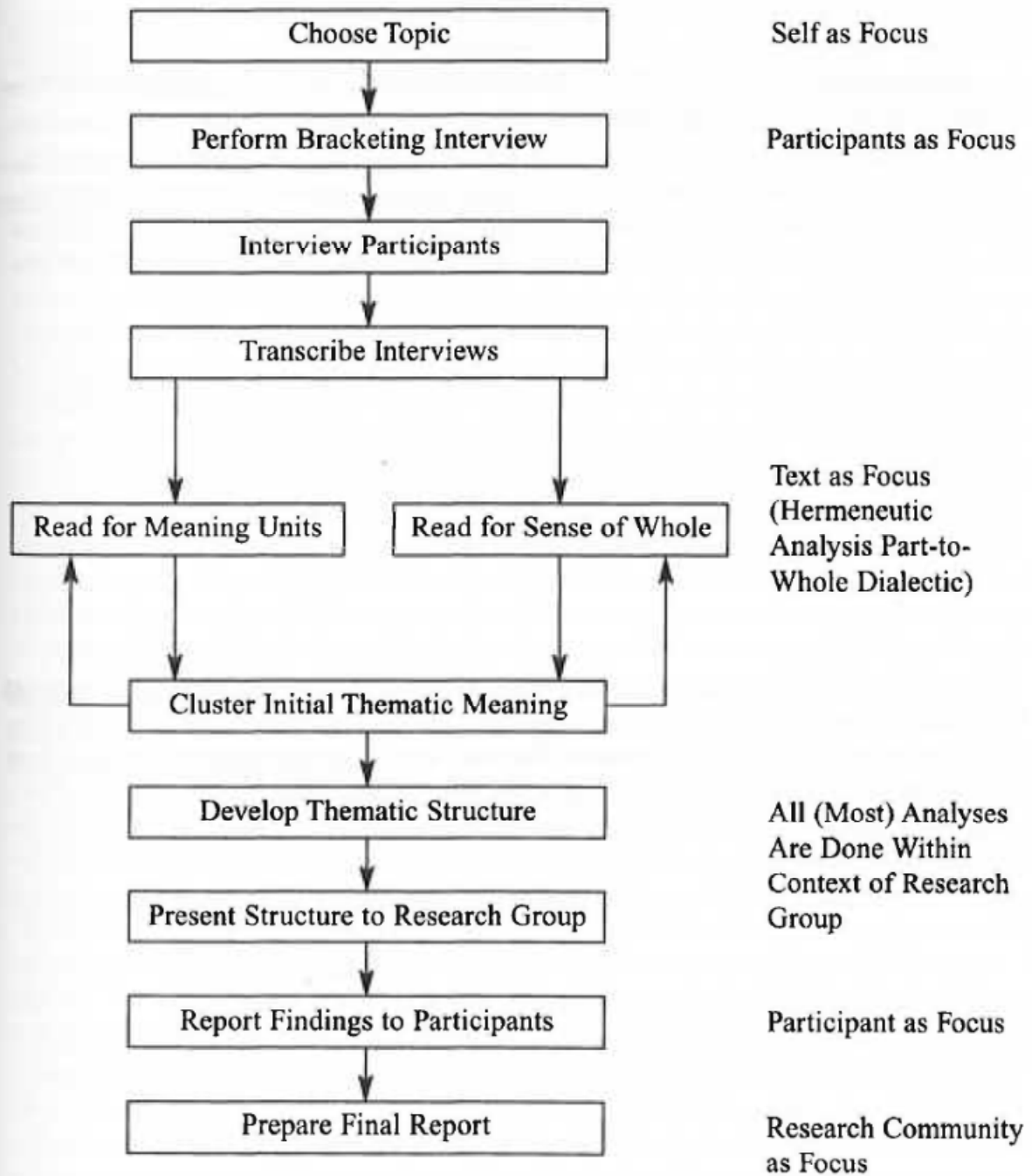


Figure 4: Summary of Steps in Conducting an Existential-Phenomenological Study. From Pollio, H.R., Henley, T., & Thompson, C.B. (1997). *The Phenomenology of Everyday Life*. New York: Cambridge University Press. Reproduction permission requested from Springer Publishing.

attended the EPRG from November, 2010 until September 2011, engaging in the review and analysis of several phenomenological studies from disciplines as diverse as sports medicine to the psychology of religion. Beginning my association with EPRG early in my research process was helpful in providing support, advice, and guidance. While working with a research group is not a requirement of the phenomenological method, it is recommended when possible for the lively discussion and additional analysis it offers. Vetting interview transcripts through a phenomenological research group adds a layer of validity to this study.

The recorded interview is the primary means of data collection in a phenomenological study (Creswell, 1998; Thomas & Pollio, 2002). During a phenomenological interview, the interviewer must take care to focus on the words the participant speaks, asking for clarification or elaboration when necessary. Although it is likely that the interviewer approaches the interview with curiosity and some idea of what themes he or she might expect to hear, it is of the utmost importance that the interviewer not put words in the participants' mouths or guide participants to talk about any themes unless the participant seems to focus on them in their discussion.

There are two important strategies a phenomenological interviewer should employ to avoid coaching or suggesting any themes to the participant. First, Thomas and Pollio (2002) suggest making the initial interview question as broad as possible. Marable (2012) noted that the initial interview question should be discussed with an experienced phenomenological interviewer, or ideally, a phenomenological research

group. I discussed my initial research question with the EPRG and after a good deal of brainstorming, we settled on the broad prompt, “Tell me about a time when you’ve been aware of the ash spill.” Second, all phenomenological researchers should employ a bracketing process in order to make themselves aware of their own preconceived notions. Bracketing is done to help the researcher attempt “to suspend or put in abeyance one’s preconceptions and presuppositions (i.e. one’s biases)” (Valle, et al., 1989). By using bracketing as a tool to heighten awareness of the potential topics to which she might be inordinately drawn, the researcher becomes more conscious of the need to allow the participant to direct the interview.

Bracketing

As stated above, bracketing is an attempt by the researcher to examine his or her preconceived notions, concerns, and biases about the subject matter in order to be more fully aware of how their own position might influence the interview. My bracketing interview was performed by another member of the EPRG in an empty room on the UT Campus. The interviewer began by asking me the same question I would be asking of my participants: “Tell me about a time when you had an awareness of the ash spill.” My bracketing interview was read aloud and discussed in the EPRG.

I began by talking about the first time I had heard about the spill, and about how I had initially seen it from an academic and professional perspective because of my job working on an oil spill damage assessment and restoration. Throughout my bracketing interview I talked about my understanding of the ash spill in relation to the policy and governmental processes that surround such an event. In discussing my interview within

the EPRG, we determined it was important that I remain aware of my desire to look at the spill from an academic perspective because the people I interviewed saw it from a personal and visceral perspective and it could be insulting for me to reduce their experience by explaining what had happened from an “expert perspective.”

On a more personal level, my descriptions of the visual impact of the spill were very evocative. At various times during my interview I called it “surreal,” “stark,” “bleak,” and a “moonscape.” I mentioned the size of the spill several times, and one phenomenology group member noted my description conveyed a “vastness.” My own experience having difficulty comprehending visual extent of the spill was important because I did not want to put words in participants’ mouths about how they viewed the spill. Indeed, participants did grasp for words with which to describe what they had seen, and without the bracketing interview bringing my attention to how important it was to stay out of their attempts at description, I may have colored the interviews with my own experience.

I spoke of TVA in my interview as an entity “trying to throw money at a problem” and “get out ahead” of the backlash of the spill. This goes to the heart of my own concerns about the intentions of government agencies in general. As a person who has grown up in the TVA service area, and having lived most of my life in a county where a large proportion of the land is owned by state and federal government agencies, I have from time to time questioned the approaches these agencies take and the ways they go about achieving their objectives. It was important that I not lead participants in any way

to express views about TVA, and seeing my own views about TVA stated reminded me to be aware of the possibility of creating that bias.

I talked about the changes to the Swan Pond community and how the displacement that was caused by the spill may have strained the “ties that bind” the community. I mentioned that I believed the community had suffered a “one-two punch” in that the landscape and also the intangible community to which people belonged have been altered drastically. Here again, it was important that I not lead participants to discuss changes to the landscape or the community, but only focus on those themes if participants seemed particularly focused on them themselves.

Finally, I talked about the question of whether the spill has caused or will cause negative health effects, and about how I do not want to jump to conclusions, but would rather see scientific evidence one way or the other; however I also noted that I realize it may take years to produce such evidence. In that vein, I discussed citizens groups and activism, and mentioned that I felt “they can be a lot more effective if they base their arguments on science instead of knee-jerk reactions.” This is another instance of my academic stance, which I realized after the bracketing interview I needed to guard against in order to build rapport and help the study participants feel comfortable talking with me about their experience. Phenomenology views the participant as an expert, because no matter the background knowledge of the researcher, the person with the lived experience is the one who truly knows what it means to live that experience. My bracketing interview served to remind me that no amount of academic knowledge or job experience could make me aware of what it was like to live through the ash spill as well

as a description of the phenomenon from someone who has lived through it. This is especially important to remember because phenomenology strives to see the participant as the expert.

Sample

Appropriate sample selection underpins the success of a phenomenological study. Participants must have experienced the phenomenon and be willing to speak at length with an interviewer about it (Thomas & Pollio, 2002). Beyond that, participants must be willing to have the findings which result from their interview published (Moustakas, 1994). The investigator should strive for a purposeful sample, one which will “inform an understanding of the research problem and central phenomenon in the study” (Creswell, 2007, p. 125). Phenomenological studies typically require fewer participants than other interview studies, perhaps because phenomenology focuses so closely on one common experience. Creswell (2007) suggests a sample size of between 5 and 25 participants. Steiner (2003) and Thomas and Pollio (2002) suggest smaller samples, considering 6 to 12 individuals appropriate. Ultimately, the right sample size should be dictated by the point at which a study reaches saturation – that is, the point at which no new themes are apparent in subsequent interviews.

The goal of this study is to understand how long-time residents of Roane County have experienced the Kingston coal ash spill. It was my hope that I would be able to find participants who lived in close proximity to the spill; however I was hesitant to apply strict distance criteria to my sample because I knew that many people who live or did live very near the spill might be reluctant or unable to participate in the study. The area

has received a good deal of attention from the media and I was concerned that nearby residents might be experiencing sampling fatigue. In addition to that concern, I knew that TVA had bought the properties of many people who lived in the closest proximity to the spill and that those people had signed non-disclosure agreements. I also expected that people living in neighboring towns would have had personal experiences with the spill. For these reasons, I chose to assign the broad sampling criteria of Roane County residents over the age of 18.

Data Collection

A total of 9 Roane County residents were interviewed, which is in keeping with the guidelines set out by Creswell (1998, 2007) and Thomas and Pollio (2002).

Table 1: Participants' ages, place of residency, occupation, and educational attainment.

, below, shows the pseudonyms, approximate age, residency, profession and educational attainment of the participants. I knew the first two participants I interviewed personally and knew them to fit the criteria I had set forth. I contacted them by phone, explained my study to them, and asked them if they would be willing to be interviewed. After interviewing them, I asked them to recommend other people who lived in the area, had some personal experience with the ash spill, and who might be willing to talk to me. This method of personal referral is known as the snowball method (Creswell, 1998). My original intent was to use the initial interviews with people I knew personally as pilot interviews, but as I continued to interview participants and present the interviews in the EPRG, it became clear that the same themes were present in the first two interviews as in the subsequent ones. Therefore I included my original interviews in the study sample.

Table 1: Participants' ages, place of residency, occupation, and educational attainment.

Name	Age	Residency	Occupation	Education
Mike	Early 30's	Lifelong Harriman, EH	Service/Manager	High School
Victoria	Early 30's	Lifelong Harriman	Professional/Ed	High School
Sasha	Early 30's	Adjacent County/SP	Business Owner	High School
Mary	Late 60's	Lifelong Roane County	Professional/Ed	MS in Ed
Deidre	Mid 40's	Lifelong Kingston	Business Owner	MBA
Jane	Late 50's	Lifelong SP/EH	Service/Ed	High School
Sue	Early 70's	Lifelong Swan Pond	Homemaker	High School
Diane	Mid 40's	Lifelong Swan Pond	Health Care	Technical
Lyle	Late 40's	Lifelong Swan Pond	Contracting	Technical

EH=Emory Heights, SP=Swan Pond

I contacted potential participants by telephone, explaining that I was a Ph.D. student at the University of Tennessee doing a study about the experience of living in Roane County after the ash spill, that the interview was likely to last from 30 minutes to an hour, and that they would be tape recorded but their interviews would be kept confidential.

The interviews took place either in the participant's home or work place, depending on which was more convenient for the individual. Using a digital recorder to record the interviews, I first read each participant the informed consent form approved by the IRB (see Appendix B), and asked for their verbal consent to be interviewed. Then I began each interview by prompting, "Please tell me about a time when you have been aware of the ash spill."

The interviews ranged from twenty minutes to about an hour in length. Upon the completion of each interview I asked the participants for the names of other Roane County residents they knew who might be willing to speak with me about their experience.

I completed nine interviews with Roane County residents, including two men and seven women. Their ages ranged from early-thirties to mid-seventies. Their educational attainment ranged from high school graduates to Master's degrees. All but one participant had lived in the county their entire life and that person grew up in a neighboring county and has lived in Roane County for at least 10 years. One had worked for TVA some years ago, and another was currently employed by a company that contracts with TVA. Three were employed in the education sector, one in the health care industry, and three in the service industry. One was a home maker. In discussing Polkinghorne (1986), Steiner (2003, p. 39) notes that "participants must be selected so as to generate as wide an array as possible of specific experiences relative to the phenomenological topic to be explored. . . . Errors in participant selection occur when participants represent only a narrow range of possible descriptions." I believe my

sample represents a good portion of the spectrum of the types of people living in Roane County today, and as such the potential for sampling error was reduced.

Data Analysis

Each interview was transcribed by a trained transcriptionist who had signed a confidentiality agreement. Six of the transcripts, as well as my bracketing interview, were presented in the EPRG. This group is interdisciplinary, made up of graduate students and professors from various departments in the university, all with an interest in phenomenology. The group meets once weekly and reviews phenomenological interviews. One person in the group reads the part of the interviewer while another reads the participant. Each interview is read aloud and any member of the research group may stop the reading at any time to comment on or ask questions about the interview. The researchers take care to focus on the text of the interview and not speculate as to the participants' intent or any underlying meaning. The group discusses the interviews individually as well as how the interviews relate to each other and what themes seem to occur. Because the same people attend the group throughout the semester, all members hear all the interviews presented and help the primary researcher to notice themes across the interviews.

I analyzed the last three interviews without the review of the EPRG. I first read each of the new interview transcripts, making notes as I read, especially where common themes seemed to occur. I then read all of the interviews several times, each time using colored flags to identify particular themes. I found the same themes to be present in the three interviews I did not have the opportunity to discuss with the EPRG. At that

point I determined that saturation had been reached and I stopped trying to schedule more interviews and turned my attention to report writing.

Assessing Validity

The primary means of assessing the validity of this phenomenological study was the presentation of the interviews in the EPRG. As noted above, while not necessary, having several people to read and be familiar with the data, and the discussion that results from reading the interviews aloud, helps assure that the researcher does not overlook or impart undue importance to any part of an interview. The iterative process of data analysis I employed on my own also served as a validity check.

Once the initial thematization had been completed, I offered the participants an opportunity to review the themes and comment on my findings. This is an important step in the phenomenological research process because phenomenology assumes that the participant is the expert and as such, the researcher should make certain that the participant agrees with the researcher's findings and believes the findings to accurately represent their experiences. As Merleau-Ponty observed (1973, p. 143), "he is able to get across to me inasmuch as I am . . . capable of allowing myself to be led by the flow of talk toward a new state of knowledge." I sent each participant a copy of the participant descriptions and themes and asked them to read them to make sure I had not misrepresented their experiences. I had the opportunity to speak with six of the nine participants and each told me that they agreed with everything I had written. Two told me they were surprised that others had described experiences that were so similar to their own. By returning the results to the participants, I was able to verify that I

understood what they told me, and that they agreed with what I had written about their experience. Their agreement with the final analysis serves as the ultimate test of validity.

Chapter 4: Findings

Introduction

This chapter introduces the reader to the 9 study participants (all names are pseudonyms), discussing both demographic information and the overall content of each interview before moving on to identify the overarching themes of the interviews. Briefly, the themes this study identified are: 1) Change, Loss, and Uncertainty, 2) Inconvenience, 3) Powerlessness in the Face of Government (“You can’t fight city hall”), and 4) Shouldering the Cost Burden/People Getting Something for Nothing (in general, economics). This chapter also discusses the contextual ground against which these figural themes occur.

Participant Descriptions

Mike

Mike is a man in his early 30’s. He has lived in Roane County his whole life, having grown up in the Emory Heights community which borders Swan Pond. He now lives in another area of Harriman and works as a manager in the service industry. I interviewed Mike at his dining room table. He stated that his initial reaction to the spill was that it had only been a matter of time. He talked about watching the ash pile get bigger as he grew up, thinking it seemed unstable. He had a great deal of difficulty describing the spill visually. He said that it was “unreal” and that it “defaced everything.” He repeatedly said that it was “like nothing I’d ever seen.” He talked about fishing and boating and swimming in the river and the sloughs, and how the area would never be

the same again. The theme that appeared most in Mike's interview was economics, and he talked about the people who have sold their property and the profit they must have made, as well as concerns about increased utility prices stemming from the spill. He did allow though, that he had not noticed an increase in his bill. He concluded his interview by stating, "Money fixes a lot in a poor town like (this)."

Victoria

Victoria is a woman in her early 30's. She has lived in Roane County (mostly Harriman) her whole life, but never in the Swan Pond Community. She works within the educational system. I interviewed Victoria at her dining room table, while her kids came in and out of the room. She was friendly and happy to talk with me, but as she talked the tone of her interview was somewhat sorrowful. She seemed surprised and a little shaken by the change in the area, and especially impressed by the suddenness with which the change occurred. The major theme throughout Victoria's interview is one of change and loss. The spill seems to have helped her appreciate the mundane in her life and her community a bit more.

Sasha

Sasha is a woman in her early 30's. She moved to Swan Pond Circle from an adjacent county more than 10 years ago and co-owns a business in Harriman. Her home was not within the impact zone, and she did not feel she had been directly affected by the spill. I met with her in her work place. She discussed her ambivalence about whether to join a class action suit and expressed skepticism that all of the people who claim to be experiencing health issues were actually made ill by the spill. She

didn't feel like she herself had been really affected in any way other than inconvenience, and Inconvenience was the theme her interview touched on the most. She talked about the vehicle dash passes needed to get through security, the traffic and damage to the road, the "rubber-neckers" who came to see the spill immediately after it happened and how they slowed traffic. Her biggest health concern seemed to have been for her dogs, as she says she was especially careful to wipe their paws whenever they went out to make sure they did not have prolonged contact with the ash.

Mary

Mary is a woman in her mid to late 60's. She is about to retire from teaching, and she worked at TVA before she began her teaching career. She lives in a rural part of Roane County several miles from the spill site and she doesn't pass that way, so she is the participant most removed from the spill. This was evident in Mary's description of her experience with the spill, which focused on concern about people who she knew who lived in the area and anger that TVA had let such an event occur. I met with Mary in her classroom while her students were out. She told me she felt most closely connected to the spill through a friend of her son's whose house was shown on the initial news coverage. She mentioned water recreation and scenic beauty as things she had heard about being affected by the spill but said she had not seen it personally. She said she got her information about the spill through the news, not word of mouth. Mary feels very strongly about working for what one earns, and as such economics was the strongest theme throughout her interview, though it was often in combination with her

concerns that some people had taken advantage of the spill for personal gain, perhaps by falsely claiming ill health effects.

Deidre

Deidre is a woman in her mid to late 40's. She has lived in Roane County all of her life and for several years has lived on the Clinch River about a mile and a half downstream of the Emory-Clinch confluence. She is a small business owner with an MBA. I met with Deidre in her work place, and she seemed excited to have the opportunity to complain about TVA to someone. She feels most affected by the spill because of the ash that gets in her vents and coats her house, causing her to have to clean her vent filters weekly and her husband to pressure wash the house frequently. She expressed frustration, not so much at the inconvenience itself but more at TVA for not acknowledging that they were causing her the inconvenience. She said even a token gesture like offering her free air filters would go a long way toward making her feel like her trouble had been acknowledged. Even though she talked almost the whole interview about ash in her air vents and therefore obviously in the air she is breathing, she never gave me the impression that she had a real concern for her health.

Jane

Jane is a woman in her late-50's who is a service worker within the Roane County School system. She has lived in the Swan Pond area all of her life. She currently lives about a mile from the spill site, but does not live on Swan Pond Circle. I met with Jane in the school cafeteria one morning before the lunch rush started. She was kind and wanted to help, but said she wasn't as affected by the spill as others she

knew. However, she did tell me that she can see the lights and hear the heavy equipment of the clean-up from her bedroom window. She felt the way she had been affected most by the spill was through being inconvenienced, from the noise and lights, from the heavy equipment that tears up the asphalt, and from the dust in and smoke in the air. Jane talked a long while, and all of the themes of my interviews were soundly included in her descriptions. Inconvenience, economics, and change/loss all were especially prevalent. She seemed able to put a positive spin on almost all the themes as she talked, telling me, "I don't want to be a griper all my life." She talked a good deal about the economic bright side, mentioning the jobs the clean-up had created as well as the community development projects TVA had undertaken or funded, such as the new Harriman Middle School gymnasium and the renovations to the Princess Theater. In terms of change and loss, she talked of the uncertainty she and her family experienced, especially in relation to family graves that were closed to them. She also talked about the way the area had changed since the spill, relating that back to tales her mother had told her about the changes in the landscape when TVA began creating its facilities. She seemed perplexed by how such a thing could have happened, why TVA had not foreseen the lack of structural integrity or taken more pains to maintain the levee, but she does not seem accusatory or particularly angry about the incident or its aftermath.

Sue

Sue is a woman in her early 70's. She has lived in the Swan Pond community since birth. She met her husband when he moved to the area to work for TVA. I met with her at her dining room table and we talked for awhile about their travels, their

children, and their house, which her husband and son built. Two members of her family have also built houses in the Swan Pond community, and both were displaced by TVA, one by the spill and another because of an unrelated TVA plan where eminent domain was exercised. Of that experience, she said, “Of course it doesn’t do much good to get upset with them (TVA).” When I asked her why, she simply said, “Well . . . you know that they’re the federal government, you don’t fight the government.” All of the themes I discovered in these interviews were present in Sue’s description of her experience of the spill, but the major theme was change and loss. She talked about seeing the area change when TVA came in, getting roads and electricity and watching the Circle grow, and now seeing her neighbors and children move away and missing the landscape as it was, especially in the fall when the leaves change. Of her first impression of the spill she said, “It was just overwhelming and ugly and heartbreaking.” Resignedly, she said, “I really would just like to have it back like it used to be.”

Diane

Diane is a woman in her mid-40’s who works in the health care profession who grew up in the Swan Pond community and lived there until the spill. I spoke with her at the kitchen table in the house she and her husband purchased after TVA bought them out of the home they built on Swan Pond Circle. The main themes that presented themselves in Diane’s interview were uncertainty/loss, economics, and a sense of resignation toward the machinations of TVA. She talked quite a bit about how she and her husband built their home with the intention of living there the rest of their lives, and that when they made the decision to take TVA’s offer they did so as a hedge against

what might happen later (lower offers or the exercise of eminent domain). She explained that when they sold their property to TVA they did so with the hope that once the spill was cleaned up they could repurchase their property and go home again. The day I talked with her, the news had broken that TVA had decided not to resell the properties they had purchased in the impact zone, but rather planned to make that area green space. She was still getting used to the idea that they would not get to move home. She spoke about adjusting to a “new normal,” and how life is constantly changing. She noted that she understood why TVA did not want to resell the properties, finally saying:

I understand it all the way around, it just doesn't make it any easier to take, you know, especially if you thought you were going to go back. It always in life it seems like you have to readjust to what new normals for you are. And what a normal thing is for you at 30 will be very different at 50 and then when you're 70 it will be even different still. So if you don't go with it, though, it will destroy you. I really believe you've got to go with change really; it will destroy you, no question about it.

Lyle

Lyle is a man in his late 40's. He grew up on Swan Pond Circle and was bought out by TVA after the ash spill. I met with Lyle at his home. He was friendly and did not mind talking about the spill and the changes in his life since, but he did give me the impression that the move and the uncertainty surrounding the spill had deflated him a bit. All of the themes I have noted in the other interviews were present in Lyle's description of his experience, but the two that were most obvious was his feeling that resisting TVA was a losing proposition so it is best to just go along with what they want, “You're just a pawn and they do what they want to with you” (Lines 173-174) and his

reflections about the recreation he has participated in on the river in his lifetime. He recalled fishing with his grandfather and his cousins as a child and walking with his family as an adult and how the area has changed because of the spill.

Themes

In listening to the participants' descriptions of their lived experience with life after the ash spill, five themes came to the forefront. They were 1) Change, Loss, and Uncertainty, 2) Inconvenience, 3) Powerlessness in the Face of Government ("You can't fight city hall"), and 4) Shouldering the Cost Burden/People Getting Something for Nothing (in general, economics). Every participant spoke about Change, Loss, and Uncertainty, and it was the prevailing theme in several of the interviews. There were many facets to this theme, and the analysis can be split into three subthemes: Landscape, Community, and Recreation. I also encountered Inconvenience and Shouldering the Cost Burden/People Getting Something for Nothing in all but one interview. Powerlessness in the Face of Government was present in most of the interviews, but was much more explicit in my interviews with people who had been displaced or who had had a close family member displaced because of the spill. The following narratives describe the themes in more detail.

Theme 1: Change, Loss, and Uncertainty

While change, loss, and uncertainty are separate concerns, I encountered these concepts together in these interviews more often than not. As Victoria stated:

One minute you see the lake and the water and everybody fishing there and then all of a sudden that area is just not useable anymore and you're worried

about getting in the water or the residue affecting anybody and what it's gonna cause in the future and . . . Just the change of it is scary but you just never know what's going to happen next, either. It just kind of puts doubt in your mind about what the future holds.

Many things have changed and been lost for the residents of the Swan Pond community, and even three years beyond the spill, residents still face a great deal of uncertainty as to what the future holds. The changes and uncertainties are evident in the participants' descriptions in a myriad of ways. As I considered the interviews, it became clear to me that there were three areas that seemed to weigh heaviest on participants in terms of Change, Loss, and Uncertainty. These three subthemes are landscape, community, and recreation.

Subtheme 1: Landscape

The most noticeable change to the Swan Pond community is probably the visual landscape change, which is evident to anyone who visits the area today. Even if one did not know what the area looked like before the spill it would be obvious the area is in a state of becoming; heavy equipment moves earth, trailers and temporary fencing stand in every line of sight. Participants regularly spoke of the ruined quality of the area, struggling to find words to describe it. Some words they used were: devastation, ruined, defaced, unreal, and "a big mess" (Jane). They compared it to natural disasters including earthquakes (Sue), and volcano eruptions (Sasha, Jane), as well as saying it reminded them of the Badlands (Sue), and a movie scene (Jane, Sasha, and Sue). Jane said, "the ash was just so completely there-I mean you couldn't even see the water anymore and it was-[sighs deeply]. And of course the landscape was just- with all those-all the equipment and the trucks and everything it was spoiled." Sue went further,

saying, “It was just overwhelming and ugly, heartbreaking. . . . It just looked like something out of a horror movie. You think my goodness how could this happen in our little community? And I-just in your wildest dreams I guess you wouldn’t expect to happen, actually happen as bad as it did.”

Of importance to a number of participants was how quickly the change occurred. To Deidre the fact that the spill happened at Christmas made it seem all the more horrible. “Well that’s such a, such a family time, you know everybody’s gathered, warm fuzzy you know, you got everything in the house ready, you probably got the food for your dinners you know, you got the presents under the tree and then wham! All gone.” Victoria’s interview is full of references to the suddenness of the change. She said, “It’s kinda hard to understand if you didn’t see it before, you know, see all the grass and the lakes and everything there and then all of a sudden it was gone.” Later she said:

We had actually just drove over there and looked at some of the houses and the land and stuff and then the next day it was all covered. I mean it was just ash, there was nothing. I mean coal and-and ash everywhere and it just kind of took away the scenery of everything I guess and it was just, it was in an instant. I mean from one day to the next it was totally different.

Jane likened the changes to the landscape from the ash spill to the changes TVA made when they came to the area initially. She said she identifies now with her mother, who has always reminisced about “back before TVA came” when the area was all farm land, and how when TVA built Watts Barr Dam the landscape changed. Jane said, “I really understood how my mother felt because the landscape had changed so much. . . . And it was just odd to me that my mother would tell me that and now, ‘now I

understand what you're talking about mama, back before the TVA.' Now it's back before the ash spill. . . . It looks completely different than it did."

Subtheme 2: Community

As noted above, TVA purchased more than 100 homes and those homes currently stand empty. Driving down Lakeshore Drive, the peninsula that shoots south from Swan Pond Circle Road with the Emory River to its east and the Kingston Steam Plant to its west, the homes and yards are well-maintained. No one's grass is too long, no one's flowers unkempt, no bicycles lay in driveways, there are no cars are up on jacks. In fact, one rarely sees a car at all, and the ones you do see have government tags. No children play in the street; no dogs roam the neighborhood or bark from windows. Every front door bears the same flyer proclaiming in red: "NO TRESSPASSING THIS BUILDING IS OWNED BY US-TVA."

While it is unlikely that TVA will decide to purchase more homes at this point, residents experienced a great deal of uncertainty during TVA's decision-making process about which properties to purchase. Diane, who eventually sold her property to TVA, explained the uncertainty this way:

Well you know for us, you could never move forward, for us. It was, because there was so much up in the air about well, are they going to come in and close this road and take the property? Are they going to come in and give you a fair market price for your property? Because clearly when we built our house we had no intention of ever going anywhere ever again. So at the time they started, our neighbors, all of our neighbors started selling, we got down to about 5 neighbors that had not sold when they came back and came back to us again and did another re-appraisal and really--we just didn't know what, we didn't know what they were going to do. And we didn't feel like we could progress forward. We had a barn halfway started, and we didn't want to go ahead and finish the barn because if we did we didn't know if we'd be reimbursed for what we were doing.

And uh, I mean just financially you didn't know, you just didn't know which direction to go. You felt like you were in limbo.

In terms of change and loss, Victoria said:

Well even not just people living there, also but, even from back to the standpoint of the kids being able to use that facility for the baseball and just the community it, it just takes away a part of your, of the communities' lives. I mean people lived there, they visited there, they fished there, they hung out there, they picnicked there, and now you just can't even use it at all. So I think that puts a strain on the community.

Perhaps even more succinctly, Diane said, "It really is a community gone. And I don't think that the people that are making the decision realize the impact of that. It would be as if tomorrow a city didn't exist. Not on the same scale, but clearly the life of the Swan Pond area will forever be changed, it will never be the same again."

The community feels the loss of those families who TVA bought out. Sue said:

We've lost a lot of neighbors. You know that's a big impact on a community. We had friends that lived over there. And there's been several of them that have moved and people that we would just go by and wave at, you miss that too. And they're going to tear the houses down, that's sad. To me it's a big waste, too. . . . So it's just like there's half the circle gone you know. It's just--and you know everybody around when you live in this community all your life. Like half of it's gone.

Diane's desire to return to Swan Pond was evident when she spoke of the intangibility of community. She used a tornado that destroyed a portion of the community I am from (Mossy Grove, Tennessee) as an example of how disasters alter a community, saying:

Well, you know that when those houses were gone, now the community isn't gone, and a house doesn't make a community, but a lot of your people were gone. And a lot of your people never came back and you don't see people, anybody say, 'Well I think we'll just make a new community.' You know, you just don't see that, that don't happen. It just doesn't happen. But--I know probably

somebody's looking at it from a very black and white safety-liability standpoint, instead of looking at it as a community standpoint.

Subtheme 3: Recreation

Every participant I spoke with noted the loss of the area as a recreation resource. Several spoke of the community baseball and soccer fields TVA had maintained in the area and how generations of Roane County residents had used the fields for practice. Many described memories from childhood of fishing with cousins, parents and grandparents. They talked about boating, picking blackberries, taking walks around the circle and even watching the seasons change along the river. Lyle's description is particularly invocative:

I guess when I really recognize it is when I'm riding around and I think of my grandfather who is deceased and we used to fish all the time and when I was a kid going down to the lake and crappie fishing with him. There were me and my cousins going down and just fishing at the culvert, that's what we called it. And it just sends you back in time you know. Things are always changing in time and so basically it's just-- there's all kinds of thoughts you know. Basically when you're back in your childhood that you recognize it and see the changes and just-- everything that it's made different you know.

Participants expressed both worrying and optimistic uncertainty about the future of recreation in the Swan Pond community. Deidre, who lives on the river downstream from the spill, summed up the worry when she said:

You know there are certain reasons you live by the lake, or river. I'm actually on the river. But now you're afraid to even enjoy those reasons that you moved there because you're afraid of getting in the water. I mean they say the arsenic levels are fine and you know, but who do you believe? It's in their best interest to say that the water is fine. They're not going to say, 'oh yeah, well the water's contaminated don't go in it.'

In a similar vein, Victoria expressed concern about the stability of the area when she said, “They want to build a sports complex but you know how sturdy is that going to be? You’re going to be standing there one day and all of a sudden fall through or something. I mean, who knows?”

On the other hand, there is hope the new ball fields and other recreational facilities TVA plans to construct will strengthen the community. Diane noted that she believed new facilities would be one way of preserving and strengthening the feeling of community. She said:

I think that a start (toward keeping the community feeling intact) would be when they do the walking trails and they do the park and they do the, where the people feel like they got something out of it. Because you know the people that lived on the Circle, they didn’t get anything. Their properties weren’t involved . . . they had to deal with all that It doesn’t really seem like there’s ever been anything done for those folks that had to contend with it on that side of the spill.

Theme 2: Inconvenience

All but one of the participants spoke of how the spill had inconvenienced them in some way. Many spoke about the period of time when Swan Pond Circle residents were required to display dash passes to be allowed entrance. Diane said the passes reminded her of living on a military base and being waved in and out. She said, “[It was] secure, we could have probably left every door and window we had open and it wouldn’t have been a bit of a problem. But it was difficult for family, like my family, to come in to see us because they didn’t have the decal and all that.” Sasha echoed the sentiment, saying, “If you had family that was coming through, you know you had to go meet them and then bring them to your house. So that was an aggravation.”

Most remarked on the traffic and heavy trucks which have been ubiquitous throughout the clean-up. Victoria said the area had acquired a sense of “hastiness” with the increased truck traffic. Lyle said he supposed he was getting used to it now, but that there had been a lot of inconvenience caused by “the construction, the work, the changes, the roads--the roads have moved several times.”

Some noted the danger posed by the heavy trucks on the narrow roads and the damage the trucks do to the road quality. Jane said:

The road is torn all to pieces. I don't know if they're waiting to finish completely and then repave the road, but there's like a patch here you go over. . . . you know it's not that there's chug holes but there's a patch that's been here and then you go over it and then it's smooth and then you come up on another patch and it's just wobbly wobbly wobbly for about two miles there.

Even though Jane, who lives in the hills above Swan Pond Circle, said she wasn't really affected by the spill, she noted that she could see the lights from the cleanup shining in her bedroom at night and hear the machinery as it worked. Sue, who lives on the Circle, told me she had gotten used to the noise now, but that in the beginning it reminded her of Vietnam:

Everyday there was helicopters everywhere. It was like we were in a war zone for months after that. I'm sure they were just looking to see what was going on, taking pictures, and probably the president might have even been down here, I don't know. But uh, it was a lot of noise. But I have not--and I guess I've just got used to that too, because there are still helicopters that come over.

Sue also told me she had had knee surgery and had needed to go back to the hospital in an ambulance but the road was blocked and they had to turn around and go another way.

Victoria, Sasha, and Deidre all said frustration caused by inconvenience was the biggest way that the spill had affected their lives. Victoria, who doesn't live near the spill, spoke of being agitated and mad that she had to take another route through the Swan Pond area, and although she allowed that it wasn't a long period of time that the detour was in place, and she seemed to feel a bit embarrassed by her annoyance with it, she still said, "I think the inconvenience of not being able to go through that one area was probably the thing I liked least about it. . . . It was just thinking, 'Oh my goodness, I have to go *the long way around*,'" (emphasis hers).

Sasha lives on Swan Pond Circle but not within the impact zone. When I contacted her about the interview initially she told me she had not been affected by the spill. Once we began the interview, however, she seems to have felt inconvenienced by it in a number of ways. She recalled cleaning ash off on her mailbox and porch (which she said was "just filthy dirty") and having to wipe her dogs' feet off when they came in from outside. She discussed ushering visitors through while the dash passes were in effect. She told me the worst of the inconvenience was "getting through all the gravel trucks flying, dodging the--fearing for your life from the gravel trucks." But she seemed to have been especially frustrated by what she called "sightseers, nosy people." Of that part of the experience she said:

Everybody came from miles around, you know to look and see and all the news media and stuff and you'd literally have to blow your horn to get out, you know. When we turned in the Swan Pond Circle entrance to go home you would have to you know like holler and say "move" and blow your horn because they were swarming. They were just like looking, taking pictures.

Almost the whole of Deidre's interview was dedicated to the cleaning regimen she and her husband have adopted since the spill. She said she has to clean her air vents once a week to keep them from clogging up, describing how she gets the step stool and screwdriver and goes about the process. She talked about how her husband has to pressure wash the outside of the house three or four times a year. She seemed most annoyed that TVA does not acknowledge that her home is impacted by the spill and clean-up. She says, "Well it would have been nice if they had said, 'oh well here's some free air filters that will take care of the coal ash' or 'you know we're so sorry,' but you know. Anything would have been, instead of just (shrugs)." Finally, she said, "It's just another daily chore, or weekly chore that really irritates me. And I don't understand why they can't fix that, somehow."

Theme 3: Powerlessness in the Face of Government

All but two of the participants expressed some degree of powerlessness in the face of the machinations of TVA. Sasha talked about looking into joining a class action lawsuit but deciding "we didn't really want to get involved in that because you know, just--just because it seemed like a lost cause." The adage "you can't fight city hall" comes to mind, and indeed, Sue said as much to me. She spoke about two family members who had been bought out by TVA, one through the exercise of eminent domain for a project that never materialized, the other because of the ash spill. She said, "Of course it doesn't do much good to get upset with them (TVA)." When I asked why, she replied, "Well--you know that they are the federal government. You don't fight the government." When I asked her why she said that, she answered, "Well the old

timers say that because, you know, all the times they've come in and taken people's farms and flooded people's property and all that." In the same vein, Lyle said, "Any government resource--and I've been in the military too and in the military it was the same way. Any direction they want to go, they go. They make their own way." The last thing he said to me during the interview was, "You're just a pawn and they do what they want to with you."

Another point participants made to me was that TVA has money to spend in an area that is economically disadvantaged. Mike said, "Money fixes a lot in a poor town like Harriman." And Jane jokingly quoted a rap song when she told me, "It's all about the Benjamin's." She and I talked at length about the projects TVA has initiated and paid for in Roane County, school building projects and the refurbishment of the Princess Theater on Roane Street, Harriman's main thoroughfare. Jane seemed to have a hard time deciding how to feel about TVA's projects. She said, "I really don't know what to think. . . . I wonder if--they didn't get fined did they? I don't think it would be a fine they were paying. I don't know if it was good PR maybe?" She also said, "I don't know how I feel about it I don't want to be a griper all my life. . . . It's what they came up with and it's what we go with. And of course I'm proud for the kids to have a new gym. It would be--not very school-spirited of me not to be proud for them." She seemed to wrestle with the cause and effects surrounding the situation, saying:

And in this distressed area you cannot argue with the fact that people you know, a lot of people benefited from it that normally would have been unemployed or--course I don't know, I guess they're unemployed now because I guess they've scaled down quite a bit. But still, you can't argue with the fact that it did put a lot of people to work.

Diane probably talked about feeling powerless against TVA more than the other participants. She discussed the “will they or won’t they” of eminent domain and trying to decide whether to take what TVA offered, and the aftermath of their decision. She said:

So once we made the decision to sell we got together with them and they told us what--it wasn't a matter of what you thought you wanted, it was a matter of what they said they'd give you and we got down to so very few neighbors we were really afraid they would take it. I even wrote Tom Kilgore (TVA's CEO) a letter and asked him was he going to exercise eminent domain? And he said at this time he had no intention of doing it. But, 'at this time.' So we went ahead and sold, and then we were told that if the clean up was done that we could go back. Well that's not going to happen. It's not, they're going to tear the house down, we know that now. . . . Of course obviously it sort of felt like we had been duped a little bit, that we had been lied to. And uh, that we hadn't been told the true story and most people said, 'Well, duh! You should have known better than that.' And like we probably should have thought about it, although, had we stayed who's to say they wouldn't have come and took it. So you never know. It's a crap shot. Um, I can't really say anger--I can't say that we're angry about it. . . . But there is always that sense of disappointment. . . . I guess it comes down to a matter of who has more money or who has more, I don't know. More money I guess, more power. But you can't fight it. So I guess that's part of the reason we've been so accepting of it is what are you going to do? You could throw probably 100,000 dollars at it and what difference would it make? You know in the end you would still be in the same boat. And um, I'm sure they wish it had never happened. We wish it had never happened. But it did and um it's just where we are. It's just where we are.

Theme 4: Shouldering the Cost Burden/People Getting Something for Nothing

While the news media surrounding the spill has been particularly attentive to the health and environmental concerns raised by the spill, focusing on water and air quality and human interest stories about respiratory problems, none of the participants in this study expressed any serious concern for their health. Diane did say she and her husband got chest x-rays shortly after the spill, “just in case,” and Deidre allowed that

she was now hesitant to go in the water, saying, “They say the arsenic levels are fine, but who do you believe? It’s in their best interest to say that the water is fine. They’re not going to say, ‘oh yeah, well the water’s contaminated, don’t go in it,’” but neither seemed particularly worried that they will ever experience any ill health effects from the spill.

For the most part, where these participants discussed people’s health concerns, it was illustrative of a hesitancy to believe people’s health had actually been affected by the spill. As Sasha said, “All I know is I’ve always heard it’d been there for years and the people they--I don’t think that they were lying but . . . I just don’t see how it made them that sick that quick, you know?” Diane echoed that sentiment when she said, “I was never afraid of it. But we’ve lived there all of our life. All of my life we’ve lived there. I wasn’t afraid of that stuff.” And Mary expressed distrust toward those with claims of ill health caused by the spill when she said, “The ones that were legitimate, sure they needed help. If it destroyed their home, sure. But if somebody jumped up and said, ‘Well I have breathing problems and I have asthma and this has affected my asthma,’ which I know has happened--“ she trailed off with the unspoken understanding that she disapproved of such attempts to profit from the disaster. Ultimately, Sasha concluded that ignoring the whole thing was best because, “If I had listened to what everybody else was saying and what they were afraid was going to happen or what they say was happening to them I would have made myself sick from worrying about it.” Jane echoed that sentiment when she told me, “I pick the things I’m going to worry about and that wasn’t one of them.”

Jane also verbalized a sense of media over-exposure I felt from the others when she said:

I just got tired of listening. . . . They offered something *every day* about--I mean--(sighs) the TV stations would just bombard us with details about--when they were going to have public meetings, and see I didn't go to any of the public meetings. I should have gone but I didn't. And I guess I just felt like I would never understand it. They were just pushing too much information to me for me to digest it. And you know maybe a more informed person--a more educated person than myself--might have been able to understand it. I guess I was just waiting for the condensed version to tell me why it happened and-- what all exactly they were going to do.

Taken altogether, participants' discussions of the health effects of the spill seemed to be more related to economics than health per se. Sasha said, "I think that a lot of people wanted something for nothing out of it is what I really think." Mike talked about having a cousin who was bought out and got paid double, or perhaps even triple, what the property was worth. Diane counters, though, that there were lots of rumors but no one really knows who got what because those who were bought out signed non-disclosure agreements. She said:

Of course everybody, you know you go to the barber shop, you got to church, you go here, you go there and people say 'Well, gosh, so and so got a million dollars, so and so got three million dollars.' You don't know what to believe and it doesn't make any difference because you didn't get it. So you just think, 'get over it.' I guess.

Several participants mentioned the cost of the utilities being an avenue for TVA to make more money to pay for the spill, with Mike saying, "Everybody was expecting the utility bill to go up and I'm sure it probably did some but I tell you it wasn't really enough for me to notice to be honest with you." Similarly, Jane said, "Everybody says it's gonna make our rates go up. But they don't really need a reason for the--they go up

anyways, so . . .” Only Lyle really seemed to believe TVA has been actively using rate increases to pay for the spill. He said:

Any direction they want to go, they go. They make their own way. Just like paying for the ash spill. I’m sure that anytime you pick up the paper they’re increasing electricity rates. Well I’d say a few cents of that over millions of people you’ve paid for your ash spill. So I don’t feel like they’ve paid for nothing. I feel like the people have. I feel like all that money’s been-- by the people. So can you really say TVA--TVA’s done the work, but it was funded by the people in the communities, all over millions of people.

Contextual Ground

As noted in Chapter 3, every individual can be defined in part by what is important, or figural, to them, as well as what remains in the background, or ground, of their perception. The themes described above can be said to be figural to the participants based on the fact that these were the things they chose to speak about and focus on as examples of their experience with the ash spill.

Existential phenomenologists speak of four major grounds against which the human experience emerges: 1) space/world, 2) body, 3) time, and 4) relationship/others. In this study, participants’ experiences were grounded in space/world and time. The experience of the ash spill was that of a specific point in time at which the space/world they knew had to be re-interpreted and could thereafter be categorized into ‘before’ and ‘after.’ The theme Change, Loss, and Uncertainty is what is most figural to these participants. This Change, Loss, and Uncertainty takes place against the ground of time, specifically, before and after the moment of the spill. Victoria was especially surprised by the suddenness of the change, saying, “It kind of scared me because there used to be the lake and then all of a sudden you know it was

just gone. . . . And it was just, it was in an instant. I mean, from one day to the next it was totally different.” Deidre and Sue both remarked on how the spill had occurred at Christmas time, and how that disrupted people’s holiday. Sue spoke of the future when she said, “I just feel like that it will be with us for many years to come. The damages of it.”

Jane focused on the past and space/world when she talked about being concerned that TVA might purchase the graveyard where her father and brother are buried. She used the words “change” and “before” several times, discussing both her mother’s descriptions of the area before TVA and now how she will tell her grandchildren about the world before the ash spill:

I’m gonna be just like my mother and I’m gonna be able to say ‘Hey, back before the ash spill this is what it looked like.’ Because, and I really understood how my mother felt because the landscape had changed so much. Because I think they flood, didn’t TVA flood and make the water? When they came there they flooded the ground and made the lake there. And all of it used to be farm land. There were--the houses got washed away and that big ol’ house that got washed away was prime farm property and she’d always say, ‘When I was growing up,’ or ‘Back before TVA came’. . . . And it was just odd to me that my mother would tell me that and now, now I understand what you’re talking about mama, back before the TVA. Now it’s back before the ash spill. Because the whole thing is going to change and it already has changed. They built a new road, and made a new--like a bridge. It looks completely different than it did.

Though they only moved about two miles from the home they had built in Swan Pond, Diane’s discussion of the long-term planning she and her husband had done when building the house they eventually sold to TVA left me with a deep sense of a future aborted, a “before” where space/world was well-defined, comfortable, familiar, and could be expected to remain the same, and an “after” where space/world has become uncertain, uncomfortable, and disconcerting:

We built that house with the intention that we would be there forever. We tried to make every consideration for to take care of somebody's parents that we could finish the basement out for them to have their own separate place. We could have lived on the level of the house that we were on and had everything we needed and the upstairs could have been for the grandchildren and our children when they came home. But once you kinda lose that and it takes it away, you really think well it really don't matter, I guess I can just live anywhere you know. And you kind of have that feeling, you don't have that foundation I guess is what I'm trying to say, you just don't have that feeling like well this is where I am going to be forever. But it is what it is. So you just have to learn to live with what you're, new normal I guess.

Diane discussed the feeling of limbo when she and her husband were deciding whether to sell their home to TVA, and that the feeling only deepened after they sold, because they hoped to get to repurchase their home once the cleanup was finished. She said:

So when we sold that house we kinda bought this house as a, 'well we'll go there and stay until we can go home again.' So, I mean there's not anything wrong with this house but it's--there again we got here and we were in the very same situation, we were still in a holding pattern. We were there waiting to leave, and then we were here waiting to go back. And now we know we're not going back so that part of it's just done, it's just completely done.

Especially for Diane and Lyle, who had to move from their homes, but also for the other participants who have had to renegotiate space/world as they know it since the moment in time when the ash spill occurred, the phenomenological concept of "thrownness," applies against the ground of time. The ash spill threw the participants out of their comfort zone, changing their space/world, and they are now struggling to find ways in which to renegotiate the parameters of their lives.

Chapter 5: Discussion

Introduction

The purpose of this study was to explore the experience of living near Kingston, Tennessee, in the aftermath of the 2008 coal ash spill. Using existential phenomenology as the guiding research methodology, I interviewed 9 participants from the area and asked the question, "Please tell me about a time when you have been aware of the ash spill." Interviews were digitally recorded, transcribed, and analyzed using an approach to existential phenomenological research developed by Thomas and Pollio (2002). Analysis of the interview transcripts revealed four themes: 1) Change, Loss, and Uncertainty, 2) Inconvenience, 3) Powerlessness in the Face of Government, and 4) Shouldering the Cost Burden/People Getting Something for Nothing. In addition, three sub-themes were identified within Change, Loss, and Uncertainty: Landscape, Community, and Recreation. Each theme stood out against the dual contextual grounds of the world and time.

The phenomenological method of investigation is one that strives to report and identify more than to interpret. However, when findings are reflected in the literature, it is instructive to examine the similarities. This chapter will discuss how the study fits within the literature. In addition, implications of the findings for future research will be suggested.

Discussion of Study in Relation to Literature

In the 2010 Census, the residents of my study area, Roane County, Tennessee, were reported to be older, whiter, less educated, and poorer than the average American citizen (U.S. Census Bureau, 2011). They are also more likely to be employed in the natural resource/construction/maintenance occupations, and it has been my observation that the residents of the area tend to be ideologically conservative. While the literature suggests that Caucasians are statistically more likely than minorities to be concerned about the environment, all other demographics for this study area points to a community of people less likely to be concerned about the environment. The results of this study are in keeping with those findings.

In contrast to the demographic predictors of environmental concern, and as noted in the literature review, Cantrill and Senecah (2001) expect those who live closer to a potential environmental crisis to have more pro-environmental stances, especially those with a strong 'sense of self-in-place.' I would argue that these participants do have a strong 'sense of self-in-place,' having lived all of their lives in the same town and for the most part the same community. Diane expressed her sense of self-in-place when she said since moving she felt she no longer had a foundation. Later she said:

The folks that had recently moved in and didn't really seem to have much of a connection, I mean they probably skipped all the way out of town and thought man we just come out smelling like roses. Because they didn't have the sense of commitment to the community I guess is the big thing.

The most figural theme of this study, Change, Loss, and Uncertainty, illustrates the place attachment of the participants. The difficulty participants had comprehending

the changes to the landscape indicates the importance of their attachment to the landscape they had known. If they had not had personal, emotional, memorable experiences in the area, one imagines they would not have spoken about the change in such visceral ways. If one subscribes to Yi Fu Tuan's (1977) assertion that place equates to security, one must imagine that such a drastic change to the landscape of their lives would cause psychological trauma and uncertainty about the future. Victoria expressed that uncertainty and also how facing it has caused her to be more attentive to what she has now when she said:

That's how life is, you know, everything changes from day to day, and you never really know what to expect. But you just need to learn not to take for granted you know, anything really because you could wake up tomorrow and it be gone. And so--I wish that I would have really paid attention to the small details as some of the other people really did and I just didn't and now that I can't go back and see those things . . . I try to be more perceptive of things you know and pay attention to things now and I really didn't before that happened.

The emergence of the sub-themes community and recreation also support the 'sense of self-in-place' and place attachment of the participants. Since it seems obvious they care very much about the environment as a place in which they live and recreate, it may be too much extrapolation to say that they do not have strong concerns about the environment. It may be more appropriate to say that concern about the *health* of the environment was not a theme in the nine interviews I conducted, and therefore should not be considered figural to the experience of living in the Swan Pond area after the ash spill.

Concern about personal health related to the environment was also not identified as figural to the experience, although an outsider looking in might expect it to be. My

co-researchers in the EPRG expressed amazement that my participants expressed so little concern over the potential danger the spill posed to their health and the environment. In terms of bracketing their own reactions, a couple of my co-researchers allowed that perhaps because they themselves are nurses they are more attuned to the likelihood of health effects from the spill. They were especially appalled that Deidre, whose entire interview focused on the inconvenience of having air vents clogged with ash, did not seem concerned at all for what breathing the ash might be doing to her health. Participants expressed a great deal of sadness for the circumstances of the ash spill, but very little anxiety over the long-term physical effects it could have on them or the environment in which they live.

One of the things I found most curious was that only those who had actually taken a buyout from TVA seemed willing to admit they had been affected by the spill. People who lived in the area throughout the spill and cleanup (especially Sasha and Jane) said they weren't really affected, but then talked about dash passes, ash on their porches, seeing the lights and dust and hearing the clean-up in the middle of the night, missing their neighbors who had moved away, and remembering how they used to fish the area with family members long dead. These all seem to be effects the spill has had on them, and it gives the impression as Jane said, that no one wants to be seen as a griper. As Zavestoski and associates (2002) noted is often the case in the vicinity of heavy industry, many of my participants felt that the contamination was nothing new – that it had always been a part of the community and there was no reason to be alarmed simply because it had spilled:

- Honestly I really didn't see it being that big of a thing. I don't know, especially with them saying it's always been there, it's always been around. (Sasha)
- I was never afraid of it. But we've lived there all of our life. All of my life we've lived there. I wasn't afraid of that stuff. It blew across that--there was a lot of dust in the air. Lots and lots of dust in the air. But I never was afraid. (Diane)
- You know the ash pond that we've seen over the years that increasingly got bigger and bigger and bigger. And the dyke went higher and higher and higher and the sludge and the ash that was produced from the steam plant. It was just--. I don't know. I don't know how you put it. We never really thought about it. Because we were kids. And then being raised in it all of our life we never thought of it being as a health concern or nothing like that. (Lyle)

This suggests the potential of contamination has become part of the contextual ground of the world to participants, and could be a factor in their seeming lack of concern for the health of the environment for which they live.

Of the three distinctions between natural and technological disasters identified by Freudenburg (1997), one is certainly present – ambiguity of harm. While participants expressed little true worry over their exposure to the coal ash, they did generally note that they weren't certain they were not affected. Sasha and Deidre said they worried more about their dogs than themselves, which indicates that they did worry to some degree. Diane said she and her husband did not think the ash was dangerous, but she still got chest x-rays shortly after the spill which suggests there is some doubt in her mind:

I say that, that we never were afraid, but about 3 days after the ash spill I went to my physician and had a chest x-ray. So maybe I'm a liar but I said well let's get a chest x-ray, keep it on file, because if 10 years down the road I've got some big massive weird kind of lung cancer then it's a different story. Would I be angry, you better believe I'd be angry. But--you know its coal ash and at what point could you say that you got all that you know. Did you get it after the spill or you got it cumulatively over time?

Freudenburg's other two distinctions, the emergence of a corrosive community and concerns about recreancy, while not quite as obvious, could still be in the nascent

stages. Recall that corrosive communities occur where the authorities deny blame or attempt to shift it and victims become cynical toward those who appear to be responsible. Deidre let me listen to a voicemail she got the night of the spill from the local emergency management agency that said “This emergency will take several days to correct.” She expressed her mystification that the authorities could be so far off the mark at how long the clean-up would take. Participants also seemed cynical toward, but not necessarily angry at, TVA. As noted in theme 3, powerlessness in the face of government, participants understood that TVA had likely shirked their responsibility in maintaining the dam, but they did not feel there was anything effective they could do about the situation. Mike in particular said he had expected something like the spill to happen since childhood:

It’s something that we expected to happen eventually anyways to be honest with you. Because it’s just--just the way it--I mean for years you know ever since I was a kid . . . whenever you pass by you just see the mound that was there accumulating over time and eventually it was just such a mound everybody was like, you know eventually that’s going to have to give way or something, you know. They just kept piling on top of each other and piling and piling it on. And eventually you know of course it gave way.

Lyle, too, said he had felt for some time before the incident that work needed to be done on the dam and he believed TVA knew it was a problem before it failed:

I guess several times I said you know that dyke’s gonna burst. It’s over full and it’s leaking and I said it can’t last much longer. And basically when they started drilling and core drilling and all that I believe that caused the problems that they had. . . . I think they realized we got a problem we can’t fix it from the top and we got all this backed up behind it. So, who knows? They waited it out and built a few things and it didn’t work. It just gave way.

Lyle also noted that while he hadn't been worried about the ash in the past, after the spill TVA's actions caused him to wonder what other dangers could be in store for the area:

We never really thought about it. . . . Until the ash spill and then all of a sudden I guess TVA gets a little bit spooked and starts doing air monitoring and all that stuff. So then that starts making you think what in the world did they bury before EPA was involved, so you don't know.

Lyle and Deidre both lost more faith in TVA when they learned they would not be able to return to the homes TVA bought from them after the cleanup.

Participants' blasé attitudes about the ash call to mind Shriver and associates' description of collective identity in nearby Oak Ridge. Participants spoke somewhat derisively about people who were concerned about health effects; they seemed to feel that the majority of those who claimed ill health because of the spill were whiners looking for a handout. This type of attitude toward those who speak out could be seen as the heightened sense of 'we-ness' Shriver and associates (2000) discuss. If the people who believe themselves to have been detrimentally affected by the spill are aware their neighbors feel this way, it could be said to constitute sanctioning by the collective identity.

Also in keeping with Shriver and colleagues, even the participants who were certain they were breathing the dust and cleaning it off their homes did not seem to seriously entertain the idea that they could be harmed by it. That minimization of the possible dangers posed by toxins is also a manifestation of self-censorship, as are Sasha and Jane's assertions:

- I thought well, if I let it bother me then I'd worry myself to death about it. (Sasha)
- I pick the things I'm going to worry about and that wasn't one of them. (Jane)

Similarly, residents seemed to “avoid learning of or critically evaluating information about health risks” (p. 55), as was evidenced when Jane said, “The TV stations would just bombard us with details about--when they were going to have public meetings, and see I didn't go to any of the public meetings. I should have gone but I didn't. And I guess I just felt like I would never understand it. They were just pushing too much information to me for me to digest it.” Mary, who lived several miles farther from the spill than any other participants, was the only participant who mentioned getting information about the spill from media sources.

While these participants generally allowed that the Tennessee Valley Authority (TVA) was culpable for the dam failure that caused the ash spill, they also seemed less than angry about the issues the dam failure has caused. This could be due in part to the fact that these interviews began almost three years after the spill, and the sting might have worn off. Still, this was a life-altering event for at least two of the participants, who sold their homes to TVA and moved several miles away. Both had lived less than a mile from immediate family, and now live across town. While this distance may seem small in today's world of career mobility, this move took them farther than they had ever been from their families, removing them from the community in which they had lived their whole lives. The only real anger I heard in my interviews was from Deidre, but that anger was focused on the extra house cleaning the spill has caused her. However, as noted above, she professed her anger at the need for the

cleaning, but said nothing of note about any concerns that she was also breathing the stuff she was cleaning out of her air vents.

Overall, the tone of my participants toward TVA was one of understanding. Many of them noted that TVA had been in contact with them, that the utility was doing its best to clean things up and make things right. If anything, participants seem to believe that TVA is spending too much money and going to too much trouble to clean up the spill, remarking on overstaffing and the purchasing of properties which received no discernible impact. The most negative talk I heard toward TVA was couched in terms of concern over the possibility of rising utility rates. My co-researchers in the EPRG were deeply surprised that there was virtually no anger shown toward TVA in these interviews. They also had a difficult time believing that people who lived so close to the spill had professed very little interest in the on-going news coverage and research findings, although as seen above, this disinterest is actually consistent with the inhibition of community mobilization discussed by Shriver and associates (2000).

Similarly, while the environmental concern literature suggests this lack of concern is likely given the demographics of the area, one might expect that, having lived through something the national media called a technological disaster, people on the front lines of that disaster would have some angry, impassioned things to say about the perpetrator. Going beyond Shriver and associates' illustration, another theory as to why they have not done so, either collectively or to any great degree individually, is the manifestation of the third dimension of power, where a power entity exerts power so

long and so successfully that the powerless become quiescent and no longer act in their own best interests. as discussed by Gaventa (1980).

Jobs with TVA are coveted in my study area, with higher than average salaries and a solid retirement plan. Most of my participants know one or more people who work for TVA, which serves to give a personal face to the business. A few remarked on the economic boon of the clean-up, noting that several people in the county had found relatively high-wage jobs as a result of the spill. More than one of my participants used the phrase “you can’t fight city hall” as a justification for not being more concerned with the issues brought up by the spill. This articulates the powerlessness the people of the area likely feel in the wake of an entity that has the faces of both the federal government and big business.

It isn’t surprising that Diane’s discussion held the strongest sense of powerlessness since her family was displaced by the spill. Likewise, having seen two family members displaced by TVA, it is to be expected that Sue would express similar feelings. However, all of the participants in some way mentioned that TVA was powerful in the community and that in the end, what TVA wanted was what happened. As discussed in the literature review, Gaventa explains how those in a position of powerlessness can come to believe that what is good for those in power is also good for them, whether it is true or not. In this case, at least five of the nine people I interviewed stated they knew or believed the dam was unstable and likely to break before it did, yet none of them have taken any action against TVA for that negligence, even though the negligence caused two of them to have to move from their homes.

While I am not accusing TVA of consciously using mechanisms of power (such as threats or sanctions) against the constituents in its service area, Gaventa does explain that the powerful/powerless relationship is often self-sustaining once established: as the dominant may become so 'secure' with their position as to become 'oblivious'" (p. 11). Whether it was ever the intent of TVA to establish and maintain power over the people of the Tennessee Valley, Gaventa has compellingly argued that the people of the Tennessee Valley had learned to be quiescent before TVA's inception. TVA came into the Tennessee Valley with the might and power of the federal government, exercising eminent domain and flooding farms and towns. It is not a stretch to imagine that the people of the Tennessee Valley experience TVA in much the same way they experienced the American Association, Ltd., the coal company described as holding power in Gaventa's study.

The lack of observed anger, concern over health risks and concern about injury to the environment as figural to this study could be evidence of TVA's superior ability to roll with the punches and handle this technological disaster as well as possible. TVA has been working to clean up the spill since the moment it happened. They have funded damage assessment studies and been proactive in seeking out restoration activities that would benefit both society and the environment, from building new schools and gymnasiums to partnering with local watershed associations to improve water quality. They have put a lot of people to work in the Swan Pond community. It could be that TVA is simply doing a great job playing the cards it has been dealt.

However, it seems that many concepts found in the literature could also be in play. Picou and associates (2004) called disasters “catalysts for collective action,” but this one has not been. Zavestoski and colleagues (2002) explained how communities underpinned by industry sometimes take the pollution generated by those industries for granted, which is supported in this study by the direct quotes of at least three participants. Shriver and associates (2000) described ways in which a collective identity retards collective action; at least two of those mechanisms are easily identifiable here. Gaventa (1980) laid out a blueprint of how those in a position of powerlessness become and remain quiescent, using as his exemplar a community near in proximity and similar in culture and industrial history to the community examined in the current study. And Zavestoski and colleagues noted that when a community seems to have a consensual response to a disaster, it could be that the risks posed by the disaster have been effectively mitigated, *or* it could be that the power entities (government officials) have successfully “constructed for public consumption a symbolic account of a risk that . . . does not accurately reflect the actual risk” (2002, p. 391). Which of these is the case in the Swan Pond community is outside the scope of this research project, but is certainly a suggested avenue for future research. What I believe can be said definitively based on the primary and secondary sources used in this research project, is that conditions exist in Roane County, Tennessee, following the Kingston TVA Coal Ash Spill, which are conducive to a community with a strong collective identity overlooking their own best interests and remaining quiescent in the face of potential injury to their health and the health of their environment.

Implications of Study Findings for Disaster Response and Public Policy

The themes identified by this study suggest great care should be taken to keep communities and landscapes intact whenever possible after disasters. This should help mitigate the feelings of change, uncertainty and loss expressed by the participants. Requiring as few families to move as possible, and allowing those who must move to return as soon as it is feasible, will allow for as little disruption, change, and loss as possible under the circumstances. Reopening recreation areas as soon as potential danger has been mitigated should also be made a priority. A return to recreation can in many ways herald a return to normalcy, and can reduce stress and help people reconnect with one another and the places to which they are attached. While information dissemination seems a likely suggestion for reducing feelings of uncertainty, these participants did not indicate themselves to be avid consumers of publicized information, so clearly new avenues of effectively reaching community members should be explored.

While less existential in nature, minimizing inconvenience may significantly alleviate the day-to-day burden on the community. Participants expressed frustration over potholes, road closures, and big trucks (such as dump trucks) on small roads. They were also made uncomfortable by both the “rubberneckers” who came to see the spill and the roadblocks and barricades put up to keep the rubberneckers at bay. While this paradox may take some serious thought, keeping potholes filled, strictly enforcing speed limits and keeping oversized equipment off narrow roads are easy enough ways

to help avoid inconveniencing the people who live near a disaster cleanup, or for that matter, people who live near any natural resource management area.

The management implications for how a government agency can make itself seem less powerful and more open to challenge may not seem as clear-cut as how to reduce inconvenience or even get a community back to “normal” quickly after an unpleasant event. However, in this case it seems the intent of the agency is paramount to success. Just as a patient person can eventually win the trust of a scared child or animal, if a constituency is given every evidence that a government agency intends to work for the best interests of the constituency, and if the constituency is given enough opportunity to take advantage of the benefits of that goodwill and power is not exerted to destroy the gains made, Gaventa asserts that the inertia can be broken and a healthier relationship can begin to grow. TVA has done many good things in its service area as a direct result of the ash spill. If the agency continues to foster community enhancements and request community involvement and if its intent is the genuine betterment of the society in which it functions, eventually the society should break the inertia of acquiescence.

As discussed in the literature review, many authors believe those without strong group affiliations are more likely to be included in community-based/place-based collaborations than in the traditional policy formation process. Habitat Conservation Plans (HCP) is one example of this type of collaboration. The United States Fish and Wildlife Service sponsors HCPs as a proactive alternative to the traditionally punitive Endangered Species Act. HCPs bring as many stakeholders as possible to the table

(including NR agencies, non-governmental organizations, local politicians, developers, subject matter experts such as wildlife biologists, and local citizens) to plan the most appropriate way to develop natural resources while minimizing the effect on endangered species. Habitat Conservation Planning is a tool currently being used with varying degrees of success throughout the U.S. Such plans are most successful when the process includes a diverse group of people dedicated to communicating with one another and finding compromises to difficult issues. Instituting this type of inclusive decision-making could help TVA improve its image and gain support in its service area. Further, any agency that wishes to be both a good steward and a good neighbor should consider community-based collaboration as a means to fully engage and learn from their constituencies.

Implications of Study Findings for Further Research

As noted above, future research could focus on whether TVA and other government agencies (such as the Environmental Protection Agency and the Tennessee Department of Environment and Conservation) have in fact worked together to produce science and outcomes in the public's best interest, or if any attempts have been made to greenwash either the content of the ash or the activities of the cleanup and restoration. As noted in both Gaventa and Zavestoski, local news venues are often prone to be more complimentary toward polluters than national news media. A comparative study of news coverage could be one mechanism with which to examine the congruence between the stated and true risks related to the spill.

Whether the Swan Pond community, or Roane County in general, fails to act because of quiescence is another research opportunity. One way to test quiescence might be to separate the population into generational inhabitants of the TVA service area and relative newcomers to the area, especially those who have moved to the area from outside of Appalachia, and preferably who do not have generational family ties to the area. Examining the differences between these two groups' behaviors, attitudes, and reactions to the ash spill could be illuminating.

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Appendix A – IRB Application

FORM B APPLICATION

All applicants are encouraged to read the Form B guidelines. If you have any questions as you develop your Form B, contact your Departmental Review Committee (DRC) or Research Compliance Services at the Office of Research.

FORM B

IRB # _____

Date Received in OR _____

THE UNIVERSITY OF TENNESSEE

Application for Review of Research Involving Human Subjects

I. IDENTIFICATION OF PROJECT

1. Principal Investigator Co-Principal Investigator:

Complete name and address including telephone number and e-mail address

Amy L. Mathis, M.S.

Department of Forestry, Wildlife, and Fisheries

274 Ellington Plant Sciences Building

Telephone: 865-591-9064

Email: amathis@utk.edu

Faculty Advisor:

Complete name and address including telephone number and e-mail address

J. Mark Fly, Ph.D.
Department of Forestry, Wildlife, and Fisheries
274 Ellington Plant Sciences Building
Telephone 4-7979
Email: markfly@utk.edu

Department:

Forestry, Wildlife, and Fisheries
274 Ellington Plant Sciences Building
Telephone 4-7126

2. Project Classification: *Enter one of the following terms as appropriate:*

Dissertation, Thesis, Class Project, Research Project, or Other (Please specify)

Dissertation

3. Title of Project:

Local residents' experience of the Kingston, Tennessee coal ash spill: A phenomenological study

4. Starting Date: *Specify the intended starting date or insert "Upon IRB Approval":*

Upon IRB Approval

5. Estimated Completion Date:

December 1, 2011

6. External Funding (*if any*):

none

II. PROJECT OBJECTIVES

Early on the morning of December 22, 2008, at a Tennessee Valley Authority (TVA) site near Kingston, in Roane County, Tennessee, a retention pond holding approximately 1.7 million cubic yards of coal fly ash failed, spilling the waste into the nearby Emory River and inundating farms and homes in the Swan Pond community. The slurry lifted one home off its foundation and made several others uninhabitable. The clean-up effort, which was originally estimated to last four to six weeks, is now expected to last another three to four years. TVA bought out residents living within the impact zone, but most residents of the area remain in their homes.

Residents of Roane County have a unique perspective on this type of technological environmental disaster. This research project seeks to describe the experience of the spill and its aftermath for the people who live nearby. The specific research question this project will answer is, "What is the experience of living in the aftermath of the coal ash spill for a local resident in the Kingston, Tennessee area?" In order to find answers to that question, using a phenomenological approach, I will ask participants: "Think of a time when you have been aware of the coal ash spill, and describe it to me as fully as possible." This question is designed to elicit descriptions of what triggers thoughts of the coal ash spill. Some triggers could be driving past the clean-up effort, having a cough or some other malady perceived to be caused by the spill, seeing coverage in the newspaper or on the TV, or thinking of a neighbor who is no longer a neighbor, etc.

This project will be used as data for the PI's Ph.D. dissertation.

III. DESCRIPTION AND SOURCE OF RESEARCH PARTICIPANTS

Roane County residents 18 years of age or older will participate in this study. This research project is being conducted in conjunction with a larger social capital research project. The larger study has already identified several possible interview participants whose lives have been affected by the spill and it is likely that the study's investigators will not interview all of those on the list. Therefore participants will first be identified by contacting people on that list who will not be contacted for the larger study. If there are

not enough willing participants available from the initial list, the snowballing method of gathering references for future contacts from participants may be employed (Babbie, 1995). Difficulty in reaching a sufficient sample is not expected, as phenomenological sample sizes tend to be smaller than those of traditional interview research. This study seeks to interview approximately 8-15 participants. Ideal participants will be people who have lived in the Swan Pond community since before the ash spill and who still live in the area.

IV. METHODS AND PROCEDURES

Upon IRB approval, the PI will contact potential participants, explain the project including: its purpose (an interview study for the PI's Ph.D. dissertation), the methods that will be used (interviewing, digital recording, transcription), project goals (to better understand residents' experience of the ash spill), research question and approach (see Section II, above, and the discussion of phenomenological research, below, this section), and confidentiality safeguards (the use of pseudonyms, transcriptionists' confidentiality agreements, materials being kept in locked filing cabinets, etc.). She will further explain that participation is entirely voluntary, that they will be able to leave the study or stop the interview at any time, and that they will be asked to verbally agree to an informed consent (see attached Appendix A) that outlines their rights. The PI will offer to send these potential participants a copy of the informed consent for their review prior to the interview.

If they agree to be interviewed, the PI will schedule a time and place for an interview. Ideally, the interview would take place in the participants' homes, but other possible locations include local libraries, restaurants, or at the participant's place of work. The only specific question participants will be asked will be, "Think of a time when you have been aware of the coal ash spill, and describe it to me as fully as possible." The interview will then proceed in an open-ended, conversational style, with the PI asking questions only to encourage further elaboration and description of the experience. The types of follow-up questions the PI might ask include, "You said [repeat participant's statement]. Could you please explain what you meant by that?" and "Can you tell me what you were aware of at that time?" If time warrants and the participant is willing, the PI may ask the participant to describe other instances when the participant has been aware of the spill.

Interviews will be unstructured, lasting from 30 minutes to more than 1 hour. Upon beginning the interview, the PI will read the informed consent aloud to each participant and ask him or her to verbally agree to the informed consent. Participants will be encouraged to ask questions about the informed consent. A copy of the informed consent is attached as Appendix A. The participant's verbal agreement will eliminate the use of personally identifiable information on a signed informed consent.

Interviews will be digitally recorded and the files will be stored on a password-protected computer at the PI's home. Any personally identifiable information will be deleted from the transcripts. Participants will be given pseudonyms in the field notes as well as in the written report. No participant identities will be disclosed. Field notes will be generated by the PI during the interviews and will be stored in a locked cabinet in the PI's home office. The interviews will be transcribed either by the PI or by a paid transcriptionist who has signed a confidentiality agreement and any hard copies of the transcriptions will also be stored in the same locked cabinet. Digital recordings will be kept for three years by the PI and then deleted. Transcripts of the interviews will be retained for use by the PI as a secondary data source in future work. If the PI wishes to use this data in any additional research projects, an IRB will be submitted.

Qualitative research is concerned with examining specific cases of a phenomenon for the sake of understanding that phenomenon on its own terms. The phenomenological methodology used in this study seeks to distill an experience to its essence, drawing on descriptions of experience such that, when the themes are shared, others with similar experiences will have an "ah-ha!" moment, what Thomas and Pollio call the Eureka Factor (2002). Phenomenological inquiry seeks to identify overarching themes between lived experiences of participants by asking them to describe what they were aware of at the time, how that awareness made them feel and urging them to elaborate on the experience until a full picture of the experience is gained.

V. SPECIFIC RISKS AND PROTECTION MEASURES

The risk of harm to the participants is minimal and not considered to be any greater than that ordinarily encountered in daily life. Participants will be informed they are free to withdraw from the study at any time without penalty by notifying the PI. Should a participant express the desire to withdraw from the study, the PI will delete the digital recording of the interview and any electronic copies of the participant's transcripts, and destroy any hard copies.

The identities of the participants in this research project will be protected. Any identifying information will be deleted from the transcripts. Pseudonyms will be assigned at the onset of transcription and no key to the pseudonyms will be kept. Transcripts and field notes will be kept in locked filing cabinet drawers. The PI will gather informed consents by reading the informed consent aloud to the participants and asking if they agree at the beginning of the recorded interview. In this way there will be no written information that links any participants to any interviews.

Electronic transcriptions will be password-protected, with the password known only to the PI. Any transcription not done by the PI will be done by a paid transcriptionist who has signed a confidentiality agreement. The recordings of the interviews will be kept for three years by the PI

and then deleted. The transcripts of the interviews will be retained for use by the PI as a secondary data source in future work.

Participants will be given pseudonyms in the field notes as well as in the written report. No participant identities will be disclosed. Oral or written presentations will not present information or data that would allow participants to be identified.

VI. BENEFITS

While there are no direct benefits to participants, the PI hopes the results will inform policy related to disaster mitigation. Copies of the final report will be offered to all participants.

VII. METHODS FOR OBTAINING "INFORMED CONSENT" FROM PARTICIPANTS

After explaining the purpose and intent of the study to prospective participants, participants who wish to participate in the study will be asked to verbally agree to an informed consent statement read aloud by the PI at the beginning of the recorded interview. Participants will be encouraged to ask questions and will be provided a copy of the informed consent for their records. A copy of the informed consent is attached.

Transcripts, field notes, and any other materials will be kept in locked filing cabinet drawers. The home is locked when vacant. Electronic voice recordings and transcripts will be kept on a password-protected computer, with the password known only to the PI. The recordings of the interviews will be kept for three years by the PI and then deleted. The transcripts of the interviews will be retained for use by the PI as a secondary data source for future work.

VIII. QUALIFICATIONS OF THE INVESTIGATOR(S) TO CONDUCT RESEARCH

Amy Mathis (PI) is a Graduate Student in the Department of Forestry, Wildlife, and Fisheries. She has completed the introductory and advanced Cultural Studies courses on qualitative interviewing, 560 and 561. In addition, she has had courses in phenomenology, reflective practice, research methods in sociology and public administration, and survey research design. She completed a M.S. with a thesis reporting the findings of a survey to visitors to Mt. LeConte in the Great Smoky Mountains National Park. She has administered visitor use surveys that required visitor interviews, and has research experience in the form of survey administration and analysis. She has presented her work at regional, national, and international conferences.

IX. FACILITIES AND EQUIPMENT TO BE USED IN THE RESEARCH

A digital recorder will be used to record the interviews. The PI's desktop computer and home office will be used to transcribe interviews and to analyze the transcripts. The PI's lockable filing cabinet will be used to store transcripts and informed consent forms.

X. RESPONSIBILITY OF THE PRINCIPAL/CO-PRINCIPAL INVESTIGATOR(S)

The following information must be entered verbatim into this section:

By compliance with the policies established by the Institutional Review Board of The University of Tennessee the principal investigator(s) subscribe to the principles stated in

"The Belmont Report" and standards of professional ethics in all research, development, and related activities involving human subjects under the auspices of The University of Tennessee. The principal investigator(s) further agree that:

- 1. Approval will be obtained from the Institutional Review Board prior to instituting any change in this research project.**
- 2. Development of any unexpected risks will be immediately reported to Research Compliance Services.**
- 3. An annual review and progress report (Form R) will be completed and submitted when requested by the Institutional Review Board.**
- 4. Signed informed consent documents will be kept for the duration of the project and for at least three years thereafter at a location approved by the Institutional Review Board.**

XI. SIGNATURES

ALL SIGNATURES MUST BE ORIGINAL. The Principal Investigator should keep the original copy of the Form B and submit a copy with original signatures for review. Type the name of each individual above the appropriate signature line. Add signature lines for all Co-Principal Investigators, collaborating and student investigators, faculty advisor(s), department head of the Principal Investigator, and the Chair of the Departmental Review Committee. The following information should be typed verbatim, with added categories where needed:

Amy Mathis, Principal Investigator: _____

Signature: _____ **Date:** _____

Co-Principal Investigator: _____

Signature: _____ **Date:** _____

J. Mark Fly, Student Advisor (if any):

Signature: _____ **Date:** _____

XII. DEPARTMENT REVIEW AND APPROVAL

The application described above has been reviewed by the IRB departmental review committee and has been approved. The DRC further recommends that this application be reviewed as:

☐ Expedited Review -- Category(s): _____

OR

☐ Full IRB Review

Chair, DRC: _____

Signature: _____ **Date:** _____

Department Head: _____

Signature: _____ **Date:** _____

Protocol sent to Research Compliance Services for final approval on (Date) :

Approved:
Research Compliance Services
Office of Research
1534 White Avenue

Signature: _____ **Date:** _____

For additional information on Form B, contact the Office of Research Compliance Officer or by phone at (865) 974-3466.

Appendix B – Informed Consent Form

**Local Residents' Experience of the TVA Ash Spill in Kingston, Tennessee
Informed Consent Statement**

Introduction

You have been invited to participate in a research project designed to learn about your experience with the TVA Coal Ash Spill. This study seeks to answer the question, "What is the experience of living in the aftermath of the coal ash spill for a local resident in the Kingston, Tennessee area?" The researcher for this study is a graduate student at The University of Tennessee, Knoxville, in the Department of Forestry, Wildlife, and Fisheries. This research is part of the researcher's Ph.D. dissertation. There are no commercial sponsors for this study.

Information about Participants' Involvement in the Study

You have to be 18 years of age or older to participate in this study. As a participant, you will be interviewed by the researcher concerning your experience with the TVA Coal Ash Spill. This interview may take place in your home or at a public meeting area, whichever you prefer. The interview will be recorded and it will take about one hour to complete.

Confidentiality

You will be given a fictitious name (or alias) to use during the interview to maintain confidentiality so your name will not be connected to the recording or transcript that will be made from the recording. Once the interview is transcribed the recording will be deleted. All identifying information in the transcript will also be deleted. No record (written or electronic) will be made linking your real name to your alias. Both the electronic and paper files will be kept confidential, with the electronic files being password protected on the researcher's computer and the paper files kept in a locked cabinet. Both the computer and the cabinet are in the researcher's home office. The transcripts of the interviews will be retained for use by the PI as a secondary data source for future work.

Contact Information

If you have questions at any time about the study or the procedures, you may contact the researcher, Amy Mathis, at 565 Mossy Grove Road, Harriman, Tennessee, 37748. She may be reached by telephone at 865-591-9064. If you have any questions about your rights as a participant, contact the University of Tennessee Research Compliance Services of the Office of Research at 865-974-3466.

Participation

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty. If you withdraw from the study before the interview is completed, your recording will be deleted.

Consent:

I have received and read a copy of this form. I certify that I am at least 18 years old. I agree to participate in this study.

EXPEDITED APPROVED

DATE 2.24.2011
Brenda Lawson
Compliance Officer & IRB Administrator

Vita

Amy Mathis was born in Kettering, Ohio. Shortly thereafter her family moved to the Mossy Grove community in Morgan County, Tennessee. She attended Wartburg Central High and graduated as salutatorian in 1993. She attended Roane State Community College, Austin Peay State University, and the University of Tennessee, Knoxville, on the road to completing a B.A. in English Literature from U.T. in December 1998. Amy returned to school in 2000 to pursue a career in which she could work toward the preservation and conservation of natural resources. She received her M.S. in forestry in 2004. Since finishing her M.S. she has worked for Tennessee State Parks, the National Park Service and the Natural Resources Conservation Service. She recently accepted a new assignment with the National Park Service as a Damage Assessment Case Officer for the Mississippi Canyon/Deepwater Horizon oil spill. She is excited to be moving to the Gulf of Mexico to learn more about its resources and culture.